

ANNUAL REPORT 2025



GADRI

Global Alliance of
Disaster Research Institutes

GLOBAL ALLIANCE OF DISASTER RESEARCH INSTITUTES

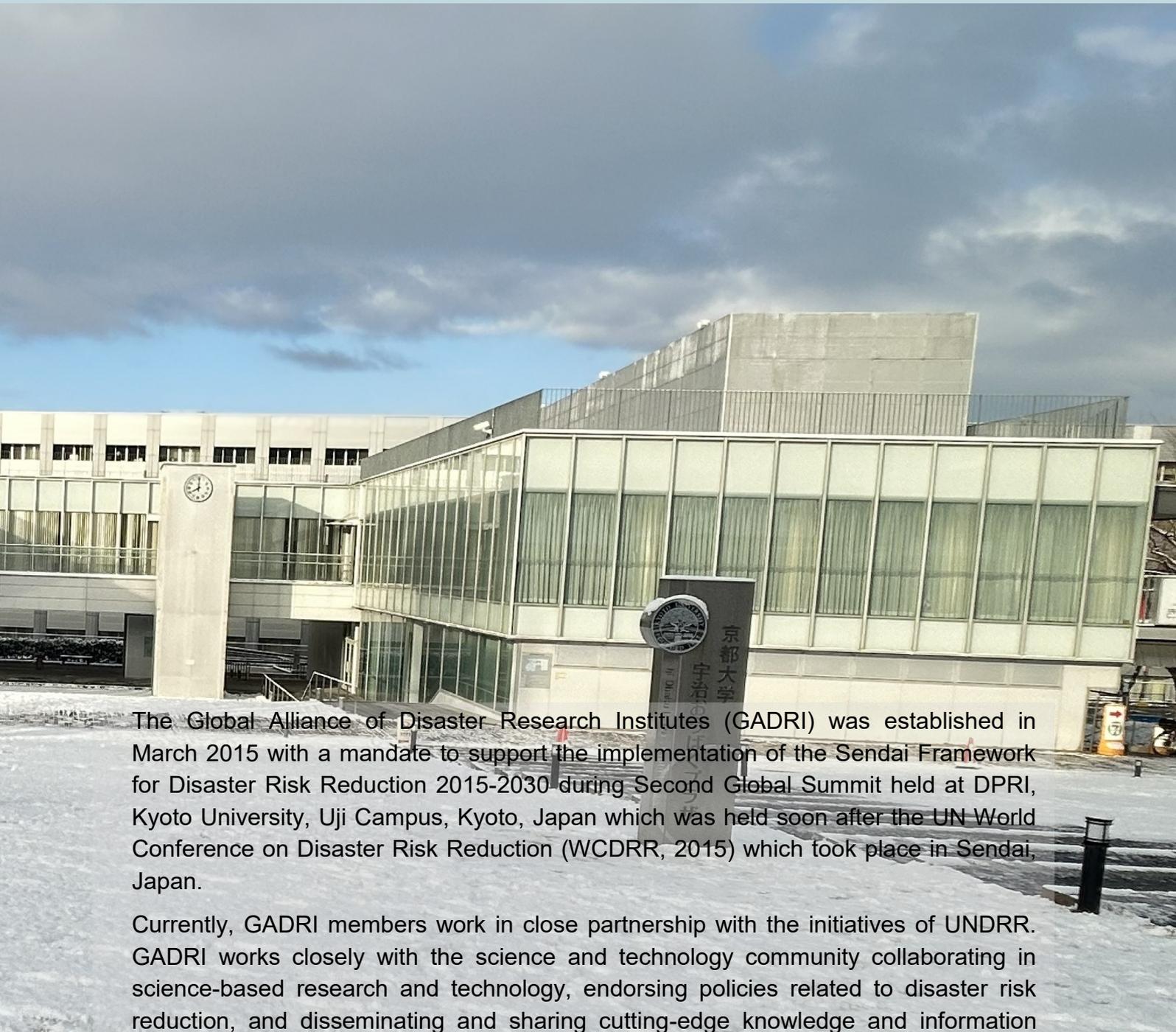
Global Alliance of Disaster



The 2011 Global Summit paved the way to start the Global Summit series of GADRI. In November 2011, the Disaster Prevention Research Institute (DPRI), Kyoto University held the First Global Summit of Research Institutes for Disaster Risk Reduction which was held at DPRI, Kyoto University, Uji Campus, Kyoto, Japan in November 2011. At the conference, it was proposed to establish a network of disaster research institutes to be fostered by DPRI, Kyoto University to bring together research institutes working on disaster risk prevention and mitigation in various disciplines.

**GADRI Secretariat is hosted by:
Disaster Prevention Research Institute (DPRI),**

Research Institutes (GADRI)



The Global Alliance of Disaster Research Institutes (GADRI) was established in March 2015 with a mandate to support the implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030 during Second Global Summit held at DPRI, Kyoto University, Uji Campus, Kyoto, Japan which was held soon after the UN World Conference on Disaster Risk Reduction (WCDRR, 2015) which took place in Sendai, Japan.

Currently, GADRI members work in close partnership with the initiatives of UNDRR. GADRI works closely with the science and technology community collaborating in science-based research and technology, endorsing policies related to disaster risk reduction, and disseminating and sharing cutting-edge knowledge and information supported by evidence-based research among research institutions, international organizations and the private sector in various nation states. GADRI community continue to evolve and strengthen research activities towards disaster risk reduction and management and find implementable solutions to achieve disaster resilience in the world.

Kyoto University, Uji Campus, Kyoto, Japan

We acknowledge with gratitude and thank all our members for their continued support to GADRI; and the inputs shared for the GADRI Annual Report 2025.

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GADRI Annual Report 2025





Message from the Secretary-General, GADRI

Dear Members of GADRI,

Greetings!

We are pleased to share with you the 2025 GADRI Annual Report showcasing activities of the GADRI community. This will also give you another opportunity to catch up on activities that you may have missed out; and a chance to reconnect with each other.

During 2025, we were successful in taking the Global Summits of GADRI to a global destination with the generous support and help from Prof. John van de Lindt, Colorado State University, Fort Collins, Colorado, USA.

The 7th Global Summit of GADRI - Converging Disaster Research and Stakeholder-Engagement for Resilience was hosted by the Colorado State University Fort Collins, Colorado, USA from 21 to 23 July 2025 as well as the 10th Anniversary of GADRI Celebration on 20 July 2025. There were nearly 100 participants.

We thank all of you for your continued support and contributions to the Summit and making it a success. We have also started the process to collect papers for the Proceedings of the 7th Global Summit of GADRI and the 10th Anniversary Celebration of GADRI. Do not hesitate to share your contributions with us. You may find further details of these events on the GADRI home page and GADRI Actions.

Given our mutual interests with the Integrated Research on Disaster Risk ("IRDR") International Programme Office ("IPO"), Beijing, China, GADRI successfully concluded a Memorandum of Understanding in December 2025 for collaborative partnership with IRDR IPO. We intend to start our collaborative

partnership activities, especially under the "Facilitation of exchange (of students and researchers); cooperation between the universities and institutions" as soon as possible.

This year we conducted the general elections to fill the upcoming vacancies at the Board of Directors of GADRI. Sadly, we have to let go of five members of the Board as they near the end of term of office by March 2026. We are ever grateful for their steadfast and valuable support and contributions to realization of GADRI's vision during their tenure with the Board of Directors of GADRI.

The 6th Open Discussion Forum of GADRI will be held in March 2026 at the Disaster Prevention Research Institute (DPRI), Kyoto University, Uji Campus in March 2026. Should you be interested in participating, do not hesitate to contact us.

GADRI work is a collective effort, and we are grateful for your constant input and sharing of information without which we cannot function as a community. We will keep you updated through GADRI home page, e-mails and newsletters. Let us continue to work together to bring disaster risk reduction and management, and disaster resilience to our homes and communities.

Yours sincerely

Hirokazu Tatano

Secretary-General, GADRI



GADRI Vision

To deepen the understanding of disasters and find implementable solutions to achieve disaster resilience, by integrating knowledge and technologies from around the world.

GADRI Objectives

GADRI seeks to contribute to enhancing disaster risk reduction and disaster resilience in close collaboration with organizations around the world through sharing of information, knowledge, experiences, ideas and initiatives on relevant research.

- To establish a global research network that promotes and engages disaster research.
- To provide a research roadmap, with plans that help facilitate the organization of disaster research groups.
- To promote capacity building and development of disaster research institutes and enhances researcher and student exchange.
- To promote exchange and sharing of data and information for scientific research across the globe.
- To serve as an advocacy organization presenting evidence-based approaches that influence decision-making processes.

GADRI Activities

- Planning and organization of regionally or globally collaborative disaster risk research initiatives
- Formation of international research groups to investigate current global disasters, and implement new research methodologies for disaster risk reduction and implementation
- Establishment of an international network for timely communication related to research on disasters
- Organization of conferences, workshops and meetings
- Dissemination and sharing of information, publications, reports, data and other research outputs
- Facilitation of rapid reconnaissance field surveys following disasters
- Preparation of GADRI news releases, policy recommendations, news bulletins, research reports, and other publications.

Disaster and Risk Research: GADRI Book Series

Disaster and Risk Research: GADRI Book Series

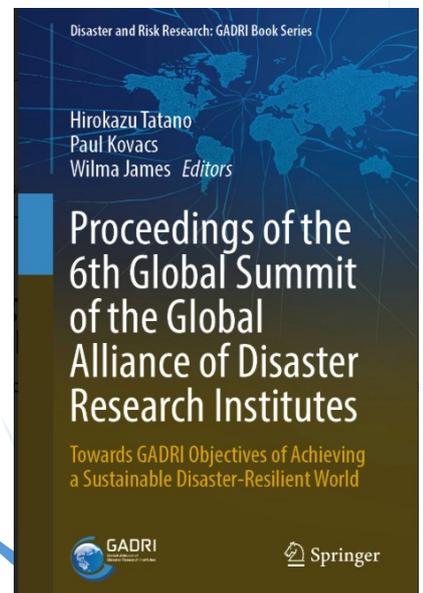
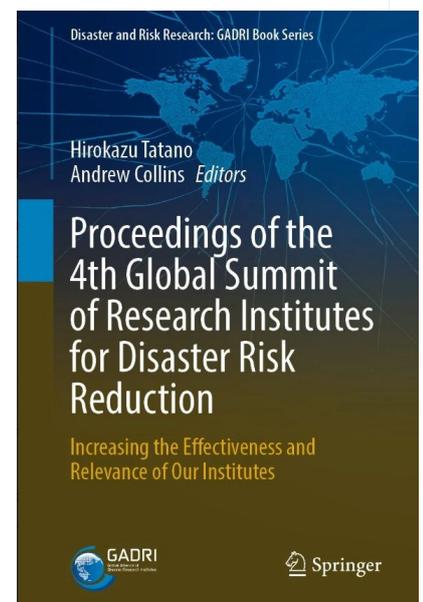
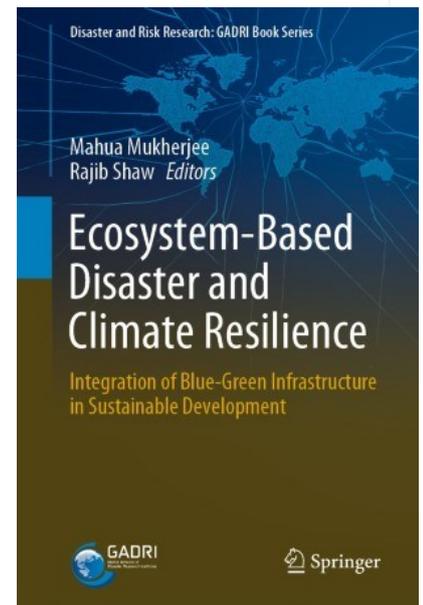
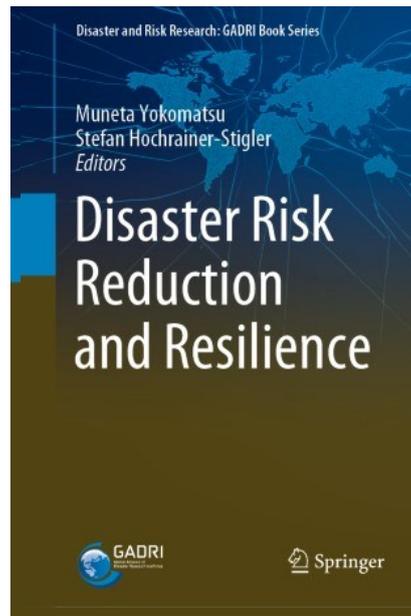


Springer

Disaster and Risk Research: GADRI Book Series is published under the auspices of the Global Alliance of Disaster Research Institutes (GADRI). The global status of disaster research reflects the major strides made in the disaster sciences. These volumes present the forefront of disaster research, including key scientific findings, methodologies, policy recommendations and case studies. Whilst disaster risk needs to be managed in an integrated manner, persistently isolated applications of knowledge, practice and policy are falling short of ensuring disaster-resilient societies.

Responding to this deficit calls for measurement, tools, techniques and institutional structures that can realistically support comprehensive risk assessment and management across multiple hazard landscape. As such, disaster research is now faced with a multi-disciplinary, multi-stakeholder challenge. Contributions to this series therefore address many varied and critical opportunities to advance the subject area. A cross-cutting vision shared across the Disaster and Risk Research volumes is to improve the future of scientific and technological guidance with clearly identifiable roadmaps to ensure human safety and security.

<https://www.springer.com/series/16177>



GADRI work in close partnership with the UNDRR

The Global Alliance of Disaster Research Institutes (GADRI), established during the same year as the Sendai Framework for Disaster Risk Reduction was adopted in 2015, aims at stock taking of progress and achievements in DRR research from its members towards the targets of the Science and Technology Roadmap to implement the goals and priorities of the Sendai Framework Agenda.

During the Global Summits of GADRI, members of GADRI are requested to report on their institute progress through a survey, voluntary progress reports and through the conference discussion sessions.

At the end of each conference, the Board of Directors of GADRI will share the achievements and recommendations received from the survey and the discussion sessions with the UNDRR Office.

The Fifth Open discussion Forum of GADRI was held at the Disaster Prevention Research Institute (DPRI), Kyoto University, Japan on 12 March 2024 focused on the deliberations of the previous discussion session; and recommendations shared by the members of the Board and audience. Particular focus was directed to share the ongoing support for the overall context of the Political Declaration of the high-level meeting on the midterm review of the SFDRR 2015-2030. GADRI member activities are closely interlinked with the objectives of the global political agendas—SFDRR, Paris Agreement, SDGs.

A task force committee was formed to build a draft resolution collating various recommendations by each presenter and the comments received by the audience.

It is expected to present the document at the next UNDRR Global Platform for Disaster Risk Reduction to be held in Geneva, Switzerland in June 2025.



SENDAI FRAMEWORK
FOR DISASTER RISK REDUCTION 2015-2030

GADRI Concludes a Memorandum of Understanding with the Integrated Research on Disaster Risk International Programme Office (IRDR-IPO)



GADRI
Global Alliance of
Disaster Research Institutes



IRDR

Integrated Research on Disaster Risk

The Global Alliance of Disaster Research Institutes (GADRI) and the Integrated Research on Disaster Risk (“IRDR”) International Programme Office (“IPO”), given their mutual interests, concluded a Memorandum of Understanding for collaborative partnership.

THE PARTIES HAVE THEREFORE AGREED TO THE FOLLOWING:

The Parties agree to implement the agreements defined in the MoU on mutually acceptable terms, the details of which are to be jointly developed by the Parties within the guidelines of applicable policies, rules and regulations.

In areas where their objectives overlap, the Parties may seek cooperation through common actions, in particular in DRR Education, in the form of:

- Joint academic projects;
- Jointly facilitate development of materials and technical trainings to enhance institutional capacity building;

- Facilitation of exchange (of students and researchers); cooperation between the universities and institutions; and
- Promotion of best research studies and practices.

The MOU was signed by Prof. Hirakazu Tatano, Secretary-General of GADRI; and Prof. Saini Yang, Executive Director of IRDR IPO in December 2025.



GADRI Lecture Series

Under the GADRI lecture Series, Prof. Peter Sammonds, Professor of Geophysics and Climate Risks, Department of Risk and Disaster Reduction Faculty of Maths & Physical Sciences, University College London, United Kingdom delivered a lecture on Climate and Natural Hazard Risks to students and faculty of the Disaster Prevention Research Institute (DPRI, Kyoto University, Uji Campus, Kyoto, Japan on 15 May 2025.

The climate is in transition. People are calling for a 'just transition' and for 'climate justice'. But what do these terms mean? Transition to what? And what even is progress?

Those calling for radical change, such as Naomi Klein in 'This Changes Everything' or Kate Raworth in 'Doughnut Economics', point to the threats from extreme hazards. But the focus needs to be on risk:

- Hazard risk is made up of the components of the hazard, exposure to the hazard, vulnerability and adaptive capacity.
- To address risk, we fundamentally need to address vulnerability, in all its dimensions.
- A multi-hazard risk approach is needed as climate driven hazards cannot be treated separately.

In this talk we examine our current pathway and what actions are needed to reduce disaster risks as the economy and society re-structure. We cannot divorce our current situation from historically how we have got here. This means understanding and addressing inequality, exploitation, environmental degradation and colonial legacies.



There is human agency in public policy, corporate investments and personal choice on how to address vulnerability to hazard risks. This is key to the managing the transition. But it is important to look at real data, real lived experiences and primary sources of information as we need to get behind the headlines and social media comment in order to plan from the future we want.

Celebration of the 10th Anniversary of GADRI

Lory Student Center, Colorado State University, Fort Collins, Colorado, USA

20 July 2025



The Celebration of the 10th Anniversary of the Global Alliance of Disaster Research Institutes (GADRI) was held at the Colorado State University, Fort Collins, Colorado, USA on 20 July 2025 from 13:00h to 17:00h. The Master of Ceremonies for the program was Dr. Roger Baars, GSGES, Kyoto University welcomed everyone to the meeting and encouraged them to share their experiences and stories during the past 10 years of alliancing in disaster risk reduction and resilience to disaster.

The meeting focused on the history and future of the scientific community, particularly GADRI activities and its future directions. The importance of collaboration and knowledge sharing were discussed; and noted the importance of global platform such GADRI to coordinate science reports and activities. The meeting

also addressed the role of regional STAGs and the potential for GADRI to step up in this area.

The Opening Session of the Ceremony was attended by the following speakers:

- Prof. Tomoharu Hori, Director, Disaster Prevention Research Institute (DPRI), Kyoto University, Japan. In his opening remarks, Prof. Hori highlighted, specifically, GADRI's growth to 218 institutes across 57 economies since its 2015 establishment. The Secretariat of GADRI is hosted by DPRI. Prof. Hori continued to assure DPRI's commitment to host the GADRI Secretariat at the DPRI, Kyoto University, Uji Campus.

PROGRAM

Celebration of the 10th Anniversary of GADRI

Longs Peak, Lory Student Center, Colorado State University, Fort Collins, USA

Sunday, 20 July 2025 from 13:00H

13:00		Registration
13:15-13:45		Opening Greetings Chair: Roger Baars, G3 OE3, Kyoto University
		Greetings Tomoharu Horii, Director, Disaster Prevention Research Institute (DPRI), Kyoto University, Japan
		Greetings John van de Lindt, Co-Director, Center for Risk-Based Community Resilience Planning, Colorado State University, Fort Collins, USA
		Reflections on GADRI Paul Kovacs, Chair, Board of Directors of GADRI; Executive Director, Institute for Catastrophic Loss Reduction (ICLR), Western University, Canada
		GADRI Milestones—10 Years of International Collaboration in Disaster Risk Reduction Hirokazu Tanano, Secretary-General, GADRI; and Professor, DPRI, Kyoto University, Japan
13:45—15:00		First Decade of GADRI: Achievements and Our Collective Contributions to the Science and Technology Community — Chair: Norio Maki and Kaus hal Karam Niyage
		Keynote Speech
		What does it mean to alliance disaster research, and what next? Andrew Collins, First Chair of Board of Directors of GADRI; Department of Geography / Disaster and Development Network (DDN), Northumbria University, Newcastle, United Kingdom
		Panel Discussion Session I: (5-8 minutes presentations)
		Progress of DRR DX Science and Technology Kaoru Takara, President, National Research Institute for Earth Science and Disaster Resilience (NIED), Tsukuba, Japan
		Grelohen Kalonji, International Research Center for Big Data for SDGs (CBAS), Beijing, China
		Yulchi Ono, International Research Institute for Disaster Science (IRIDeS), Tohoku University, Japan
		Summary report
		Group Photo
15:00-15:15		Coffee Break
15:15-18:30		Panel discussion II: Roadmap for the Next Decade of GADRI and Contributions to the Sendai Framework Chair: Tetsuya Take mi, and Nobuhito Mori, DPRI, Kyoto University
(5-8 minutes presentations)		Results of the Questionnaire Survey Genta Nakano, DPRI, Kyoto University, Japan
		3FDRR—Preliminary Questionnaire Evaluation Norio Maki, DPRI, Kyoto University, Japan
		Roadmap for the Next Decade of GADRI and Contributions to the Sendai Framework Virginia Murray, Head, Global Disaster Risk Reduction, UK Health and Security Agency, UK
		Contributions from the African Alliance of Disaster Research Institutes (AADRI) Desmond Manatsa, President, AADRI; and Executive Dean, Faculty of Science and Engineering; Bindura University of Science, Zimbabwe
		Paul Kovacs, Chair, Board of Directors of GADRI; and Executive Director, ICLR, Canada
		Activities of South Asia Alliance of Disaster Research Institutes (SAA DRI) Mahuz Mukherjee, Head, Department of Architecture and Planning, Indian Institute of Technology (IIT), Roorkee, India
		Disaster Research with Climate Change Nobuhito Mori, Kyoto University, Japan
		Summary Report
18:30-17:00		Wrap-up and Closing Chair: Andrew Collins Paul Kovacs, Norio Maki, Nobuhito Mori and Yulchi Ono Closing Remarks—Hirokazu Tanano

10 years of history of GADRI



First meeting of the Board of Directors of GADRI, DPRI, Kyoto University, Uji Campus, March 2016

- 2015 • Establishment of GADRI with 83 participants from 21 economies attending the 2nd Global Summit of GADRI: The 1st, purpose sharing knowledge and promoting collaboration on topics related to disaster risk reduction (DRR) and resilience to disasters, as well as to provide support to the UNISDR Sendai Framework and its goals towards DRR. The 2nd, "Global Alliance of Disaster Research Institutes (GADRI)" has officially been established. DPRI was designated as the GADRI Secretariat, and Prof. Hiroakazu Tatano was appointed as its Secretary General. All members attending the summit were invited to join GADRI.



Booth of the World Bosai Forum at the Global Platform of UNDRR in Cancun, Mexico, May 2017

- 2016 • Formation of the Board of Directors of GADRI represented by 11 economies, with Prof. Andrew Collins as the first Chair of the Board.
 - Establishment of the Charter of GADRI
 - GADRI representation at the Science and Technology Conference of UNDRR in Geneva, Switzerland, where the Science and Technology Roadmap was adopted
 - Organized the 1st Open Discussion Forum of GADRI, March 2016
 - Publication of the first GADRI newsletter - GADRI Actions Summer 2016

- 2017 • GADRI organized the 3rd Global Summit of GADRI in March 2017
 - Launched GADRI Book Series: Disaster and Risk Research under the imprint Springer
 - Established the editorial committee of GADRI



- 2018 • Publication of the first Annual Report of GADRI - GADRI Annual Report 2017
 - Organized the 2nd Open Discussion Forum of GADRI, March 2018

- 2019 • Organized the 4th Global Summit of GADRI in March 2019
 - GADRI Contributions to the contextualization of the Science and Technology Roadmap on the Implementation of the Sendai Framework for Disaster Risk Reduction on 2015-2030, UNDRR Global Platform May 2019

2nd Open Discussion Forum of GADRI, March 2018

- 2020 • Organize the 3rd Open Discussion Forum of GADRI
 - Publication of the first GADRI book - Disaster Risk Reduction and Resilience by Muneta Yokomatsu and Stefan Hochrainer-Stigler



- 2021 • Organized the first online 5th Global Summit of GADRI within 27 hours, covering the globe with a participation of 640 participants from 77 economies
 - Publication of the Proceedings of the 3rd Global Summit of GADRI
 - Publication of the book on Ecosystem-Based Disaster and Climate Resilience by Mahua Mukherjee and Rajib Shaw

- 2022 • Organized the 4th Open Discussion Forum of GADRI

2025

- 2023 • Publication of the Proceedings of the 4th Global Summit of GADRI
 - Organized the 6th Global Summit of GADRI, DPRI, Kyoto University, March 2023

- 2024 • Organized the 5th Open Discussion Forum of GADRI

- 2025 • The 7th Global Summit of GADRI was organized at Colorado State University, Fort Collins, Colorado, USA, in July 2025
 - Publication of the Proceedings of the 5th and 6th Global Summits of GADRI

Prof. John van de Lindt, Co-Director, Center for Risk-Based Community Resilience Planning, Colorado State University, Fort Collins, Colorado, USA is the co-host of the celebration. Prof. van de Lindt and his colleagues facilitated the event by hosting and organizing all logistics for the event.

Prof. van de Lindt, representing Colorado State University, welcomed attendees and acknowledged the collaborative efforts leading to hosting the event. Through Prof. van de Lindt's effort, GADRI events leading to the 10th Anniversary of GADRI and the 7th Global Summit of GADRI as well as the Board meeting, were hosted by the Colorado State University, Fort Collins, in the foothills of the Rocky Mountains.

Prof. Paul Kovacs, Chair, Board of Directors of GADRI; and Executive Director, Institute for Catastrophic Loss Reduction (ICLR), Western University, Canada. Prof. Kovacs reflected on GADRI's progress since its establishment, emphasized the need for continued research collaboration and community resilience, while expressing gratitude for the organization's relevance amidst global challenges. Prof. Kovacs is one of the founding members of GADRI.

Prof. Hirokazu Tatano, Secretary-General of GADRI; and Head, Research Center for Climate Change Adaptation Strategy, DPRI, Kyoto University, Japan. Prof. Tatano expressed his appreciation and thanked everyone for the continued support, cooperation and collaborations extended to GADRI. He acknowledged and thanked the host, Prof. John van de Lindt for helping GADRI realize the vision to move GADRI Summit series abroad.

The keynote speech was delivered by the First Chair of the Board of Directors of GADRI, Prof. Andrew Collins, Professor Emeritus, School of Geography and Natural Sciences, Northumbria University, UK on "What has it meant to alliance disaster research, and what next?". He discussed what GADRI has achieved so far as an alliance, and how it has been effectively contributing to the UNDRR Sendai Framework Agenda and other global agenda on climate change and SDGs. He stated that disaster risk reduction is needed in all aspects of sustainable development. The engine of change is to think and act globally, think and act locally and identify and help to alter social, environmental and economic ways of living orientated to survivability. It is part of the interrelated agenda of disaster risk reduction and response, using our research and education orientated capacities indefinitely and at all levels.



The First Panel Discussion focused on the First Decade of GADRI: Achievements and our collective contributions to the Science and Technology community which was chaired by Prof. Norio Maki, DPRI, Kyoto University. The panelists were:

- Progress of DRR DX Science and Technology by **Prof. Kaoru Takara**, President, National Research Institute for Earth Science and Disaster Resilience (NIED), Tsukuba, Japan
- **Prof. Gretchen Kalonji**, International Research Center for Big Data for SDGs (CBAS), Beijing, China
- **Prof. Yuichi Ono**, International Research Institute for Disaster Science (IRIDeS), Tohoku University, Japan

The second panel discussion session was on Roadmap for the next decade of GADRI and contributions to the Sendai Framework which was Chaired by Prof. Tetsuya Takemi, DPRI, Kyoto University. Panelists included:

- Results of the Questionnaire Survey by Dr. **Genta Nakano**, DPRI, Kyoto University, Japan

- SFDRR—Preliminary Questionnaire Evaluation by **Prof. Norio Maki**, DPRI, Kyoto University, Japan
- Roadmap for the Next Decade of GADRI and Contributions to the Sendai Framework by **Prof. Virginia Murray**, Head, Global Disaster Risk Reduction, UK Health and Security Agency, UK
- Contributions from the African Alliance of Disaster Research Institutes (AADRI) by **Prof. Desmond Manatsa**, President, AADRI; and Executive Dean, Faculty of Science and Engineering; Bindura University of Science, Zimbabwe
- **Prof. Paul Kovacs**, Chair, Board of Directors of GADRI; and Executive Director, ICLR, Canada
- Activities of South Asia Alliance of Disaster Research Institutes (SAADRI) by **Prof. Mahua Mukherjee**, Head, Department of Architecture and Planning, Indian Institute of Technology (IIT), Roorkee, India
- Disaster Research with Climate Change by **Prof. Nobuhito Mori**, Kyoto University, Japan



The Celebratory workshop was closed by Prof. Hirokazu Tatano highlighted a few of the recommendations from the session as:

- Extend the deadline for member institutes to complete the questionnaire survey as only 18 out of 218 members have responded so far
- Work on improving data sharing and accessibility among member institutes as identified in the survey results
- Provide feedback on the evaluation of Sendai Framework's 4 priority actions analysis presented by Professor Tatano's team
- Explore establishing formal observer status with UN system and its agencies to strengthen international collaboration
- Discuss potential updates to the GADRI charter and committee structure for the next decade
- Prepare contributions for a science report for the upcoming meetings including the 2024 Pacific

UNBRS meeting and the 2027 Asia-Pacific Ministerial Conference on Disaster Discussion; and UNDRR Global Platform

- African Alliance for Disaster Research Institutes: Develop partnerships with GADRI members to strengthen disaster research capabilities in Africa
- While continuing global collaboration, focus on developing localized methods and solutions and technologies for disaster risk reduction
- Develop strategies to enhance youth participation and engagement in GADRI activities for the next decade
- Strengthen media relations and public communication strategies to better disseminate disaster research findings

Soon after the workshop, all participants were invited to the 10th Anniversary Celebration at the Mexican Restaurant in Folrt Collins hosted by the Colorado State University.



7th Global Summit of GADRI

Converging Disaster Research and Stakeholder-Engagement for Resilience

Center for Risk-Based Community Resilience Planning, Colorado State University, USA

21 to 23 July 2025



The 7th Global Summit of GADRI focused on “Converging Disaster Research and Stakeholder-Engagement for Resilience” emphasizing the importance of progress, developing effective policies and implementation of disaster risk reduction strategies in communities. The summit focused on disaster risk reduction, climate change adaptation and community resilience to disasters.

The Summit featured eleven distinguished keynote speakers; twenty-eight guest presenters from various disciplines in the two Panel discussion Sessions; twenty-five oral presentations, twenty-five poster presentations; and eight presentations under seed and needs Networking with Institutions session. In addition, there were six presenters under the GADRI Regional

Alliances session and five presenters for the GADRI Committees.

Keynote speakers highlighted the progress made in science and technology strategies to reduce disaster risk but noted the gaps in implementation into policies in order to reduce the increasing number of affected people and the rising costs of disasters. They stressed the need for improved data collection, technology use, integrated risk governance, increased funding for prevention, risk-informed development, scaling up early warning systems, whole-of-society engagement, and building back better to achieve resilient recovery by 2030. The summit aimed to foster collaboration across disciplines and geographical boundaries to enhance society's resilience to disasters.

The Opening Ceremony was commenced by Prof. John van de Lindt, Host and Co-Director of the Center for Risk-Based Community Resilience Planning, Colorado State University who greeted all participants to the 7th Global Summit of GADRI. He mentioned how the world was a slightly different place a decade ago and the urgent need for disaster risk resilience in the face of global challenges. He started by giving recognition of who the land belonged to and acknowledged with respect the land's deep-rooted history by stating that it is the traditional and ancestral homelands of the Arapaho, Cheyenne, and Ute nations and peoples.

He then introduced Prof. Marion Underwood, Provost and Executive Vice-President, Colorado State University who welcomed everyone to Colorado State University and highlighted the University's commitment to sustainability and disaster risk reduction and resilient research.

In his greetings, Prof. Tomoharu Hori, Director, Disaster Prevention Research Institute (DPRI), Kyoto University stressed that DPRI and Kyoto University's stance on the importance of international collaboration in addressing global hazards and the integration of disaster preparedness into daily life. His speech was followed by a video message greetings from Mr. Kamal Kishore, UN Special Representative of the Secretary-General for Disaster Risk Reduction, United Nations Office for Disaster Risk Reduction (UNDRR).

Prof. Paul Kovacs, Chair of the Board of Directors of GADRI reflected how the science community moved nearly 800 km to Kyoto after attending the Third World Conference of the UN in Sendai to establish GADRI in March 2015; Prof. Hirokazu Tatano, Secretary-General of GADRI delivered the current status of GADRI since its establishment; and Dr. Genta Nakano, Associate Professor, DPRI, Kyoto University delivered report from the pre-summit questionnaire survey.



Soon after the group photograph, the first plenary session on Convergence approaches in research and implementation was convened and chaired by Prof. John van de Lindt and Prof. Kaoru Takara, President, National Research Institute for Earth Science and Resilience (NIED). This session featured:

- Prof. Therese McAllister, Deputy Chief, Materials and Structural Systems Division, National Institute of Standards and Technology (NIST), USA who discussed about "Advancing Community and Regional Resilience: Addressing Infrastructure Impacts on Societal Recovery and Stability;
- Prof. John van de Lindt discussed about the Facets of Community Resilience Modeling: What Gaps Remain?; and
- Prof. Kit Miyamoto or Miyamoto International, USA covered the Global Earthquake Disaster Assessments and Reconstruction.

Soon after that, the group moved on the Panel Discussion Session I on Progress and challenges for the final years of implementation of the Sendai Framework in several or more countries. There were four group discussion sessions covering the four Priority Areas of the Sendai Framework Agenda.

- Sendai Framework Priority Area 1: Understanding Risk: Marginalized Voices in Risk Assessment and Response organized and

chaired by Dr. Roger Baars, Graduate School of Global Environmental Studies (GSGES), Kyoto University, Japan

- Sendai Framework Priority Area 2: Strengthening disaster risk governance to manage disaster risk: Evidence-based Policymaking in Disaster Risk Reduction organized and chaired by Prof. Yuichi Ono, IRIDeS, Tohoku University, Japan
- Sendai Framework Priority Area 3: Investing in disaster risk reduction for resilience: Exploring strategies for strengthening global DRR efforts through enhanced networking and collaboration organized and chaired by Prof. Hirokazu Tatano, GADRI; DPRI, Kyoto University, Japan and Co-Chaired by Prof. Katarina Holla, University of Zilina, Slovakia
- Sendai Framework Priority Area 4: Enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction: From "Everyday Counts" to Lasting Resilience organized and chaired by Prof. Kaushal Keraminiyage, University of Salford, UK and Co-Chaired by Prof. Paul Kovacs, GADRI; and ICLR, Canada

This was followed by sessions on poster and seeds and needs networking with institutions; and the oral presentations on advancing disaster risk reduction and resilience, the day was concluded with an enjoyable Opening Reception.





Enjoying lunch with the Keynote speakers



Team at Colorado State University who assisted with the 7th Global Summit of GADRI, July 2025



Second Plenary Session on Engagement, Partnerships, Communication, and Resulting Policy took place in the afternoon which was chaired by Dr. Yuki Matsuoka, Head, UNDRR Kobe Office, and Prof. Michinori Hatayama, DPRI, Kyoto University.

- Prof. Saini Yang, Director, International Center Catalyzing Resilience: Strengthening Global DRR Education & Action through Synergy, Prof. Saini Yang, Executive Director, International Center for Collaborative Research on Disaster Risk Reduction (ICCR-DRR), Beijing Normal University, China
- Participatory Convergence: Advancing Science and Reducing Risk Through Community Participation, Prof. Lori Peek, Director, Natural Hazards Center (NHC), Institute of Behavioral Science, University of Colorado Boulder, USA
- UNDRR/ISC Hazard Information Profiles update 2025, Prof. Virginia Murray, Head, Global Disaster Risk Reduction, UK Health Security Agency, United Kingdom
- Applied Academic Research to Prevent Wind Hazard from Becoming Disasters, Prof. Kishor Mehta, Emeritus P. W. Horn Professor, Department of Civil, Environmental and Construction Engineering, Texas Tech, USA

Plenary Session III

Underscoring the need for fundamental research, and focus on advances in disciplinary and transdisciplinary research for natural hazards, cascading hazards, the resulting disasters, and models to reduce adverse impacts

Chair: Prof. Mahua Mukherjee and Prof. Hirokazu Tatano

- Topic on Transdisciplinary Research for Natural Hazards was covered by Prof. Peter Sammonds, Department of Risk and Disaster Reduction (RDR), University College London, UK.

- Accelerating the implementation of the Sendai Framework for Disaster Risk Reduction – outcome of the 8th Session of the Global Platform for Disaster Risk Reduction, Dr. Yuki Matsuoka, Head, United Nations Office for Disaster Risk Reduction (UNDRR), Kobe Office, Japan
- Dance in Harmony with the Twister: One Step Back and Two Steps Forward toward Tornado Resilience, Prof. Grace Yan, Department of Civil, Architectural and Environmental Engineering, Missouri University of Science and Technology, USA
- Risk Reduction Beyond Borders: Science-Based Policy and Community Resilience in Mexico, Mr. Enrique Guevara, General Director, National Disaster Prevention Center (CENAPRED), Federal Government of Mexico

The second day closed with the Panel Discussion II which covered the three sub-themes of the 7th Global Summit of GADRI:

- Convergence approaches in research and implementation organized and chaired by Prof. Lisa Wang, Old Dominion University, Norfolk, Virginia, USA.
- Focus on Engagement, partnerships, communication and resulting policies: strengthening societal resilience for disasters organized and chaired by Prof. Kaushal Keraminiyage, University of Salford, UK; and Dr. Yuki Matsuoka, Head of the UNDRR Kobe Office who served as co-chair of the session.
- Underscoring the need for fundamental research and focuses on advances in disciplinary and transdisciplinary research organized and chaired by Prof. Elaina Sutley, University of Kansas, USA

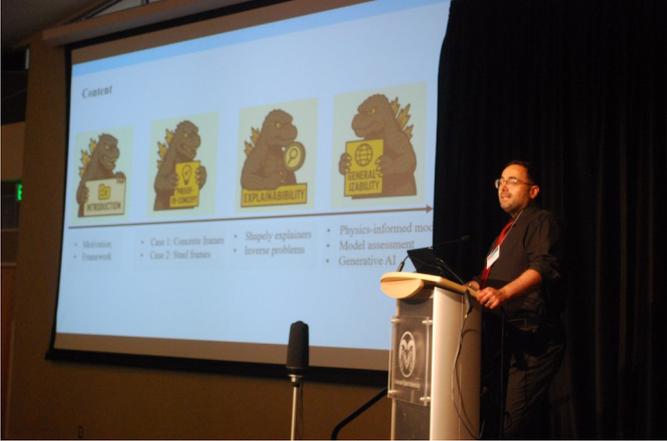


In addition to the poster and the networking sessions, there were six oral sessions under the theme of : Advancing Global Disaster risk Reduction and Resilience presented by 20 speakers.

The Summit was concluded with the Final Outcomes and Resolution document.

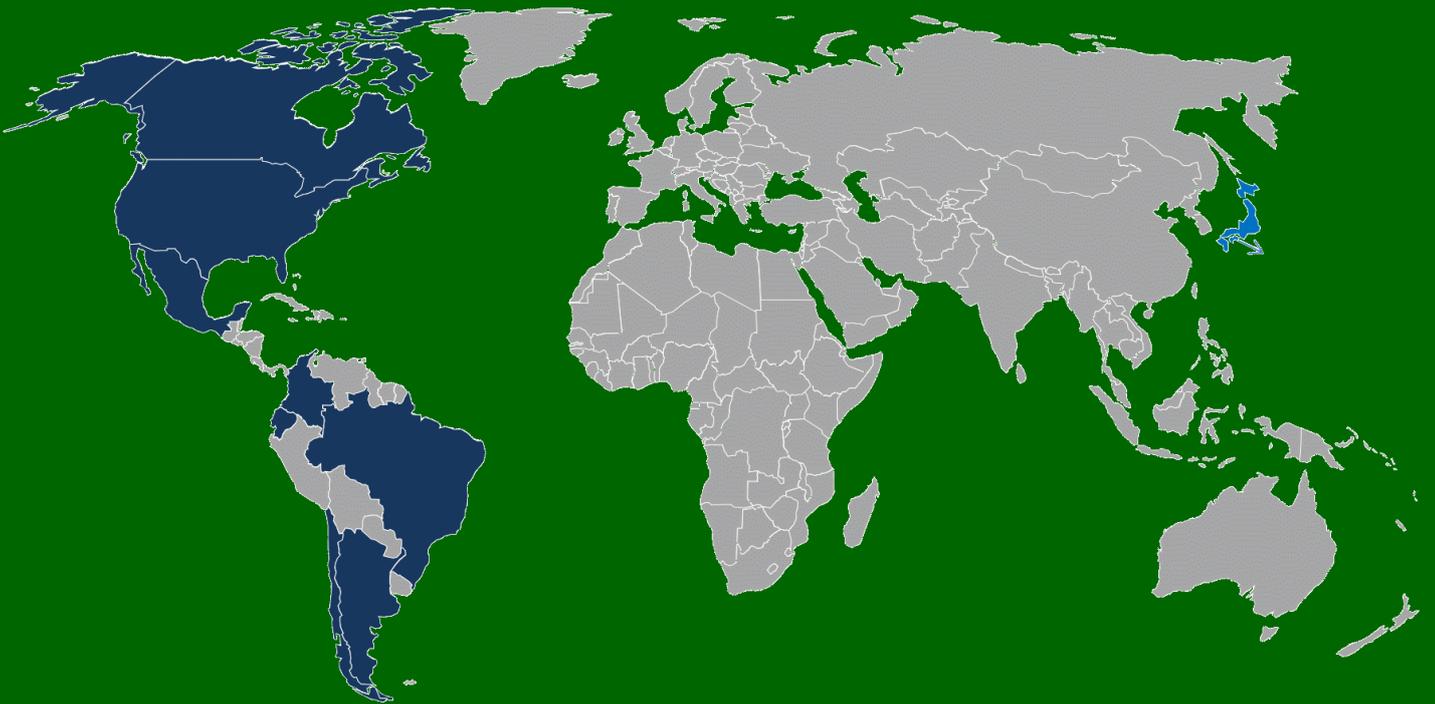
The Seventh Global Summit of GADRI was attended by nearly 90 participants from all around the world.



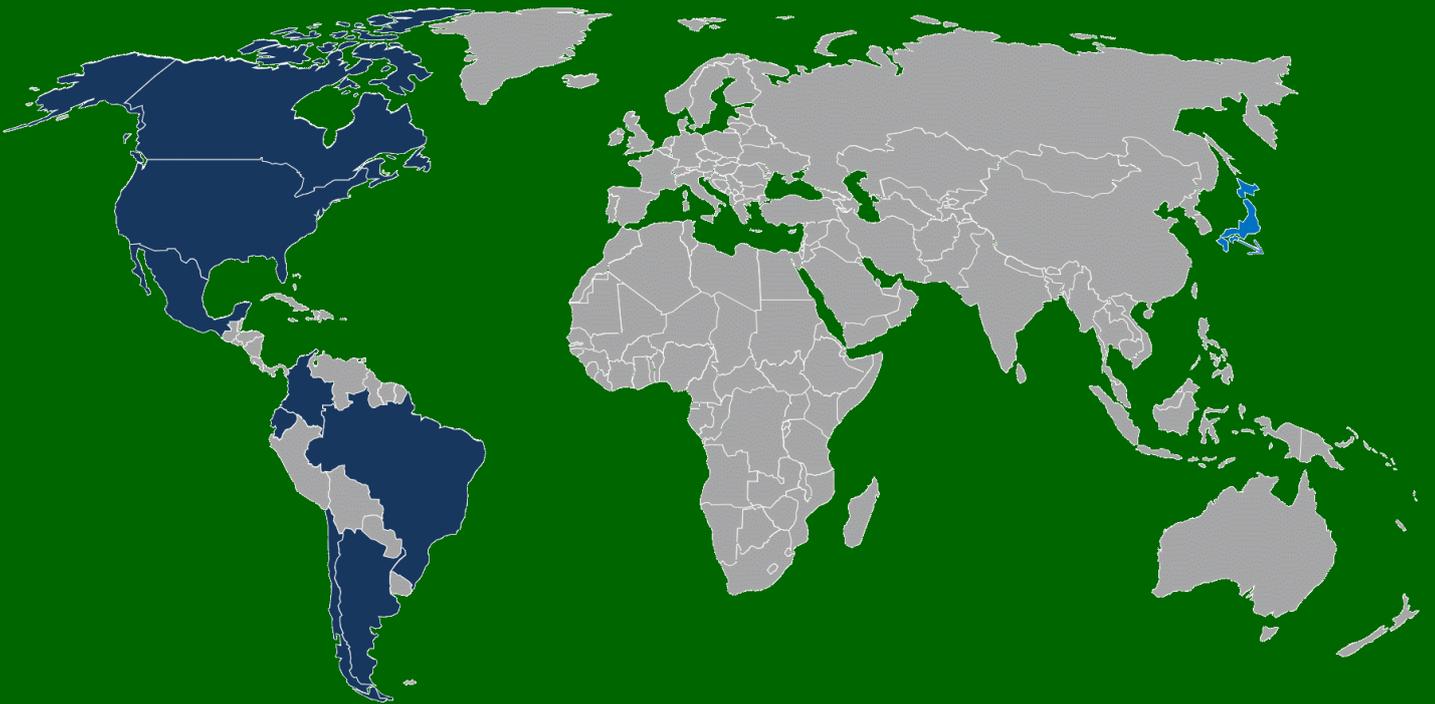


Keeping in touch with members

Americas



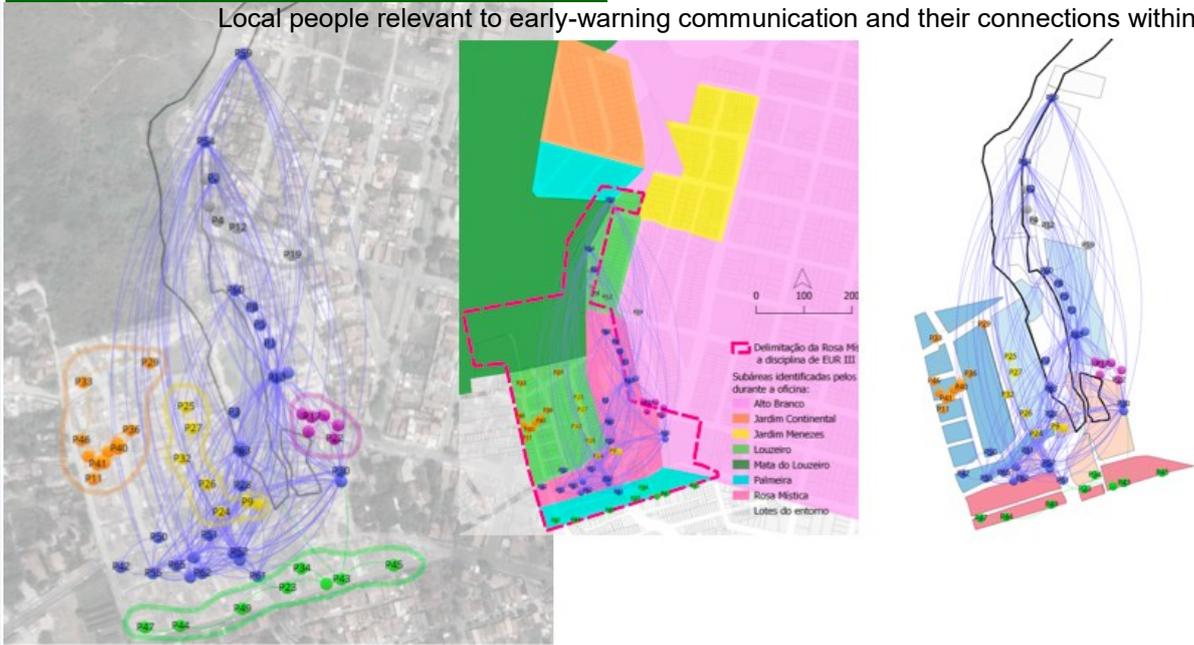
Americas



Americas—Members

Argentina	Environment and Natural Resources Research Program (PIRNA), Instituto de Geografía “Romualdo Ardissonne”, Facultad de Filosofía y Letras, Universidad de Buenos Aires
Brazil	Department of Civil Engineering, Centre for Technology and Natural Resources, Federal University of Campina Grande
Brazil	Instituto de Pesquisas Hidraulicas (IPH), Universidade Federal do Rio Grande do Sul (UFRGS)
Canada	The Institute for Catastrophic Loss Reduction (ICLR), Western University
Chile	Centro Nacional de Investigacion par la Gestion de Desastres Naturales (CIGIDEN)
Colombia	Department of Chemical Engineering, Universidad de los Andes
Colombia	National Unit for Disaster Risk Management in Colombia (NGRD) (Unidad Nacional para la Gestión del Riesgo de Desastres de Colombia-UNGRD)
Colombia	Seismological and Geophysical Observatory of the Southwest (Observatorio Sismológico y Geofísico del Suroccidente (OSSO)), Valle University (Universidad del Valle)
Ecuador	Pacific International Center for Disaster Risk Reduction (PIC-DRR), Escuela Superior Politecnica del Litoral
Mexico	Institute of Geography, National Autonomous University of Mexico (UNAM)
Mexico	Structures Laboratory, University of Michoacan
Mexico	Research Institute of Risk Management, University of Michoacan
USA	Center for Emergency Management and Homeland Security, Arizona State University (ASU)
USA	Pacific Earthquake Engineering Research Center (PEER), University of California, Berkeley
USA	Resilient Communities Research Institute (RCRI), College of Architecture and Environmental Design, California Polytechnic State University
USA	Natural Hazards Center (NHC), University of Colorado Boulder
USA	Center for Risk-Based Community Resilience Planning, Colorado State University
USA	Disaster Research Center, University of Delaware
USA	Wind and Hurricane Impact Research Laboratory (WHIRL), Florida Institute of Technology (FIT)
USA	LaHouse Research & Education Center, Louisiana State University Agricultural Center
USA	Program on Population Impact, Recovery and Resilience (PiR2), College of Global Public Health, New York University
USA	Nevada Seismological Laboratory, University of Nevada
USA	Global Resilience Institute, Northeastern University
USA	Coastal Resilience Center (CRC), University of North Carolina at Chapel Hill (UNC)
USA	Advanced Radar Research Center, University of Oklahoma
USA	Center for Infrastructure, Transportation, and the Environment (CITE), Rensselaer Polytechnic Institute (RPI)
USA	Department of Industrial and Systems Engineering, Rensselaer Polytechnic Institute (RPI)
USA	Southern California Earthquake Center (SCEC)
USA	Center for Risk and Economic Analysis of Terrorism Events (CREATE), University of Southern California
USA	Hazard Reduction and Recovery Center (HRRC), Texas A&M University (TAMU)
USA	Wind Hazard and Infrastructure Performance (WHIP) Center, Texas Tech University
USA	Geologic Hazards Science Center, U.S. Geological Survey
USA	Dept. of Business Information Technology, Virginia Tech
USA	Department of Environmental Studies, Resilience Institute, Western Washington University

Local people relevant to early-warning communication and their connections within the territory.



The Federal University of Campina Grande (UFCG) conducts studies, research, and intervention in environmental, technological and social disasters in a broad sense, spanning several other areas. This is partly motivated by the institution's location in the semi-arid region of Brazil, which is densely populated and socially and economically vulnerable to environmental hazards, such as droughts, desertification, land degradation, flash floods, and health risks, leading to social inequality. Our interests are in understanding local and regional needs and the social aspects of Disaster Risk Reduction (DRR).

Among such activities, we highlight in 2025 a research and development project on flash floods' driven disasters in urban vulnerable settlements, involving expertise and researchers from diverse areas, such as DRR, hydrology, water resources governance and management, urban planning and management, social sciences, and computer science.

It is a cooperative project between UFCG and the University of Lisbon.

A pilot area in the city of Campina Grande, State of Paraíba, Brazil, known as Rosa Mística, was chosen as a case study. The locality is affected by a series of socio-environmental risks, such as floods and inundations, house collapses, proliferation of insects and rodents, and landslides. It presents high vulnerability of the occupation and a low to medium degree of risk of extreme hydrological events, indicating that the events themselves are not the problem, but rather the social and environmental vulnerability. One of the project outcomes is a social-network analysis of the community and organizations aimed at improving risk-communication and early-warning strategies.

Social interactions inside the community can reveal the network dynamics necessary to ensure the development and dissemination of early-warning information. Therefore, the study hypothesizes that understanding network structure can be useful for understanding collective action (or lack thereof) in disaster response. It uses a social science method suitable for interpreting patterns of social interactions: Social Network Analysis (SNA). These interactions can be between a variety of actors, such as decision-makers, citizens, and associations, resulting in the interpretation of social structures.



Prof. Carlos de Oliveira Galvao

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SNA diagnosed the local capacity to respond to floods, revealing a complex and fragmented social structure. The results show that, despite the existence of influential actors, the overall network presents structural gaps, low density, and multiplexity, compromising information transmission, deliberation, and collective resilience. The study delves into the implications of these structural characteristics, examining how the interaction between different types of centrality and existing socio-spatial divisions creates significant barriers to coordinated action.

The results of the project, both the flood-forecasting and SNA, were input to the development of a smartphone application for risk communication. Pluvia is an offline-first, multimodal mobile application designed to assist communities vulnerable to urban flooding. This solution addresses the critical need for timely and reliable flood information in areas with limited connectivity and infrastructure. The app has a multimodal and multilingual assistant. This AI assistant provides users with actionable guidance and answers questions about nearby flood risks, even

when there's no internet connection. Pluvia's core features include a map-based interface to visualize flood-prone areas (generated by EPA SWMM), proactive notifications based on three-day weather and flood forecasts, and a secure system for managing emergency contacts and addresses. By processing all AI interactions on the device, Pluvia ensures user privacy and low latency, making it a powerful and accessible tool for disaster preparedness. Though initially developed as a proof of concept for Rosa Mística, the system is designed to be globally scalable and adaptable.

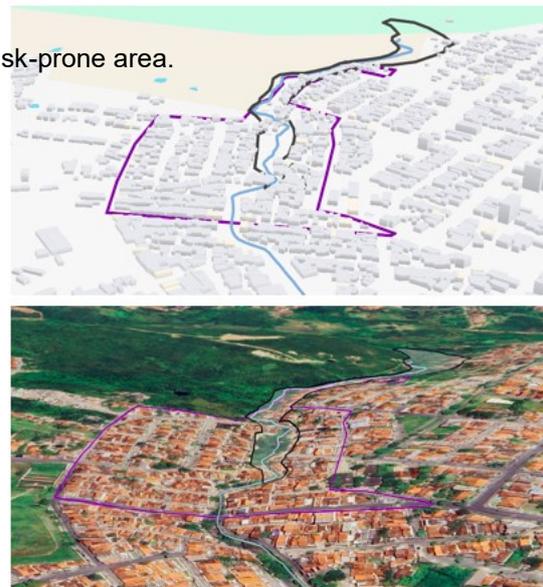
On Pluvia:

https://youtu.be/BwwKhci_zu4?si=hmjPFicI6dgDhRDM

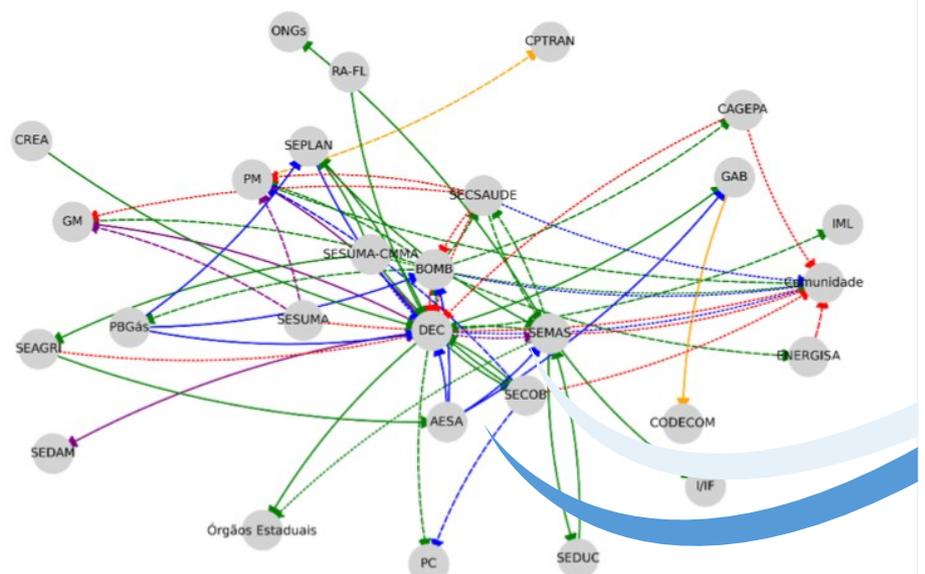
<https://github.com/Agents4Good/PluviaA>

<https://www.kaggle.com/competitions/google-gemma-3n-hackathon/writeups/pluvia-with-gemma-16211>

Rosa Mística community. Black contour indicates the risk-prone area.



Institutional network of the municipal civil defense system.





GPDEN participation in VII CONA 2025

As previously reported in the GADRI Annual Report 2024, record-breaking heavy rains occurred in Rio Grande do Sul (RS), the southernmost state of Brazil, from late April to May 2024. Statistics as of the end of 2025 indicate that 185 people were killed and 23 were missing. This disaster was one of the most serious in Brazil, and its scientific and social impacts continue into 2025.

A comprehensive paper on this disaster was published: Collischonn, W.; Fan, F.M.; Posantti, I.; Dornelles, F.; Paiva, R.; Medeiros, M.S.; Michel, G.P. Magalhães Filho, F.J.C.; Moraes, S.R.; Marcuzzo, F.F.N.; Michel, R.D.L.; Beskow, T.L.C.; Beskow, S.; Fernandes, E.H.L.; Santos, L.L.; Ruhoff, A.; Kobiyama, M.; Collares, G.L.; Buffon, F.; Duarte, E.; Lima, S.; Meirelles, F.S.C.; Piccilli, D.G.A. (2025) The exceptional hydrological disaster of April-May 2024 in southern Brazil.

Brazilian Journal of Water Resources, v.30, e1. <https://doi.org/10.1590/2318-0331.302520240119> This paper is a report of the results of collaborative research. Most

of the coauthors are researchers from Institute of Hydraulic Research (Instituto de Pesquisas Hidráulicas – IPH) of UFRGS which includes the Research Group on Natural Disasters (GPDEN).

One inventory paper on landslides occurrence in this disaster was published: Egas, H.M.; Stabile, R.A.; Andrade, M.R.M.; Michel, G.P.; Araújo, J.P.C.; Michel, R.D.L.; Mendes, T.S.G.; Nery, T.D.; Paula, D.S.; Reckziegel, E.W. (2025) Comprehensive inventory and initial assessment of landslides triggered by autumn 2024 rainfall in Rio Grande do Sul, Brazil. **Landslides**, v.22, p.579–589. <https://doi.org/10.1007/s10346-024-02410-w2024> Some members of GPDEN participated in this inventory.



Prof. Masato Kobiyama

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Based on various experiences of DRR related to this disaster, one book chapter was published in order to give several suggestions to DRR practitioners: Kobiyama, M.; Michel, R.D.L.; Flores, C.H.; Franck, A.G.; Zambrano, F.C. (2025) Sugestões às comunidades locais sobre a gestão de risco de desastres com base em experiências in situ durante a tragédia de 2024 no Rio Grande do Sul. In: Magnori Jr., L. et al (orgs.) **Do local ao global: Mudanças climáticas e gestão de risco de desastres**. São Paulo: Centro Paula Souza, p.23-50. https://www.agbbauru.org.br/publicacoes/DLAG2025/DLAG_1ed-2025.pdf

Though a lot of local and national news focused on the flood, it can be thought that the most dramatic natural phenomena were not floods but mass movements (landslides and debris flows) and flash floods. So, some members of the GPDEN presented one work intitled “Urgent actions in the Era of Mass Movements in Brazil” in V Brazilian Congress of Disaster Risk Reduction in October 2025.

Whenever a disaster occurs in Brazil, starting with the RS disaster in 2024, mass movements are considered the most serious problem. Therefore, knowledge on sediment-related disasters is so relevant that such disasters should be more discussed not only in RS but also over Brazil.

Considering these aspects, GPDEN offered a mini course “Disasters and the environment: geographical aspects” (2 hours) twice at an Agriculture Technical High School, a mini course “Mapping risk areas with emphasis on hydrological disasters (floods and mass movements)” (3 hours) for an undergraduate course in Geography, and a mini course “Geography applied to disaster risk reduction” (4 hours) during the V Brazilian Congress on Disaster Risk Reduction. Thus, GPDEN mini-courses are normally taught in Brazil, in Portuguese. This is usually the case, but GPDEN also gives mini-courses to people from other countries upon request.

Two members of GPDEN participated in the VII National Water Congress (VII CONA), during the period from November 3 to 7, 2025, in the city of Ica, Peru (<https://vii-cona-peru-2025.com/>). On that occasion, on November 3 and 4, they taught a course entitled “Sediment-related disaster reduction with an emphasis on “huaycos”” which included a theoretical class, a practical class on numerical modeling, and a field trip to visualize the areas affected by the phenomenon.

According to Wikipedia, a “*huayco*” or “*huaico*” (from the Quechua word *wayqu*, meaning “depth, valley”) is an Andean term for debris and mud flows, hyperconcentrated flows, and flash floods caused by torrential rains that occur in the high mountains, especially during the *El Niño* season. It seems that the “*huayco*” term can be the universal term which explain mass movements and flash floods which take place in mountain environment. So, GPDEN and Peruvian managers and researchers of water resources thought that this term “*huayco*” should become more widely used among researchers around the world.

Local news about the event can be found on the event's social media channels on Facebook and Instagram (<https://www.facebook.com/p/VII-CONA-202561572950500105/> | <https://www.instagram.com/viicona2025/>).





Centro de Investigación para la Gestión Integrada del Riesgo de Desastres (CIGIDEN), Chile

<https://www.cigiden.cl/>

CIGIDEN Research, Outreach and Engagement Activities in 2025



By harnessing the center's deep epistemic and methodological expertise alongside its significant experience in local interventions, CIGIDEN addressed critical societal challenges through interdisciplinary research projects that covered three main broad research areas in close collaboration with National Disaster Risk Management Agencies and key stakeholders.

Multi-Hazard Critical Infrastructure Assessments:

Integrating geophysical and climatic multi-hazard research into probabilistic assessments to evaluate and protect critical infrastructure systems, including ports, healthcare facilities, water supplies, and road networks.

Urban and Socio-Demographic Vulnerability:

Addressing complex aspects of urban and social vulnerability by incorporating socio-demographic attributes often overlooked by traditional meso-scale metrics—such as immigration, intersectionality, and specific cultural dynamics.

Comprehensive
Researching the active roles
engineering, and urban/territorial

Risk Mitigation:
that education,
planning play

in systematically reducing vulnerability, exposure, and ultimately, disaster risk.

The broader center's impacts were crucially nurtured with **strategic stakeholder collaborations**. CIGIDEN actively encouraged its research teams to step beyond university campuses and collaborate directly with the end-users and recipients of the center's research. By formalizing new institutional collaborations through official agreements and Memoranda of Understanding (MOUs), the center enhanced its territorial reach and real-world impact in a highly organic and strategic manner.



Dr. Rodrigo Cienfuegos
Director

E-mail: director@cigiden.cl

Applied Initiatives and Platforms

- **Disaster Risk Atlas:**

A national-scale, open-access digital platform that visualizes areas exposed to natural hazards alongside territorial planning instruments. By integrating geospatial data and public information, it supports evidence-based decision-making for risk-sensitive management.



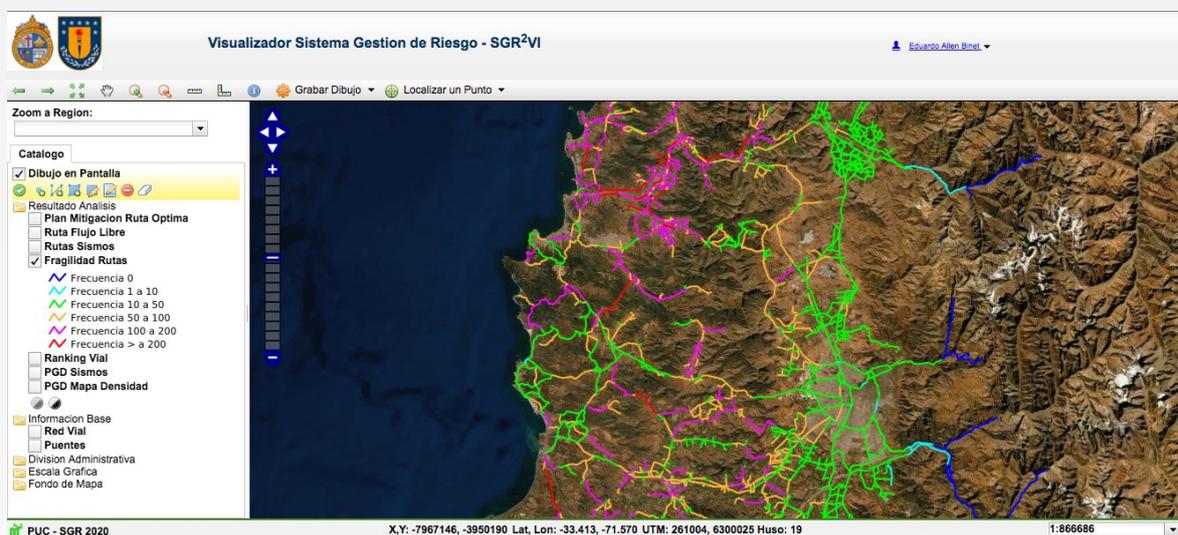
- **Dynamic Valparaíso Risk Platform**

Project with the Regional Government of Valparaíso to build a public-access risk platform. Using automated machine learning algorithms fed by satellite imagery, the tool continuously monitors formal and informal urban expansion to provide dynamic exposure models for decision-makers.



Dynamic Valparaíso Risk Platform presentation in Quilpué

- **Ministerial Integrations:** Successfully secured external public funds to embed methodological tools directly into government operations. Key platforms include:
 - **ASISTE** (Ministry of Housing and Urban Planning - MINVU)
 - **SIGER-RV** (Ministry of Public Works - MOP)
 - **SimPlaNeR** (Ministry of Health - MINSAL)



SiGeR-RV: Risk management system for road networks

Global Academic & Institutional Reach

The center strengthened its position on the global stage through vital academic exchanges, joint research, and international working groups:

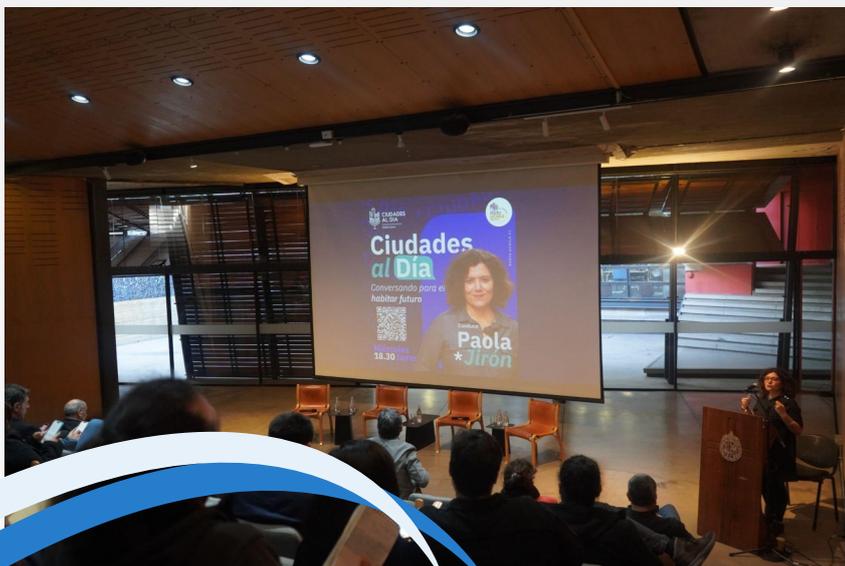
- **Global Tsunami Leadership:** Secured a major GeoEnquire grant with INGV (Italy) and NGI (Norway) for 150,000+ hours of GPU time for advanced tsunami modeling. CIGIDEN also remains one of only two Latin American partners in the Global Tsunami Model (GTM).
- **Bilateral Knowledge Exchange:** Hosted a delegation from IDIGER (Colombia) in the context of the “Strengthening Risk Management

Governance based on the experiences of Chile and the city of Bogotá” project.

- **Hosting i-Rec 2025:** Successfully bid to host the 11th international i-Rec (Information and Research for Reconstruction) conference in Santiago in May 2025—bringing this prestigious event to Latin America for the first time.
- In collaboration with the CEDEUS, the 3rd edition of the International Conference on Resilient Cities was held over three days across three cities. For this edition, more than 220 abstracts were received, notably with approximately one-quarter coming from practitioners outside of academia.



Colombian delegation visits vulnerable communities in Chile i-Rec Conference Keynote, Mayor of Viña del Mar



3rd edition of the International Conference on Resilient Cities, in Santiago.



Institute of Geography, National Autonomous University of Mexico (UNAM), Mexico

<https://www.geografia.unam.mx/geoigg/>



The Institute of Geography of the National Autonomous University of Mexico has a long-standing trajectory in disaster risk research grounded in territorial analysis and the social construction of vulnerability. A prominent example is its sustained work on landslide risk in mountainous and urbanising regions of Mexico, including detailed case studies in Teziutlán (Puebla), Tenango de Doria (Hidalgo), and Guadalajara (Jalisco). These studies combine geomorphological analysis with social and institutional investigation, demonstrating how land-use change, informal urban expansion, and governance failures interact with physical processes to produce recurrent disaster risk.

In coastal and low-lying contexts, the Institute has contributed applied research on flood risk and coastal vulnerability, particularly in southern Mexico and the Gulf region. Case-based analyses in areas such as Tola (Nicaragua, through comparative Latin American research) and Poza Rica (Veracruz) have examined how hydrological change, infrastructure deficits, and socio-economic marginalisation shape exposure and recovery capacity. These studies have informed locally grounded disaster risk reduction strategies and have supported community-based planning and municipal risk management initiatives.

The Institute has also played a key role in advancing forensic approaches to disaster investigation. By applying frameworks such as FORIN (Forensic Investigations of Disasters), researchers have reconstructed disaster trajectories to identify root

causes, institutional responsibilities, and missed opportunities for prevention. This approach has been applied to landslides, floods, and cascading urban disasters, contributing to a deeper understanding of how disasters emerge from long-term development pathways rather than isolated extreme events.

The Institute of Geography has also advanced disaster risk awareness and public engagement through its editorial and cultural activities. On 22 September 2025, the Institute hosted the presentation of *1985: Donde la ciudad sueña*, a novel by Irasema Alcántara-Ayala that reflects on the 1985 Mexico City earthquake through themes of urban memory, risk, and lived experience. The event formed part of the Institute's wider efforts to promote historically grounded and socially informed understandings of disaster risk, linking geographical scholarship with collective memory and public reflection.

<https://publicaciones.geografia.unam.mx/index.php/ig/catalog/book/256>



Prof. Irasema Alcántara-Ayala

E-mail: ialcantara@geografia.unam.mx

This editorial commitment was further reinforced with the publication of *Erebus and the Moving Mountains* on 31 October 2025, as part of the Institute's formal publishing programme. Authored by Irasema Alcántara Ayala, the volume combines narrative and scientific content to address disaster prevention and the communication of geographical knowledge and includes a specialised geomorphological glossary. The book exemplifies the Institute's engagement with innovative formats that bridge academic research and wider public understanding, extending the reach of disaster risk scholarship to international and non-specialist audiences. [Erebus and the Moving Mountains | Instituto de Geografía](#)

At the policy interface, the Institute of Geography has actively engaged with governmental and inter-institutional actors to strengthen risk-informed decision-making. A notable example is its collaboration with authorities in Mexico City, where Institute researchers have provided spatial analysis and technical input on urban risk, subsidence, and climate-related hazards. These contributions have supported efforts to integrate scientific evidence into urban planning, environmental management, and disaster risk governance at the metropolitan scale.

Internationally, the Institute has maintained a strong presence in global disaster risk reduction processes. Its academic staff have contributed to international scientific bodies and initiatives linked to the United Nations system, including work related to the

International Consortium on Landslides, global early warning discussions, and climate-risk assessments. Through these engagements, the Institute has helped position geographical and territorial perspectives as central to global debates on disaster risk, vulnerability, and resilience.

Students from the Geography programmes at UNAM, supported by academics from the Institute of Geography, have also contributed to disaster risk reduction through innovative educational initiatives. In 2025, they participated in a foresight-based exercise linked to the UNDRR Global Platform for Disaster Risk Reduction, developing future earthquake risk scenarios for Mexico City and communicating their proposals through digital media, thereby reinforcing the Institute's commitment to youth engagement and forward-looking risk governance.

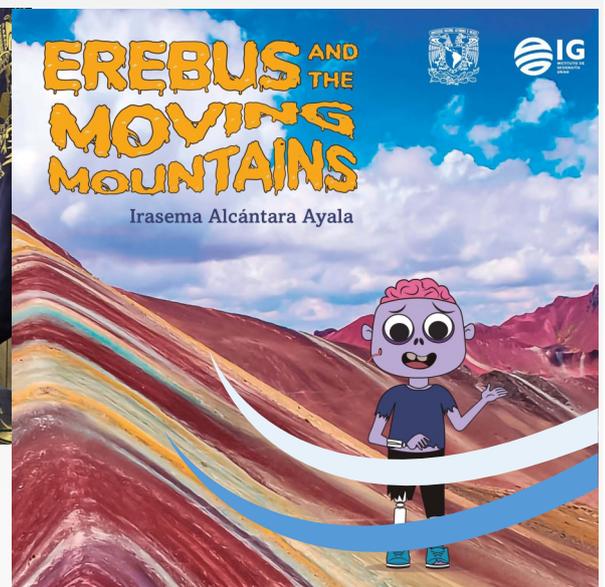
- The Institute has prioritised education, communication, and capacity-building as core components of its disaster risk agenda. This includes supervising graduate research on disaster risk, developing innovative educational tools for youth engagement, and actively participating in public outreach through media, exhibitions, and academic forums. By translating complex risk concepts into accessible formats while maintaining analytical rigour, the Institute of Geography reinforces its role as a national and international reference point for disaster risk research, education, and policy engagement.



Key Publications

Articles

- Alcántara-Ayala, I. (2025) Landslides in a Changing World, *Landslides Journal*, <https://doi.org/10.1007/s10346-024-02451-1>.
- Velásquez-Espinoza, G., Garnica-Peña, R. J., & Alcántara-Ayala, I. (2025). Understanding children's exposure to landslides in Nicaragua. *AUC Geographica*, e23361980. <https://doi.org/10.14712/23361980.2025.8>
- Velásquez-Espinoza, G., & Alcántara-Ayala, I. (2025) Flood Risk Perception and Preparedness in Nicaraguan Educational Contexts: A Study of Student Perspectives, <https://doi.org/10.1016/j.ijdr.2025.105375> (Web of Science)
- Alcántara-Ayala, I. (2025) Mountains of Hope: Contributing to the Sustainable Development Goals through Integrated Landslide Disaster Risk Management, *Journal of Mountain Science*, <https://doi.org/10.1007/s11629-025-9536-0>
- Alcántara-Ayala, I. (2025). Cascading hazards and compound disasters. *npj Natural Hazards*, 2 (1), 54. <https://doi.org/10.1038/s44304-025-00111-5>
- Velásquez-Espinoza, G., & Alcántara-Ayala, I. (2025) Youth and flood risk in rural Nicaragua: insights for risk communication and DRR policy in the Global South, *International Journal of Disaster Risk Reduction* 105658. <https://doi.org/10.1016/j.ijdr.2025.105658>



Books published

- Wisner, B., Alcántara-Ayala, I., Gaillard, J.C., Kelman, I., Victor Marchezini (2025), Understanding and Addressing Disaster Risk Who Speaks? Who Suffers? Routledge, New York, USA, ISBN: 978-1-032-27444-7

Books Edited

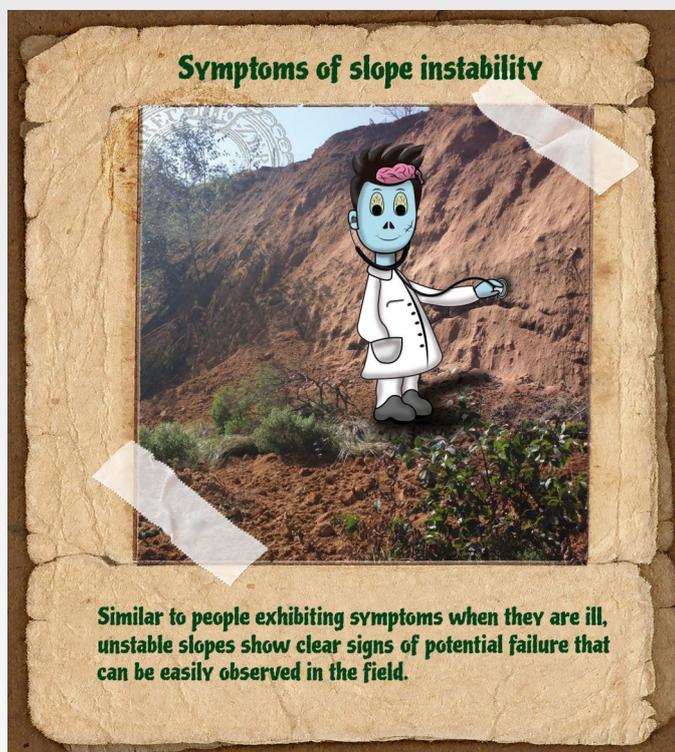
- Abolmasov, B. Alcántara-Ayala, I., Arbanas, Ž., Huntley, D., Konagai, K., Mikoš, M., Sassa, K., Sassa, S., Tiwari, B. (Editors) (2025) Progress in Landslide Research and Technology, Volume 3 Issue 2, 2024, Springer Cham, ISBN: 978-3-031-72735-1, 559 pp.
- Abolmasov, B. Alcántara-Ayala, I., Arbanas, Ž., Konagai, K., Mikoš, M., Sassa, K., Sassa, S., Tiwari, B., Tofani, V. (Editors) (2025), Progress in Landslide Research and Technology, Volume 4 Issue 1, 2025, Springer Cham, ISBN: 978-3-031-89838-9

Book Chapters

- Alcántara-Ayala, I., Shaw, R., & Nakano, G. (2025). Forging Alliances: Collaborative Advocacy Efforts in Advancing Science and Technology for Disaster Risk Reduction. n: Tatano, H., Kovacs, P., James, W. (eds)

Proceedings of the 6th Global Summit of the Global Alliance of Disaster Research Institutes. GSRIDRR 2023. Disaster and Risk Research: GADRI Book Series. Springer, Singapore. https://doi.org/10.1007/978-981-96-6609-6_13 (pp. 179-188). Singapore: Springer Nature Singapore. ISBN 9789819666096

- Alcántara-Ayala, I. (2025). Interweaving Systems of Knowledge: Leveraging Transdisciplinary Research to Strengthen Landslide Disaster Risk Reduction. In: Abolmasov, B., et al. Progress in Landslide Research and Technology, Volume 4 Issue 1, 2025. Progress in Landslide Research and Technology. Springer, Cham. 53-71pp. ISBN: 978-3-031-89838-9, https://doi.org/10.1007/978-3-031-89836-5_3
- Sánchez-Rojo, M., Garnica-Peña, R.J., Alcántara-Ayala, I. (2025). From Sky to Safety: Unmanned Aerial Vehicles and Geomorphological Insights to Local-Scale Household Landslide Exposure. In: Abolmasov, B., et al. Progress in Landslide Research and Technology, Volume 4 Issue 1, 2025. Progress in Landslide Research and Technology. Springer, Cham. 41-52 pp. ISBN: 978-3-031-89838-9, https://doi.org/10.1007/978-3-031-89836-5_2





Natural Hazards Center University of Colorado, Boulder, USA

<https://hazards.colorado.edu/>
<https://converge.colorado.edu/>



The Natural Hazards Center team hosted the 50th Annual Natural Hazards Research and Applications Workshop in Boulder, Colorado in 2025!

The Natural Hazards Center at the University of Colorado Boulder serves as the U.S. National Science Foundation-designated information clearinghouse for the societal dimensions of hazards and disasters. The mission of the Center is to:

- Translate and share hazards and disaster research and information;
- Build connections between researchers, nonprofit and private sector professionals, the media, policymakers, and local, state, and federal officials;
- Advance social science and interdisciplinary knowledge, with a special emphasis on the most socially vulnerable populations and places; and
- Train and mentor a diverse next generation of hazards and disaster professionals.

The team at the Natural Hazards Center led several initiatives during the reporting period including:

- Maintained a global map and list of university-based hazards and disaster research centers and published the data associated with the map and list. See: <https://hazards.colorado.edu/resources/>

research-centers

- Hosted the 50th annual Natural Hazards Research and Applications Workshop, which involved more than 700 researchers, local/state/federal practitioners, policymakers, private and non-profit sector representatives, journalists, and students. The theme of the 2025 Workshop was “The Next 50 Years: Charting a Course for the Hazards and Disaster Field.”
- <https://hazards.colorado.edu/workshop/2025>
- Co-facilitated the annual Researchers Meeting, which involved more than 300 hazards and disaster researchers from many different disciplines and organizations.
- <https://hazards.colorado.edu/workshop/2025/researchers-meeting>



Prof. Lori Peek

Director; and
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- Co-facilitated the annual Practitioners Meeting, which involved more than 50 hazards and disaster practitioners from across the U.S. and around the world. <https://hazards.colorado.edu/workshop/2025/practitioners-meeting/overview>
- Hosted the monthly Making Mitigation Work webinar series in early 2025 and maintained a website with past webinar recordings. <https://hazards.colorado.edu/training/webinars/making-mitigation-work>
- Published the *Research Counts* series <https://hazards.colorado.edu/news/research-counts>, including a new special collection focused on Equity and Inclusion in Disasters: <https://hazards.colorado.edu/news/research-counts/special-collection/equity-and-inclusion>.
- Published *Disaster Research—News You Can Use*. <https://hazards.colorado.edu/disaster-research/current>
- Hosted the Disaster Grads listserve for undergraduate and graduate students in the hazards and disaster field. <https://hazards.colorado.edu/signup>

During this reporting period, the CONVERGE facility completed the following activities:

- Continued to add to the CONVERGE Training Modules Assignment Bank, which now also includes an introductory webinar as well as undergraduate and graduate level assignments. <https://converge.colorado.edu/resources/training-modules/assignment-bank/>
- Released additional Annotated Bibliographies through CONVERGE. <https://converge.colorado.edu/resources/training-modules/annotated-bibliographies/>
- Published additional Extreme Events Research Check Sheets <https://converge.colorado.edu/resources/check-sheets/>.
- Shared a series of recorded Webinars <https://converge.colorado.edu/category/webinars/>, Virtual Forums <https://converge.colorado.edu/category/virtual-forums/>, and Social Science Fridays sessions <https://converge.colorado.edu/category/social-science-fridays/> through CONVERGE.
- Funded researchers through the CONVERGE Data Ambassadors program <https://converge.colorado.edu/data/data-ambassadors/>.

Researchers affiliated with the Natural Hazards Center and the CONVERGE facility produced the following publications in 2025:

- Ali Chisty, Musabber. 2025. "Before Moments Become Memories: Virtual Reconnaissance of the 2025 Southern California Wildfires." *International Journal of Disaster Risk Reduction*. <https://doi.org/10.1016/j.ijdr.2025.105769>
- Campbell, Nnenia, Sue Ann Sarpy, Janise Rodgers, Arrietta Chakos, and Heidi Stenner. 2025. "Characteristics of Effective California Earthquake Scenarios." *Earthquake Spectra* 41(3):1891-1909. <https://doi.org/10.1177/87552930241312707>
- Ly, Anh M., Michael R. Cope, Scott R. Sanders, and Carol Ward. 2025. "Can Community Resilience Be Achieved? An Investigation of Subjective Household Resilience, Place Meanings, and Individual Perceived Preparedness to Respond to Environmental Threats." *Society & Natural Resources*, 1–20. <https://doi.org/10.1080/08941920.2025.2562408>
- MacPherson-Krutsky, Carson, Brittany D. Brand, Michael K. Lindell. 2025. "Do Engagement Best Practices Motivate Preparedness Intentions? Data from Earthquake Workshops for Spanish Speakers." *Risk Analysis*. <https://doi.org/10.1111/risa.17712>
- MacPherson-Krutsky Carson, Mary Angelica Painter, and Melissa Villarreal. 2026. "Inclusive Emergency Alerts: Exploring Whether Agencies Are Ready, Willing, and Able." *Natural Hazards Review* 27(1). <https://doi.org/10.1061/NHREFO.NHENG-2400>
- Mark, Brigid. 2025. "Following Indigenous Leadership': Addressing Power Inequalities Between White and Indigenous Activists in the Movement to Stop Line 3." *Social Problems*. <https://doi.org/10.1093/socpro/spaf021>.
- Mark, Brigid and Lori Peek. 2025. "2024 Social Science Extreme Events Research (SSEER) Census," in *Social Science Extreme Events Research (SSEER) Network Data, Survey Instrument, and Annual Census*. DesignSafe-CI. <https://doi.org/10.17603/ds2-sfp0-ym69>
- Mordy, Meghan, Rachel Adams, Lori Peek, Jennifer Tobin, Tracy N. Thomas, and Robin Soler. 2025. "Advancing Workforce Development and Evidence-Based Practice in U.S. Territories: An Evaluation of the Public Health Disaster Research Award Program." *Journal of Public Health Management and Practice*. <https://doi.org/10.1097/phh.0000000000002156>

- Painter, Mary Angelica, Anaís Delilah Roque, Enid Quintana, Sameer H. Shah, Fernando Cuevas, and Fernando Tormos-Aponte. 2025. "Mitigating Compounding Hazard Impacts on Public Health Through a Community Co-Created Toolkit on Food-Energy-Water (FEW) Insecurity." *Disaster Prevention and Management*. <https://doi.org/10.1108/DPM-06-2024-0163>
- Painter, Mary Angelica, Melissa Villarreal, and Lori Peek. 2025. "State Hazard Mitigation Plans and Social Vulnerability." *Journal of Homeland Security and Emergency Management*. <https://doi.org/10.1515/jhsem-2024-0023>
- Peek, Lori, Alice Fothergill, Zoe Lefkowitz, and Melissa Villarreal. 2025. "Children's Knowledge and Altruistic Behaviors in COVID-19: Disaster Literacy Through Lived Experience." *Journal of Hazard Literacy*. <https://doi.org/10.63737/jhl.25.0028>
- Rodgers, Janise, Arrietta Chakos, Nnenia Campbell, Heidi Stenner, and Sue Ann Sarpy. 2025. "Effectiveness of California Earthquake Scenarios in Motivating Mitigation." *Earthquake Spectra* 41(3): 1863-1890. <https://doi.org/10.1177/87552930241312712>
- Roque, Anaís Delilah, Mary Angelica Painter, Wendy Prudencio, Sameer H. Shah, Enid Quintana Torres, Fernando Tormos-Aponte, Kenneth de León Colón, and Fernando Cuevas Quintana. 2025. "Navigating Cascading Food-Energy-Water Insecurities: A Case of Community Leadership in Puerto Rico." *Environmental Science and Policy*. <https://doi.org/10.1016/j.envsci.2025.104188>
- Roque, Anaís Delilah, Sameer H. Shah, Mary Angelica Painter, Fernando Tormos-Aponte, Fernando Cuevas Quintana, Enid Quintana Torres, Wendy Prudencio, Kenneth de León Colón, Génesis Alvelo Colón, and Elizabeth Navarro. 2025. "Adapting and Preparing for Disasters: Participatory Mapping for Food, Energy, and Water Security in Puerto Rico." *Environmental Justice*. <https://www.liebertpub.com/doi/10.1177/1939407125136551>
- Stoler, Justin, Mary Angelica Painter, Ethan Sharygin, and Sameer H. Shah. 2025. "The Rise of Hazard Gentrification." *International Journal of Disaster Risk Reduction*. <https://doi.org/10.1016/j.ijdrr.2025.105618>
- Villarreal, Melissa, Carson MacPherson-Krutzky, and Mary Angelica Painter. 2025. "Barriers and Best Practices for Inclusive Emergency Alerts and Warnings." *International Journal of Disaster Risk Reduction*. <https://doi.org/10.1016/j.ijdrr.2025.105581>

Major active grants and contracts at the Natural Hazards Center include:

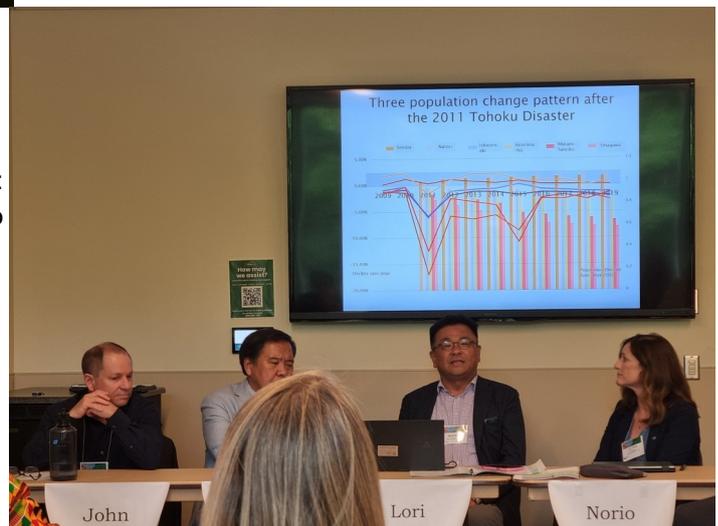
- 2025-31 Peek, Lori, Principal Investigator, "A Clearinghouse for Natural Hazards Research and Applications." Funded by the National Science Foundation, Award #2536173, with supplemental funding from the National Institutes of Health (NIH), National Oceanic and Atmospheric Administration Weather Program Office (NOAA WPO), and U.S. Geological Survey (USGS). (\$1,838,806)
- 2025-30 Peek, Lori, Principal Investigator, "An Assessment of the State of Wildfire Research and Its Applications." Funded by the U.S. Forest Service, Award #25-CS-11221636-101. (\$350,000)
- 2025-27 Peek, Lori, Principal Investigator, "Assessment and Improvement of Silver Jackets and Emergency Management Continuous Improvement Programs." Funded by the U.S. Army Corps of Engineers, Award #W912HQ25PA008. (\$199,999)
- 2025-27 Peek, Lori, Principal Investigator, "Enhancing the Integration of Drought." Funded by the National Oceanic and Atmospheric Administration, National Integrated Drought Information System, Award #1305M325P0248. (\$319,999)
- 2025-26 Peek, Lori, Principal Investigator, "Developing Trainings, Cultivating a Community of Practice, and Administering Quick Response Research Following a Future Oil Spill or Hazardous Material Incident." Funded by the Gulf Research Program, National Academy of Sciences, Award #SCON-10001452. (\$563,393)
- 2024-26 Peek, Lori, Principal Investigator, "Risk Communication Practitioner Trainings." Funded by the U.S. Army Corps of Engineers. (\$150,000)
- 2025-26 Peek, Lori, Principal Investigator, "The Human Dimensions of Sheltering." Funded by the Applied Technology Council, Award #1378-P5. (\$150,000)

- 2024-25 Peek, Lori, Principal Investigator, “National Science Foundation Non-Academic Research Internships for Graduate Students (NSF-INTERN): Brigid Mark.” Funded by the National Science Foundation, Supplement to Award #1635583. **(\$44,740)**
- 2023-26 Peek, Lori, Principal Investigator, “Research Counts: Strengthening Diversity to Reduce Disproportionate Disaster Harm.” Funded by the Margaret A. Cargill Philanthropies. **(\$800,000)**
- 2018-26 Peek, Lori, Principal Investigator, “CONVERGE: Coordinated Social Science, Engineering, and Interdisciplinary Extreme Events Reconnaissance Research.” Funded by the National Science Foundation, Award #1841338, with supplemental funding from the Centers for Disease Control and Prevention (CDC) and U.S. Geological Survey (USGS). **(\$4,968,314)**
- 2017-26 Peek, Lori, Principal Investigator, “A Clearinghouse on Natural Hazards Applications.” Funded by the National Science Foundation, Award #1635593, with supplemental funding from the Centers for Disease Control and Prevention (CDC), Federal Emergency Management Agency (FEMA), National Institutes of Health (NIH), National Oceanic and Atmospheric Administration-National Integrated Drought Information System (NOAA-NIDIS), National Oceanic and Atmospheric Administration-National Severe Storms Laboratory and Weather Program Office (NOAA-NSSL and WPO), U.S. Army Corps of Engineers (USACE), U.S. Department of Health and Human Services (HHS), and U.S. Geological Survey (USGS). **(\$9,357,625)**
- 2025 Peek, Lori, Principal Investigator, “Workshop Synthesis Report.” Funded by the National Oceanic and Atmospheric Administration. (\$24,900)
- 2024-25 Peek, Lori, Principal Investigator, “Making Research Count: Training and Mentoring Programs to Cultivate Wildfire Communities of Practice.” Funded by the U.S. Forest Service, Award #24-CS-11221636-138. (\$100,607)
- 2024-25 Peek, Lori, Principal Investigator, “The National Flood Insurance Program: Retrospective and Prospective.” Funded by the Association of State Floodplain Managers and the Federal Emergency Management Agency. (\$33,525)



Prof. Lori Peek moderating one of the oral presentation sessions on Advancing Global Disaster Risk Reduction and Resilience sessions during the 7th Global Summit of GADRI held at the Colorado State University Fort Collins, USA from 21 to 23 July 2025

Prof. Lori Peek was one of the panelists at the panel discussion session on Sendai Framework Priority Area 2 on Investing in Disaster Risk Reduction for Resilience: at the 7th Global Summit of GADRI held at the Colorado State University Fort Collins, USA from 21 to 23 July 2025





Center for Risk-Based Community Resilience Planning Colorado State University, USA

<http://resilience.colostate.edu>



Prof. Marion Underwood, Provost, Colorado State University Fort Collins welcomed participants at the 7th Global Summit of GADRI



(L): Prof. John van de Lindt, Prof. Paul Kovacs, Prof. Marion Underwood, Prof. Hirokazu Tatano and Prof. Tomoharu Hori, Director, DPRI, Kyoto University, Japan

In 2025, the Center for Risk-Based Community Resilience Planning at Colorado State University sustained its commitment to advancing resilience science and practice through a no-cost extension. This additional time enabled the Center to build upon the successes of the previous year by further refining

innovative tools, deepening collaborations with global partners, and enhancing community-driven approaches. The extension ensured continuity and allowed the Center to complete critical initiatives, reinforcing its leadership role in shaping resilient communities worldwide.

7th Annual GADRI Summit – Hosted by Colorado State University in July 2025

In July 2025, the Center for Risk-Based Community Resilience Planning at Colorado State University successfully hosted the 7th Annual Global Alliance of Disaster Research Institutes (GADRI) Summit from July 21 to 23. The event brought together over 90 participants from around the world, including researchers, policymakers, practitioners, and community resilience leaders, fostering robust international collaboration and interdisciplinary dialogue. Funding support from the CSU Office of the Vice President for Research and the Disaster Prevention Research Institute at Kyoto University helped ensure a rich and diverse program of activities.

Under the theme “**Converging Disaster Research and Stakeholder Engagement for Resilience**,” the Summit advanced discussions on integrating research, policy, and practice to support more resilient communities globally. The program featured plenary presentations,

panel discussions, oral and poster sessions, and networking opportunities designed to build connections across institutions and disciplines. A special emphasis was placed on equity and inclusion in disaster research, highlighted through dedicated sessions and keynote addresses that explored how disaster science can better serve diverse communities.



Prof. John W. van de Lindt

Co-Director

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Participants engaged deeply with core topics framed around three subthemes:

1. **Convergence approaches** in research and implementation that bridge methodological and disciplinary divides;
2. **Stakeholder engagement and policy**, underscoring how research translates into actionable strategies for communities; and
3. **Foundational advances** in disciplinary and transdisciplinary research on natural hazards and cascading disasters

With a mix of thematic panels, poster presentations, and networking sessions, the Summit highlighted emerging practices and research priorities that

contribute to the Sendai Framework's disaster risk reduction goals. Participants also discussed ongoing challenges and opportunities for strengthening global disaster research networks and fostering collaborative action across regions and sectors. The Summit concluded with the adoption of a set of Final Outcomes and Resolutions reaffirming the commitment of GADRI members to deepening the connection between science, policy, and community engagement in resilience efforts

Colorado State University's leadership in hosting the 7th GADRI Summit demonstrated the Center's continued commitment to advancing global resilience science and building strong, inclusive research partnerships that address pressing disaster challenges now and into the future.



Team Secretariat of the 7th Global Summit at Colorado State University

(L): Mohamad Habibniaykoochesfahani; Hirokazu Tatano; Prashanna Mishra, and Connie Hale



Building on the momentum of the 7th Annual GADRI Summit, the Center for Risk-Based Community Resilience Planning continues to advance its flagship initiative, **Project IN-CORE**. Insights, collaborations, and discussions from the Summit have directly informed Project IN-CORE's work, strengthening its focus on international research partnerships, stakeholder engagement, and equity-driven approaches to resilience planning.

In 2025, Project IN-CORE expanded its efforts to integrate cutting-edge research, data-driven tools, and community-centered strategies, ensuring that resilience planning is both scientifically rigorous and responsive to local needs. Activities included the refinement of advanced risk-assessment tools, collaborative implementation of resilience strategies with municipal

and regional partners, and the expansion of educational programs to build capacity in disaster preparedness, response, and recovery.

By linking global expertise from the GADRI network with actionable, community-level solutions, Project IN-CORE exemplifies the Center's commitment to **turning research into tangible impact**. Through these ongoing efforts, the Center continues to empower communities, foster international collaboration, and advance the field of disaster resilience worldwide.

In summer 2026 Project IN-CORE will transition to ResiCore which is working to operationalize IN-CORE for communities to plan and improve their resilience.



LaHouse
Research & Education Center

LaHouse Research and Education Center, Louisiana State University Agricultural Center (LSU AgCenter), USA <https://www.lsuagcenter.com>



In 2025, the LaHouse team advanced its mission through a strong combination of scholarship, outreach, and strategic partnerships. The team collectively published 12 peer-reviewed journal articles, delivered 31 conference presentations, and submitted 26 competitive grant proposals, reflecting a year of sustained productivity and national engagement.

LaHouse also had significant growth in public outreach. LaHouse content reached an estimated 5.4 million people through mass media, while 16,000 adults participated in the center's in-person extension programs and 4,400 youth engaged in hands-on learning experiences. These numbers underscore the expanding visibility and impact of LaHouse's work across Louisiana and beyond.

In early 2025 LaHouse submitted a full proposal to the NSF Engines Program. Although the proposal was not selected to advance in the competition, the process generated valuable insights through 379 collected surveys and over 150 hours of stakeholder discussions. These discussions shaped the initial development of the proposal structure. Later, a comprehensive needs assessment of regional and statewide stakeholders revealed critical gaps in current systems, highlighting opportunities for improved coordination and shared strategy. These findings provide a clear path forward to help align the efforts of state agencies, university researchers, and nonprofit organizations. Most notably, stakeholders emphasized that soft technology solutions are needed in implementing resilient techniques in Louisiana with educational technology being the most cross-cutting technology area. These insights now serve as a roadmap for aligning the efforts of state agencies, university researchers, and nonprofit organizations to

reduce duplication and accelerate progress towards resilience.

LaHouse also expanded its programming portfolio with new initiatives designed to engage diverse audiences. One highlight was the "Visions for a Resilient Louisiana" youth program, a day-long camp that immersed participants in hands-on STEM activities focused on flood and wind-resilient construction. After exploring building science concepts in small groups, youth translated what they learned into original artwork illustrating themes of community resilience, energy efficiency, and emergency preparedness. Their work was later showcased at LSU's 20th Anniversary of Hurricane Katrina event, where participants had the opportunity to discuss their creations with professors, policymakers, and community leaders. Feedback from the youth indicated strong increases in their interest in hazards, construction, and emergency preparedness, with many reporting they were likely to share what they learned with family and classmates.

Throughout the year, LaHouse extension staff remained active across the state, delivering presentations, facilitating workshops, and providing continuing education for building professionals. Their efforts supported the adoption of resilient construction practices and strengthened relationships with industry partners. Staff also played a major role in statewide 4-H programming, developing new activities, lessons, and curriculum to introduce youth to concepts of resilience, sustainability, and building science. Earlier in the year, a 4-H club in the Baton Rouge area assembled "Go-bags" as a group and discussed the importance of emergency preparedness. Each attendee received a few bags for themselves and a few classmates or friends. In the fall, a member of staff in Lafayette Louisiana visited third grade classes in multiple public and private schools to offer a lesson on the impact of high-speed winds and facilitate an activity with the students.



Prof. Rubayet Bin Mostafiz

Assistant Director

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Extension Activities:

November 2025 - December 2025

- LaHouse hosted a Youth Service Day and painted a 40 foot long mural, created and stained wooden benches, and decorated birdhouses.
- LaHouse had a booth at the annual Greater Baton Rouge Realtors Expo where over 400 realtors were in attendance.
- Claire Scott teamed up with the staff at Camp Grant Walker to participate in 3 days of their Renewable Energy Day Camp for 4th graders in Grant Parish where she taught about energy efficiency.
- Pam Lewandowski hosted the Duct and Envelope Tightness (DET) Training for 5 trainees.
- Claire Scott collaborated with the Bayou Board of Realtors (Houma) and the Southwest Realtors Association (Lake Charles) to host a Lunch and Learn on LaHouse resources and FORTIFIED.
- Shelly Kleinpeter was interviewed by WAFB news about weatherization for the colder months ahead.

- Claire Scott participated in the Southwest Region 4 -H Challenge Camp where she taught youth about the importance of energy efficiency and housing insulation through a fun, ice cold challenge! She also facilitated the same challenge with 4th graders at Cathedral Carmel Elementary.
- Celeste Robin and Pam Lewandowski hosted Lead RRP Training, certifying 20 participants.
- Claire Scott attending GOHSEP's Stronger Standards, Safer Homes Training in Lafayette, where she spoke on LaHouse's training resources and our work on the State Hazard Mitigation Plan.
- LaHouse staff attended the Louisiana Land-Grant Agriculture Summit where our research team facilitated one of the breakout sessions.
- Shelly Kleinpeter reached a total of 4255 people through our Facebook for the month of November and 2000 in December.
- 30 trainees with the Entergy Solutions Trade Allies group visited LaHouse for a custom, requested home hazard training and their quarterly meeting

September 2025 - October 2025

- Claire Scott hosted a resource-based booth at the Louisiana Housing Corporation Think Tank in Lafayette, LA.
- The LaHouse team hosted an AgCenter State-Wide Webinar on the Community Resiliency Toolkit.
- Through a grant with the Greater Baton Rouge Office of Community Development, the LaHouse Team hosted a 2 day afterschool program with the Boys and Girls Club where youth learned about resilience.
- Claire Scott teamed up with Southwest Louisiana Community Foundation for a resource-based booth at the American Institute of Architects Conference in Lake Charles, LA.
- LaHouse hosted 3 DET Trainings and certified professionals to assess building and duct leakage and air changes.
- Claire Scott visited 3rd grade classrooms at J. Wallace James and Fatima Elementary Schools where youth completed the Marshmallow Wind Resilience Challenge as an extension of their learning about Louisiana's natural hazards.
- Pam Lewandowski hosted Mold Remediation Training, and 11 professionals

attended the required training for contractor licensing for mold remediation.

- LaHouse hosted Dr. Sam Brody from the Institute for a Disaster Resistant Texas and discussed opportunities for collaboration.
- Shelly Kleinpeter and Claire Scott completed our Flood Fighter Challenge with over 450 youth at the Iberville Parish Annual AgAdventure Day.
- Meggan Franks and Claire Scott attended the Extension Disaster Education Network Conference where they presented our Community Resiliency Toolkit and had a poster on the Louisiana Disaster Reduction Initiative (DRI).
- Pam Lewandowski contributed an article to the Building Performance Association Journal on energy efficiency and insulation
- Claire Scott visited 4th grade classrooms at St. Cecilia Elementary where youth learned about energy efficiency through our Biomimicry Insulation Challenge.

- Pam Lewandowski hosted EPA Lead Renovator Training on September 12th and October 28th in Lafayette. We certified 21 professionals.



July 2025 - August 2025

- Shelly Kleinpeter appeared on WBRZ speaking about incentives being created for the FORTIFIED roof program.
- LaHouse had a booth at Louisiana Department of Insurance Conference to share LaHouse resources.
- Shelly Kleinpeter and Dr. Rubayet Bin Mostafiz presented at the Louisiana Floodplain Management Association summer workshop in Alexandria.
- Shelly Kleinpeter appeared on the WAFB morning show, promoting the LaHouse Storm Ready Saturday event.
- LaHouse hosted a “Storm Ready Saturday” for the public to share resources ahead of hurricane season’s peak.
- Celeste Robin gave a tour of LaHouse to Jefferson Parish floodplain managers.
- Ken Guidry presented at a Louisiana Sea Grant event in Terrebonne Parish.
- Staff hosted two weekend day camps to teach youth in Baton Rouge about resilience and have them express their new knowledge with art.
- Emery DeSonier hosted her Healthy Living Presentation series in Lake Charles.
- LaHouse teamed up with the Community Foundation of SWLA, Project Build A Future, & Arcane Inspections for The HBA of SWLA Home Show Expo.

May 2025 - June 2025

- LaHouse staff attended, presented had a table at the Association of State FloodPlain Managers in New Orleans.
- LaHouse staff presented at the Louisiana State of the Coast Conference in New Orleans.
- Shelly Kleinpeter spoke to a radio station in Lafayette about emergency preparedness ahead of hurricane season.
- LaHouse staff gave a presentation and tour to youth attending 4-H University.
- LaHouse staff gave a tour to youth attending the College of Engineering REHAMS summer program.



March 2025 - April 2025

- Ken Guidry facilitated an activity at LaFourche Parish 4-H Outdoor Day.
 - Claire Scott hosted events in St. Mary Parish, Acadia Parish, Calcasieu Parish, and virtually to the Disaster Justice Network where she presented on LaHouse, FORTIFIED, and sustainable building practices.
 - Candace Derbes attended 4-H Club Day in Zachary, LA where she facilitated the Flood Fighter Challenge.
 - Claire Scott spoke at the the Louisiana Housing Corporation Think Tank in Lake Charles, LA.
 - The LaHouse team hosted two field trips at LaHouse where youth completed our Insulation STEM Challenge and participated in a tour.
 - Claire Scott attended a ceremonial groundbreaking for the nonprofit organization Project Build a Future for a FORTIFIED Gold, ENERGY STAR neighborhood that LaHouse is guiding them to build.
 - Claire Scott presented our bank of youth resources to pre-service teachers at the Educators Rising Conference in Lafayette, LA.
 - The LaHouse team completed activities related to energy efficiency to over 7,000 youth at the LSU AgCenter’s AgMagic Baton Rouge and On the River.
 - Emery DeSonier and Claire Scott facilitated an activity at Rapides Parish 4-H AgDay
- Ken Guidry, Emery DeSonier, and Candace Derbes manned a resource-based booth at the New Orleans Home and Garden Show



January 2025 - February 2025

- Emery DeSonier hosted her Healthy Living Presentation series in Lake Charles.
- Claire Scott partnered with the Louisiana Housing Corporation at 5 libraries in Lafayette Parish to provide information on DIY energy efficient housing upgrades.
- The LaHouse team manned a resource-based booth at the Home and Remodeling Show where they interacted with over 4,000 residents.
 - Claire Scott presented to the Dream Home Realty and NextHome Cutting Edge Realty teams about LaHouse and the benefits of sustainable building.
- The LaHouse team interacted with over 350 youth at the LSU AgCenter Livestock Show in Gonzales.
- Claire Scott set up a booth at the Lafayette Parish Cuisine de Jardin where attendees participated in an insulation related STEM challenge.
- Claire Scott presented to The Greater Baton Rouge Mortgage Lenders Association about LaHouse and FORTIFIED alongside a FORTIFIED Roofer and Evaluator.
- Ken Guidry and Candace Derbes educated over 1525 youth at Southern University’s Ag Day, including a special day reserved for exceptional children.
- Pam Lewandowski attended STEM Day hosted at Woodlawn Middle School and discussed the purpose of insulation in a home and how resilient construction helps to keep homes intact in the event of a weather event.

Referred Journal Publications

- Loblely, J., Miner, G., & Franks, M. (2025). The VRKC: A Newly Updated Tool to Help 4-H Volunteers Develop Foundational Competencies. *The Journal of Extension*, 63(1), 5.
- Conger, S. L., Rohli, R., Friedland, C., Franks, M. "Drought Irrigation Response Tool (DIRT)." *Journal of the American Society of Sugar Cane Technologists* 44 (2025).
- Franks, M., Culp, K., Knoepfli, K., Burns, T. A., & Wade, B. (2025). Ignite the Spark: A Multi-State Collaboration for Engaging and Retaining 4-H Volunteers. *Journal of Youth Development*, 20(4), 9.
- Monalisa, S.*, Alipuor, M., Paul, D., Rahman, M. A., Siddika, N., Apu, E. H., & Mostafiz, R. B. (2025). Transforming dental care, practice and education with additive manufacturing and 3Dprinting: Innovations in materials, technologies, and future pathways. *Dentistry Journal*, 13(12),555. <https://doi.org/10.3390/dj13120555>
- Mostafiz, R. B.*, Al Assi, A., Taghinezhad, A., Friedland, C. J., Rohli, R. V., Rahim, M. A., Emrich, C. T., Gall, M., & Johnson, E. (2025). Flood risk and mitigation calculator tool to support decision-making for enhancing community resilience: A case study of the U.S.A. Gulf Coastal region. *Frontiers in Built Environment*, 11. <https://doi.org/10.3389/fbuil.2025.1486791>
- Morgan, J*., Mostafiz, R. B., and Friedland, C. J. (2025). Development of a decision support tool for use of 3D terrestrial laser scanning for piping designs. *Frontiers in Built Environment*, 11, 1663869. <https://doi.org/10.3389/fbuil.2025.1663869>
- Shovon, M.A.C., Mostafiz, R. B., Al Assi, A., and Rohli, R. (2025). Hydroclimatic extremes and aquaculture: a review of impact and response strategies. *Aquaculture International* 33, 439. <https://doi.org/10.1007/s10499-025-02108-3>
- Smith, K.A., Mostafiz, R. B., Friedland, C. J. and Nahmens, I. (2025). Bibliometric Web of Science and Google Trends analysis of multi-criteria decision analysis within the built environment. *Frontiers in Built Environment*, 11, Art. No. 1528895. <https://doi.org/10.3389/fbuil.2025.1528895>

Conference Paper

- Paul, A., Holst, C. M., Berryman, C., Friedland, C. J., and Kazemian, A. (2025). Development of Sustainable Low-Cement Construction 3D Printing Materials via Dense Particle Packing. Accepted ASCE Computing in Civil Engineering (i3CE 2025).
- Hamza, M., Monteiro, C., Nahmens, I., Ikuma, L.,

Robii, R., Mostafiz, R. B., Al Assi, A., and Friedland, C. J. (2025). Supply Chain Challenges in the Construction of Resilient Manufactured Homes. Accepted at IISE Annual Conference. Proceedings.

Extension Publication:

- Franks, M., **Mostafiz, R.B.**, Rahim, M.A., and Kleinpeter, S. (2025). What is Risk Rating 2.0? <https://www.lsuagcenter.com/articles/page1757703995250>
- Franks, M., **Mostafiz, R.B.**, Rahim, M.A., and Kleinpeter, S. (2025). Flood barrier and protection. <https://www.lsuagcenter.com/articles/page1757701432072>
- Franks, M., **Mostafiz, R.B.**, Rahim, M.A., and Kleinpeter, S. (2025). Elevated appliances and improved wall construction: A practical guide for flood resilience. <https://www.lsuagcenter.com/articles/page1757619201365>
- Franks, M., **Mostafiz, R.B.**, Rahim, M.A., and Kleinpeter, S. (2025). Types of floods and their impact on Louisiana communities. <https://www.lsuagcenter.com/articles/page1757702969596>

Poster Presentation:

- Bushra, N., Akhter, F., Douthat, T., Ceragene, M., Rahim, M. A., Friedland, C. J., & Mostafiz, R.B. (2025). What areas of Louisiana have the highest and lowest risks to marginal changes in flood depth: A sensitivity analysis of household damages based on flood depth and continuous return periods for Louisiana's 64 Parishes. In-person poster presentation at American Geophysical Union Fall Meeting AGU25, New Orleans, Louisiana, December 15-19.
- Kunku, L. P., Friedland, C. J., Mostafiz, R. B., Rahim, M. A., Franks, M., Wang, Y., & Brooks, J. (2025). Development of an Interactive Flood Risk Sandbox Tool Integrating Multi-Decadal Projections and Elevation Ordinance. In-person poster presentation at American Geophysical Union Fall Meeting AGU25, New Orleans, Louisiana, December 15-19.
- Kunku, L. P., Friedland, C. J., Mostafiz, R. B., Franks, M., & Kleinpeter, S. (2025). Louisiana Multi-Hazard Web Map. In-person poster presentation at American Geophysical Union Fall Meeting AGU25, New Orleans, Louisiana, December 15-19.
- Akter, D., Friedland, C. J., & Mostafiz, R. B., (2025). Comparative Evaluation and Policy Analysis of Natural and Nature-Based Features. In-person poster presentation at American Geophysical Union Fall Meeting AGU25, New Orleans, Louisiana, December 15-19.

- Akter, D., Friedland, C. J., & Mostafiz, R. B., (2025). Corporate Social Responsibility and Community Best Practices in the Global Energy Sector. In-person poster presentation at American Geophysical Union Fall Meeting AGU25, New Orleans, Louisiana, December 15-19.
- Hossain, T., & Mostafiz, R. B., (2025). Growing Against the Odds: Natural Hazards and the Fragility of Agricultural Systems. In-person poster presentation at American Geophysical Union Fall Meeting AGU25, New Orleans, Louisiana, December 15-19.
- Khan, N. M., Al Assi, A., Smiley, K., Jayasinghe, N. & Mostafiz, R. B., (2025). Social Vulnerability and Wind Risk Reduction through Enhanced Building Codes in Louisiana. In-person poster presentation at American Geophysical Union Fall Meeting AGU25, New Orleans, Louisiana, December 15-19.
- Khan, N. M., Mostafiz, R. B., & Rahim, M. A. (2025). Investigating the Impact of Rising Sea Surface Temperature on Hurricane Behavior along the Gulf Coast. In-person poster presentation at American Geophysical Union Fall Meeting AGU25, New Orleans, Louisiana, December 15-19
- Monalisa, S., Kazemian, A., Friedland, C. J., & Mostafiz, R. B. (2025). Public Policy Strategies for Scaling 3D-Printed Affordable Housing. In-person poster presentation at American Geophysical Union Fall Meeting AGU25, New Orleans, Louisiana, December 15-19.
- Monalisa, S., Apu, E. H., & Mostafiz, R. B. (2025). From Digital Design to Dental Delivery: 3DPrinting's Impact on Oral Health Innovation. In-person poster presentation at American Geophysical Union Fall Meeting AGU25, New Orleans, Louisiana, December 15-19.
- **Conference Presentation:**
- Pinheiro, L., Wang, Z., Pang, Z., Mostafiz, R. B., and Al Assi, A. (2025). A Longitudinal Analysis of Residential Electricity Costs and Social Equity Implications in Louisiana. 2025 ASHRAE Winter Conference, Orlando, FL. February 8-12.
- Rahim, M. A., & Mostafiz, R. B. (2025). Quantifying flood risk reduction through nature-based solutions in coastal areas. International Conference on Water & Flood Management (ICWFM), Dhaka, Bangladesh. February 22-24.
- Rahim, M. A., & Mostafiz, R. B. (2025). Assessing flood insurance implications of coastal master plan projects in Louisiana. International Conference on Water & Flood Management (ICWFM), Dhaka, Bangladesh.
- February 22-24.
- Mostafiz, R.B., Kleinpeter, S., Franks, M., Friedland, C. (2025). Bridging Science and Practice: LaHouse's Role in Promoting Resilient and Sustainable Housing in Louisiana. International Crisis and Risk Communication Conference (ICRCC), Clemson University, SC, March 10-12.
- Friedland, C., Farris, M., and Mostafiz, R.B. (2025). Innovations in Disaster Risk Reduction: Advancing Flood and Wind Resilience in South Louisiana. ResCon International, New Orleans, LA, March 11-13.
- Friedland, C.J. (2025). Wind and Flood Codes and Standards in Louisiana. BOAL Conference, Lake Charles, LA, March 17.
- Mostafiz, R.B., Al Assi, A., Franks, M., Kleinpeter, S., and Derbes, C. (2025). Empowering Louisiana's Communities with Resilient, Energy-Efficient Housing Initiatives. American Association of Geographers (AAG), Detroit, MI, March 24-28.
- Mostafiz, R.B., Rohli, R.*, Heymann, M., Turner, T., Nahmens, I., Ikuma, L., Hamza, M., Al Assi, A., and Friedland, C. (2025). Life-cycle benefit-cost analysis (LCBCA) of wind- and flood-resilient FORTIFIED® elevated manufactured homes. American Association of Geographers (AAG), Detroit, MI, March 24-28.
- Mostafiz, R.B., Al Assi, A., Franks, M., Kleinpeter, S., and Derbes, C. (2025). Empowering Louisiana's Communities with Resilient, Energy-Efficient Housing Initiatives. American Association of Geographers (AAG), Detroit, MI, March 24-28
- Mostafiz, R.B., Rohli, R.*, Heymann, M., Turner, T., Nahmens, I., Ikuma, L., Hamza, M., Al Assi, A., and Friedland, C. (2025). Life-cycle benefit-cost analysis (LCBCA) of wind- and flood-resilient FORTIFIED® elevated manufactured homes. American Association of Geographers (AAG), Detroit, MI, March 24-28.
- Friedland, C.J. and Gall, M. (2025). Future of Flood Resistant Design and Construction: Perspectives from ASCE 24 and Decision Support Tools. National Flood Association Annual Conference, Scottsdale, AZ, April 6-8.
- Shireman, C. & Lewandowski, P. (2025). Fundamentals of Insulation. National Housing Performance Conference, New Orleans, LA. April 7-10.
- Lewandowski, P. (2025). Ventilation and Moisture Management. Texas Association of Community Action Agencies Annual Conference, Corpus Christi, TX. April 28.

- Rahim, M. A., Al Assi, A., Hasan, F., Mostafiz, R. B., Smiley, K., & Friedland, C. J. (2025). Wind resilience in coastal Louisiana: A social equity approach to enhanced building code practices. ASCE International Conference on Computing in Civil Engineering (i3CE), New Orleans, LA, May 11-14.
- Rahim, M. A. (2025). 2029 Coastal Master Plan: Flood insurance implications of future scenarios and projects. State of the Coast Conference, New Orleans, LA, May 20-22.
- Mostafiz, R. B., & Rahim, M. A. (2025). Assessing homeowner insurance: Mitigation measures across multiple perils. State of the Coast Conference, New Orleans, LA, May 20-22.
- Farris, M., Friedland, C.J., Franks, M., Giering, J. and Mostafiz, R.B. (2025). Integrating Multi-Hazard Resilience into Louisiana's 2024 State Hazard Mitigation Plan: Innovations and Challenges. State of the Coast Conference, New Orleans, LA, May 20-22.
- Perotin, M. A., Reeder, A. J. and Friedland, C.J. (2025). Reviewing the Changes in the Latest Edition of ASCE 24. Association of State Floodplain Managers (ASFPM) Annual Conference, New Orleans, LA, May 18-22.
- Mostafiz, R.B, Rahim, M.A. (2025). Mitigating Costs: Strategies to Lower Flood Insurance Premiums under Risk Rating 2.0. Association of State Floodplain Managers (ASFPM) Conference, New Orleans, LA, May 18-2
- Mostafiz, R.B.*, Al Assi, A., and Hasan, F. (2025). Advancing wind resilience in coastal Louisiana through enhanced building code practices. 50th Annual Natural Hazards Workshop Researchers Meeting, Broomfield, CO, July 17-18.
- Berginnis, C. (Moderator), Cox, D., Friedland, C., Perotin, M., & Torrents, J. (2025). Withstanding the water: A new national standard for flood resilience. 50th Annual Natural Hazards Workshop, Broomfield, CO, July 17-18.
- Haney, J. (Moderator), Friedland, C., Shiyouni, Woodard, J., Sheldon, A., & Jacobs, M. (2025). Designing for risk. 50th Annual Natural Hazards Workshop Practitioners Meeting, Broomfield, CO, July 17-18.
- Mostafiz, R.B, Rahim, M.A. (2025). Mitigating Costs: Strategies to Lower Flood Insurance Premiums under Risk Rating 2.0. Association of State Floodplain Managers (ASFPM) Conference, New Orleans, LA, May 18-22.
- Friedland, C. J. and Hassert, B. (2025). Innovating Resilience: Solutions Inspired by Katrina.20 Years After Katrina: Louisiana's Journey to Resilience, Baton Rouge, LA, August 29.
- Friedland, C. J. (2025). Louisiana State Hazard Mitigation Plan. Local Voices, Smarter Maps: Building Resilience Through GIS workshop, Baton Rouge, LA, September 8-9.
- Friedland, C. J. (2025). Disaster Risk Reduction Initiative for the Petroleum Industry in Coastal Louisiana. Petroleum Environmental Research Forum (PERF), Seattle, WA, September 30 – October 1.
- Franks, M., Delasbour, A., Zito-Hebert, C., Kleinpeter, S., Smith, M., & Nickols, M. (2025). A comparative analysis of human and AI approaches to thematic coding in youth development evaluation. American Evaluation Association Annual Conference, Kansas City, MO. November 10-15.
- Franks, M., Delasbour, A., & Zak, C. (2025). From voices to visuals: Using Ripple Effect Mapping with youth and adult programs. Collaborative, Participatory and Empowerment Evaluation Workshop, American Evaluation Association Annual Conference, Kansas City, MO. November 10-15.
- Hossain, T., Conger, S. D., Rohli, R. V., & Mostafiz, R. B., (2025). Machine Learning – Enhanced Reference Evapotranspiration Modeling for Irrigation Resilience in Humid Louisiana. In-person talk at American Geophysical Union Fall Meeting AGU25, New Orleans, Louisiana, December 15-19.
- Bushra, N.*, Douthat, T., Mostafiz, R.B., Akhter, F., and Ceragene, M. (2025). From projections to planning: A modular framework for climate-smart flood risk modeling using R2D, BRAILS, and IN-CORE in coastal Louisiana. American Geophysical Union (AGU), New Orleans, LA, December 15-19

Competitive Grants Awarded

- Franks, M., Kleinpeter, S., and Mostafiz, R.B. 2025: AgCenter Resilience Response Initiative, Extension Disaster Education Network (EDEN), \$25,000.
- Franks, M., Kleinpeter, S., and Friedland, C.J. 2025. Homeowner Pathways to FORTIFIED: Preferences, Barriers, and Adoption Drivers. Insurance Institute for Business and Home Safety, \$40,000
- Mostafiz, R.B. 2025: Resilient Partnerships for Equitable Hazard Science and Community Empowerment in the Underserved Gulf Region (REACH). Subcontractor to LSU, University Corporation for Atmospheric Research (UCAR), \$5,626

- Franks, M., Kleinpeter, S., and Mostafiz, R.B. 2025: Resilient Futures Through STEAM: Youth Arts for Community Awareness and Environmental Resilience. Baton Rouge Mayor's Office of Community Development, \$38,767
- Lewandoski, P., and Kleinpeter, S. 2025: Lead Renovation Repair and Painting Training for Baton Rouge. Baton Rouge Mayor's Office of Community Development, \$152,092
- Franks, M., Kleinpeter, S. 2025: A New Era of Youth Service in America Statewide Partner Forum for MLK Day of Service, Youth Service America, \$1,000
- Zhihong, P., Su, Y-F., Huang, H., An, Y., Soni, A., Mostafiz, R.B. 2025: Climate-Resilient Buildings for Tomorrow's Efficient, Equitable, and Sustainable Communities, LSU, \$49,975.
- Franks, M., Kleinpeter, S., and Mostafiz, R.B. 2025–2026. Forecasting Change: A Youth Leadership Development Program for Community Engagement, Resilience, and Louisiana Risk Reduction, Sea Grant Mini-Grant, \$10,000.
- Rahim, M.A., Mostafiz, R.B., Al Assi, A., Friedland, C.J., and Franks, M. 2024: Enhancing Flood Insurance Literacy in Coastal Louisiana: Risk Rating 2.0. Louisiana Sea Grant (LSG) College Program, \$43,500.
- Rahim, M.A., Al Assi, A., and Mostafiz, R.B. 2024: Coastal Research & Engineering to Advance Testbeds for Ecosystem Design (CREATED): Engineering Performance of Natural and Nature-Based Solutions in Military Operations. Subcontractor to LSU, Engineer Research and Development Center (ERDC), \$574,924.
- Smiley, K., Done, J.M., Al Assi, A., Friedland, C., Mostafiz, R.B., and Rahim, M.A. 2025: Adapting to Wind Risk in a Changing Climate: Would enhanced building codes have lessened climate-driven impacts of Hurricane Ida? NSF NCAR Innovators Supplemental Funding, \$49,948
- Kleinpeter, S. 2025-2027: LCES Seed Grant, LSU AgCenter, \$5,000
- Franks, M. 2025: Comparative Study of Human and AI-Assisted Qualitative Analysis in a Longitudinal Evaluation of Youth Development: George Julnes Endowed Social Betterment Conference Award, American Evaluation Association, \$1,000
- Robin, C., Franks, M. 2025. LaHouse Youth Service Day with 4-H Kids Can Run Club. East Baton Rouge 4-H Foundation, \$2,400
- Bushra, N., Scott, J., and Mostafiz, R.B. 2025: Community Engagement: Local Engagement Assessment and Planning (LEAP) Framework for Resilience and Development, LSU Institute for Energy Innovation (IEI), \$261,565
- Lewandowski, P. 2025: Energizing Education: The Future of Energy in Louisiana Curriculum Development. LSU Institute for Energy Innovation (IEI), \$35,000
- Friedland, C.J., Lewandowski, P., Franks, M., Kleinpeter, S., and Mostafiz, R.B., 2025: Supporting Flood Insurance Literacy to Support Resilient Communities: A National Training Pilot. Extension Disaster Education Network, \$25,000
- Friedland, C.J., Mostafiz, R.B., and Al Assi, A. 2025: Insuring for Resilience: Strengthening Disaster Preparedness and Post-Catastrophe Reconstruction. The Swiss Re Institute, \$50,000.





Advanced Radar Research Center, University of Oklahoma (OU, ARRC), USA

<https://www.arcc.ou.edu>



A concept rendering of the proposed systems for the \$19.9M NSF project is shown. The project is to design, develop, and deploy two advanced Ka-band Dual-Doppler 3D Mobile Rapid-Scanning Volume Imaging Radars (KaRVIR) that will provide unprecedented observations of clouds and precipitation, enabling transformative research in Earth system science and atmospheric processes. These will be the first mobile, dual-Doppler Ka-band phased array radars for atmospheric research

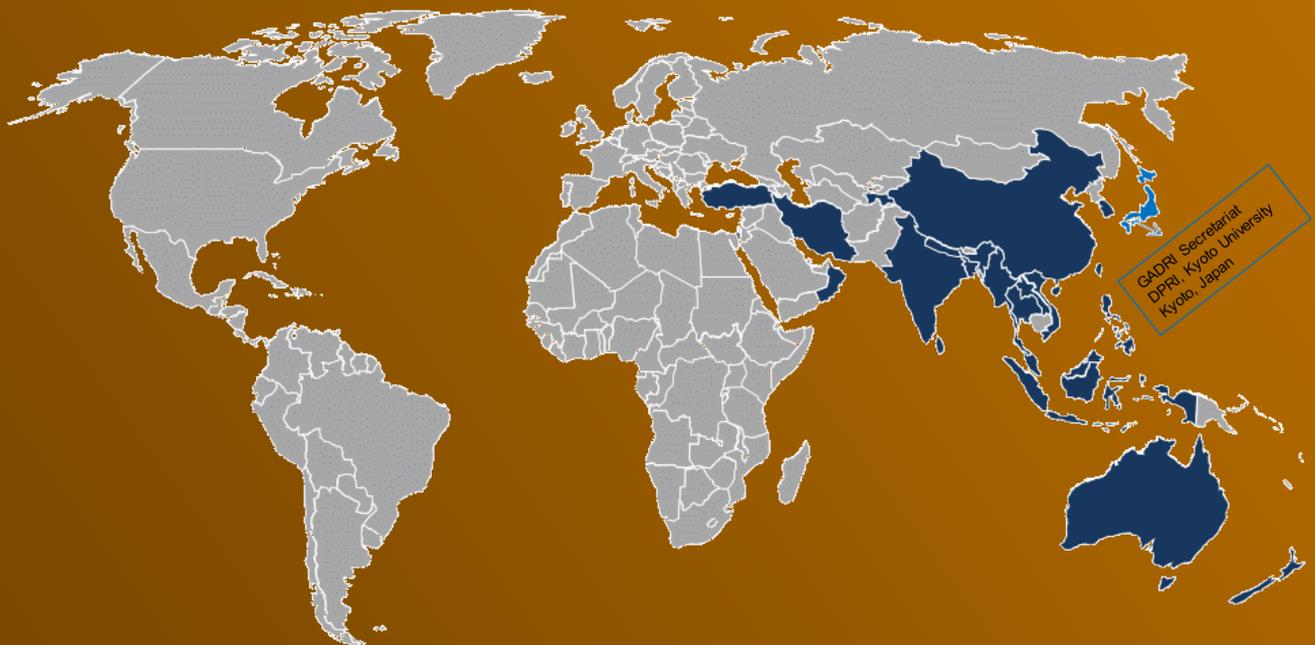
1. \$19.9 million award from the National Science Foundation's Mid-scale Research Infrastructure-1 program that will fund the development of two groundbreaking KaRVIR systems (Dual-Doppler 3D Mobile Ka-band Rapid-Scanning Volume Imaging Radars for Earth System Science).
2. The ARRC celebrated its 20th Anniversary on August 16, 2025, marking two decades of innovation, collaboration, and impact in radar science and engineering. Faculty, students, alumni, and partners gathered for a special gala in Norman, highlighted by keynote remarks from Dr. Robert Palmer, founding director of the ARRC and current Dean of the OU College of Atmospheric and Geographic Sciences.
3. Dr. Pierre Kirstetter (ARRC/SoM/CEES) has been elected a Fellow of the American Meteorological Society (AMS). The AMS Fellowship is one of the highest honors in the atmospheric or related oceanic or hydrologic sciences or their applications, awarded to individuals who have made outstanding contributions to the advancement of the field.
4. Dr. Daniel Watters (ARRC) has been appointed as Associate Editor for the *Journal of Hydrometeorology* (JHM), a publication of the American Meteorological Society. JHM publishes research on modeling, observing, and forecasting processes pertaining to water and energy fluxes and storage, including interactions with the boundary layer and lower atmosphere.
5. Dr. Jorge Salazar-Cerreno (ARRC/ECE) has been elected as the Technical Coordinator for the 2025 Antenna Measurement Techniques Association (AMTA) Symposium. In addition to this prestigious role, he also served on the AMTA Board of Directors, contributing his extensive expertise in microwave antennas, phased-array systems, and radar technologies to the organization's mission.
6. ARRC students have received university, national and international recognition and awards.
 - ARRC/ECE student Luis Felipe Moncada and his team earned second place in the Student Day Competition at 2025 AMTA Symposium.
 - ARRC/ECE student Alexis Oblitas received TICRA award at 2025 AMTA Symposium.
 - ARRC/SoM PhD student Jonah Pehl won the third Oral Presentation Award at the 2025 AMS International Conference on Radar Meteorology.
 - ARRC/ECE PhD student Callin Schone won the first place of Student Paper Awards at the 2025 IEEE International Radar Conference
 - ARRC/SoM MS student Emma Miller won the first Place Student Oral Presentation Award at the Symposium on Radar Research to Operations during the 2025 AMS Annual Meeting.
 - Two ARRC graduate students, Aimee Matland-Dixon and Ayano Ueki, received awards at the annual College of Atmospheric and Geographic Sciences (CAGS). Aimee Matland-Dixon received the Richard J. Doviak Scholarship Award and Ayano Ueki received the Tommy C. Craighead Award for Best Paper in Radar Meteorology.



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 Director of Operations
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Asia

Japan and Oceania



Asia — Members

Abu Dhabi	Rabdan Academy
Bangladesh	Institute of Water and Flood Management (IWFM) Bangladesh University of Engineering and Technology (BUET)
Bangladesh	Disaster and Development Organization (DADO)
Bangladesh	Department of Meteorology Faculty of Earth and Environmental Sciences, University of Dhaka
China	Center for Energy and Environmental Policy Research (CEEP), Beijing Institute of Technology (BIT)
China	Integrated Risk Governance Project (IRG-Project), State Key Lab of Earth Surface Processes and Resource Ecology (ESPRE), Beijing Normal University
China	School of Environmental Science and Engineering, Chang'an University
China	Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences
China	Disaster Risk Reduction Knowledge Service of International Knowledge Centre for Engineering Sciences and Technology under the auspices of UNESCO (IKCEST-DRR), Chinese Academy of Sciences
China	Institute of Tibetan Plateau Research, Chinese Academy of Sciences (ITPCAS)
China	Beijing National Earth Observatory, Institute of Geophysics, China Earthquake Administration (CEA)
China	State Key Laboratory of Geo-hazards Prevention and Geo-environment Protection (SKLGP), Chengdu University of Technology
China	Key Laboratory of Coastal Disaster and Defence (KLCDD), Hohai University
China	Natural Disaster Research Institute, Northeast Normal University
China	College of Engineering, Ocean University of China
China	Institute for Disaster Management and Reconstruction (IDMR), Sichuan University
China	College of Architecture and Environment, Sichuan University (SCU)
China	State Key Laboratory of Hydraulics and Mountain River Engineering (SKLH), Sichuan University
China	Shanghai Institute of Disaster Prevention and Relief, Tongji University
China	China Research Center for Emergency Management (CCEM), Wuhan University of Technology
Hong Kong	Hong Kong Jockey Club, Disaster Preparedness and Response Institute (HKJCDPRI)
India	Centurion University of Technology and Management (CUTM)
India	Department of Geography, Delhi School of Economics, University of Delhi
India	Disaster Mitigation and Management Centre (DMMC), Uttarakhand Secretariat
India	Humanities and Social Sciences Department, Indian Institute of Technology Bombay (IITB)
India	Research & Development, Indian Institute of Technology Gandhinagar (IITG)
India	Center of Excellence in Disaster Mitigation & Management, Indian Institute of Technology Roorkee (IITR)
India	South Asia Alliance of Disaster Research Institutes (SAADRI), IITR
India	Jindal School of Liberal Arts and Humanities, O.P. Jindal Global University
India	School of Ecology and Environment Studies, Nalanda University

India	School of Planning and Architecture (SPA), Delhi
Indonesia	Research Centre for Geosciences and Disaster, Brawijaya University
Indonesia	Gadjah Mada University, Faculty of Engineering, Center for Disaster Mitigation and Technological Innovation
Indonesia	JASA TIRTA I Public Corporation
Indonesia	Research Center for Disaster Mitigation, Institut Teknologi Bandung (ITB)
Iran	Soil Conservation and Watershed Management Research Institute (SCWMRI)
Iran	International Institute of Earthquake Engineering and Seismology (IIEES)
Iran	College of Agriculture and Natural Resources, University of Tehran
Iran	Natural Disasters Research Institute (NDRI)
Israel	Institute of Earth Sciences, The Hebrew University of Jerusalem (HUJ)
Korea	National Crisisonomy Institute, Chungbuk National University
Korea	International Water Resources Research Institute, Chungnam National University
Korea	Department of Disaster Prevention & Safety Engineering, Kangwon National University
Korea	Seoul National University
Korea	School of Urban & Environmental Engineering, Ulsan National Institute of Science and Technology
Lao PDR	Asia Research Center, National University of Laos (ARC-NUOL)
Lao PDR	Disaster Risk Reduction Division, Department of Climate Change (DCC), Ministry of Natural Resource and Environment
Malaysia	Institute for Environment and Development (LESTARI), Universiti Kebangsaan Malaysia (UKM)
Malaysia	Southeast Asia Disaster Prevention Research Initiative (SEADPRI-UKM), University of Kebangsaan Malaysia (UKM)
Malaysia	Universiti Sains Malaysia (USM)
Malaysia	Universiti Tenaga National (UNITEN)
Malaysia	Centre for Coastal and Ocean Engineering (COEI), Universiti Teknologi Malaysia (UTM)
Malaysia	Centre for Environmental Sustainability and Water Security (IPASA), Research Institute for Sustainable Environment, Universiti Teknologi Malaysia (UTM)
Malaysia	Institute of Noise and Vibration, Universiti Teknologi Malaysia (UTM)
Malaysia	Malaysia International Institute of Technology (MJIT), Universiti Teknologi Malaysia (UTM)
Malaysia	Disaster Management Institute (DMI), Universiti Utara Malaysia (UUM)
Myanmar	Department of Disaster Management, Min. of Social Welfare, Relief and Settlement, Republic of the Union of Myanmar

Nepal	International Centre for Integrated Mountain Development (ICIMOD)
Nepal	Central Department of Geology, Tribhuvan University
Oman	German University of Technology in Oman (GUTech)
Pakistan	University of Peshawar
Pakistan	Center for Disaster Management (CDM), University of Management and Technology
Philippines	Partnerships in Environmental Management for Seas of East Asia (PEMSEA)
Philippines	Disaster Risk Management Unit, Graduate School of Business, Philippine School of Business Administration (PSBA)
Philippines	National Hydraulic Research Center, National Engineering Center, University of the Philippines, Diliman Campus
Philippines	Planning and Development Research Foundation Inc. (PLANADES)
Philippines	University of the Philippines Resilience Institute (UPRI)
Philippines	Philippine Society of Emergency Medical Technicians (PSEMT)
Singapore	Institute of Catastrophe Risk Management, Nanyang Technological University (NTU)
Sri Lanka	Natural Resource Management & Laboratory Services, Central Engineering Consultancy Bureau (CECB)
Sri Lanka	National Building Research Organisation (NBRO)
Sri Lanka	Center for Transdisciplinary Research
Sri Lanka	Sri Lanka Institute of Information Technology (SLIIT)
Sri Lanka	Faculty of Engineering, University of Moratuwa
T-Chinese Taipei	National Center for Research on Earthquake Engineering (NCREE), National Applied Research Laboratories
T-Chinese Taipei	Disaster Prevention Research Center (DPRC), National Cheng-Kung University (NCKU)
T-Chinese Taipei	Tainan Hydraulics Laboratory (THL), National Cheng Kung University (NCKU)
T-Chinese Taipei	National Science and Technology Center for Disaster Reduction (NCDR)
T-Chinese Taipei	Center for Weather Climate and Disaster Research (WCDR), National Taiwan University
Tajikistan	Mountain Societies Research Institute (MSRI), University of Central Asia
Thailand	Asian Disaster Preparedness Center (ADPC)
Thailand	Disaster Preparedness, Mitigation and Management (DPMM), Asian Institute of Technology (AIT)
Thailand	Disaster and Risk Management Information Systems Research Group (DRMIS), Chulalongkorn University
Turkey	Kandilli Observatory and Earthquake Research Institute, Bogazici University
Vietnam	Department of Geo-Environment, Vietnam National University (VNU), Hanoi



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Photo: World Drowning Prevention Day, 25 July 2025 Observed in Sandwip Island, Bangladesh by Disaster and Development Organization (Poster in Bengali)



Photo: News Briefing published about observing World Drowning Prevention Day, 25 July 2025 Observed in Sandwip Island, Bangladesh by Disaster and Development Organization (Poster in Bengali)

- World Drowning Prevention Day 2025 observed in Sandwip on 25 July 2025
- DADO interns undertake four weeks' social media campaign on the observance of World Drowning Prevention Day 2025.
- DADO Summer 2025 Internship project supported 25 interns from seven major public and private university graduates who worked on fire incidences, drowning prevention, traffic incidences, drought and flood risk management in Bangladesh.
- Waste management in Cumilla in association with Cumilla waste management system on 15 June 2025.

• Alam E, Al Hattawi KS, Akter H, et al. 2025. Socioeconomic, demographic and environmental factors of child drownings in Northern Bangladesh, Injury Prevention, 0:1–10. doi:10.1136/ip-2024

-045434 (Research Article): <https://injuryprevention.bmj.com/content/early/2025/03/11/ip-2024-045434>

- Perceptions of climate change and its Impacts on local communities along the Noakhali Coast in Bangladesh (Research article): https://link.springer.com/chapter/10.1007/978-981-97-7110-3_16



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In 2025, there is a very important and scientific research achievement, professor Yaoming Ma's group and others have published a research paper titled "Establishment of Integrated Hydrometeorological Observation Platforms in Lakes across Three Distinct Climatic Zones on the Tibetan Plateau" in the journal *Bulletin of the American Meteorological Society*. This paper introduces a comprehensive hydrometeorological observation platform in lakes across three distinct climatic zones on the Tibetan Plateau.

Lakes on the Tibetan Plateau play a crucial role in regional hydrology and climate, yet they are highly sensitive to climate change. Despite their importance, our understanding of lake–atmosphere interactions in this region remains limited, primarily due to a lack of multiscale observations constrained by harsh environmental conditions. To address this data gap, we established a comprehensive hydrometeorological observation network across three lakes representing different climatic zones on the Tibetan Plateau. Since 2019, this network has continuously collected key datasets, including meteorological conditions, turbulent fluxes, water levels, temperature profiles, and salinity measurements. Our study suggests that these lakes significantly influence local climate by alleviating temperature fluctuations, altering wind patterns, and reducing atmospheric stability. The observational network marks a substantial step forward in capturing the lake-region climate system, improving our understanding of lake–atmosphere interactions and their impact on regional climate dynamics. Additionally, it supports the validation of models and refinement of remote sensing products. In the future, we aim to expand the integration of in situ, satellite, and model-based data to better support environmental conservation and water resource management on the Tibetan Plateau.

•Another scientific research achievement titled "Low-angle subduction of the Indian plate and megathrust geometry below the Eastern Himalayas" in the journal *NSR* by Bai Ling etc. The Eastern Himalayas features active intercontinental convergence and tectonic strike–slip extrusion, frequently generating large destructive earthquakes affecting millions. Yet how widespread strike–slip motion and plate convergence trigger such frequent seismicity remains poorly understood. Using new data from a recently deployed broadband seismic array, we derive the regional stress field and detailed plate structures. Earthquake focal

mechanisms reveal dominant north–south horizontal compression. From south to north across the Eastern Himalayas, the Indian crust displays low–angle subduction of the Moho and a flat–ramp geometry along the Main Himalayan Thrust. We propose that megathrust earthquake generation and broad mountain uplift can be explained by dominant north–south compression and gentle underthrusting of the Indian plate.

Papers:

- Ma, W., W. Ma*, Z. Xie, R. Su, L. Bai, Y. Fan, Y. Han, W. Hu, J. He., L. Ma, L. Shi, X. Shi, T. Chen, B. Wang, J. Wang, R. Iestyn Woolway, Yaoming Ma*, 2025, Establishment of Integrated Hydrometeorological Observation Platforms in Lakes across Three Distinct Climatic Zones on the Tibetan Plateau, *Bulletin of the American Meteorological Society*, 106 (10):E2052–E2072, doi:10.1175/BAMS-D-24-0294.1.
- Ling Bai, Hongru Li, Zhiwen Chen, Huili Zhan, Guohui Li, James Mori, Lin Ding, Low-angle subduction of the Indian plate and megathrust geometry below the Eastern Himalayas, *National Science Review*, Volume 12, Issue 12, December 2025, nwaf460, <https://doi.org/10.1093/nsr/nwaf460>



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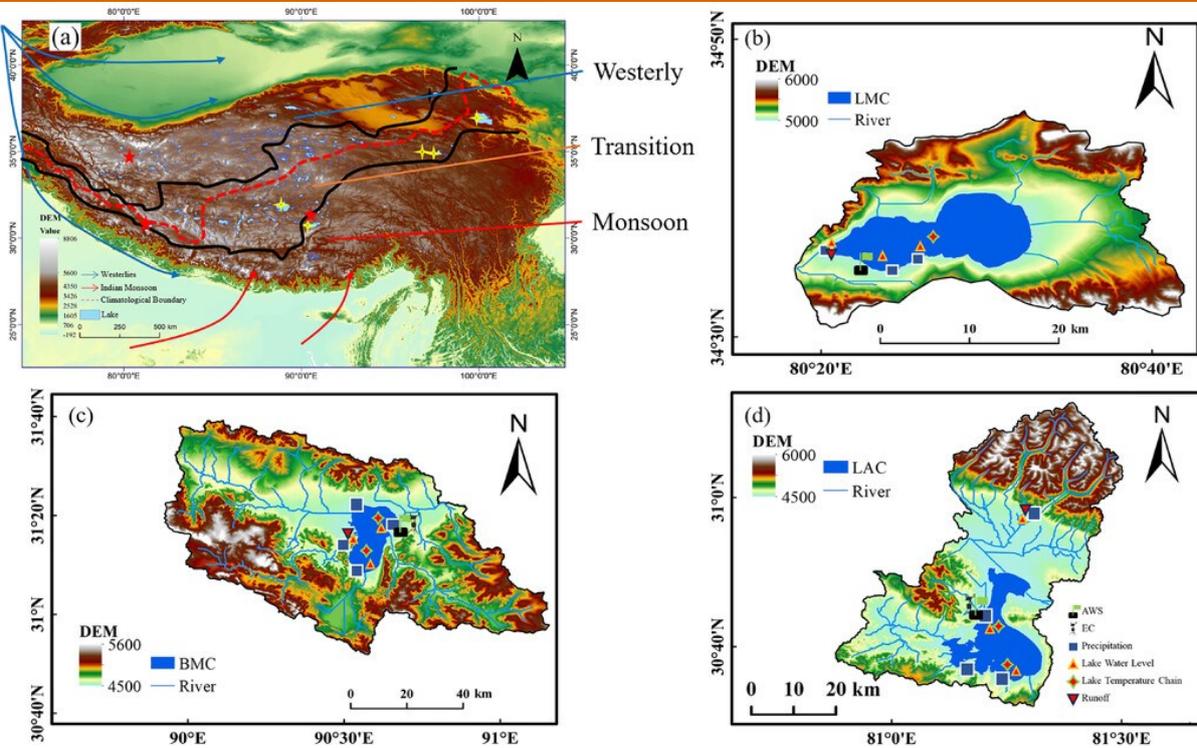


Fig. 1. Locations of the lake observation station and instrument deployment. (a) The pentagrams represent the locations of three lakes: (top) LMC, (middle) BMC, and (bottom) LAC. The red pentagrams indicate the stations established in this study, while the yellow pentagrams denote existing lake observation stations; observation instrument deployment points at (b) LMC, (c) BMC, and (d) LAC. The instruments are marked using

different shapes and colors: flag symbol for an automatic meteorological station and EC systems (installed at BMC and LAC), blue squares for rain gauge, yellow upward triangles for water level gauge, green star for lake temperature chain, and blue downward triangles for radar current meter and manual flow measurement. From Yaoming Ma's group.

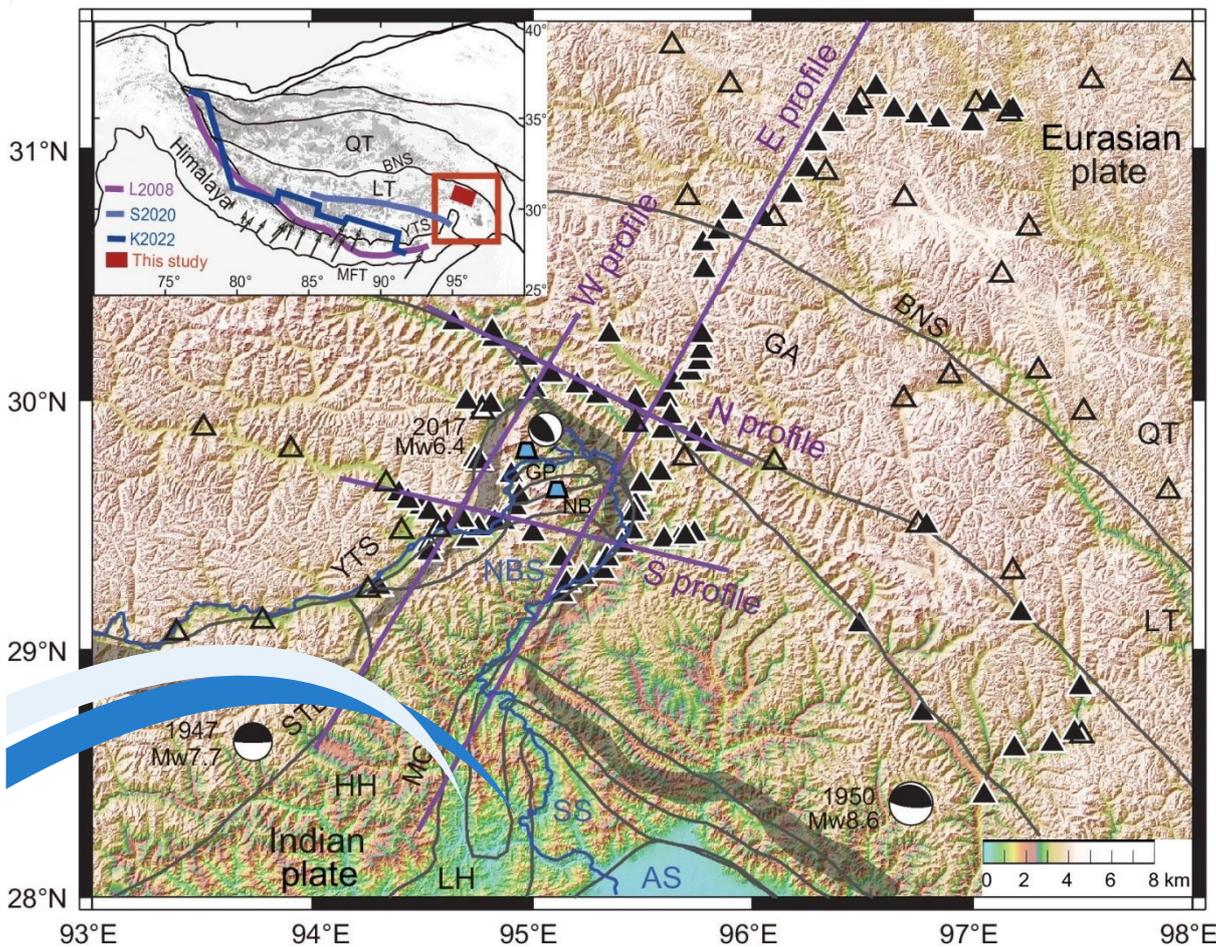


Fig. 2. Tectonic map with seismic stations. From Bai Ling's paper.



东北师范大学
Northeast Normal University

Natural Disaster Research Institute,
Northeast Normal University

China

<http://www.ndri.nenu.edu.cn/>



Expert lectures and advanced seminars at academic conferences at home and abroad on "Integrated Risk Management of Meteorological Disasters and Food Security-From Theory to Practice"

1. The National Key Research and Development Program of China: Research on multi-temporal and spatial scale fine risk assessment and zoning of crop drought, high and low temperature disasters. 2022.11-2025.12.
2. The National Key Research and Development Program of China: High-intensity forest fire risk factor monitoring and assessment technology. 2022.11-2025.10.
3. The National Natural Science Foundation of China: Research on multi-hazards meteorological disasters risk early warning, prediction and adaptation strategy system in Songliao maize belt. 2022.01-2025.12.
4. The Major Science and Technology Program of Jilin Province: Optimize the distribution of regional ecological industries and intelligent decision support platform. 2023.01-2025.12.
5. Chinese Academy of Engineering Consulting Project: Research on Meteorological Disaster Risk Prevention and Intelligent Climate Safeguard Countermeasure System for Grain Production Safety in Jilin Province. 2024.03-2025.03.
6. National "14th Five-Year Plan" Key R&D Program of China Topics: Refined Zoning Model and Mapping of Planting Suitability for High-Quality, Special-Purpose, Dense and High-Yielding Corn Varieties Suitable for Grain Harvesting. 2023.11-2027.12.
7. The National Key Support Project of Foreign Experts (Northeast Special Class H): Study on Early Warning and Prediction of Forest and Grassland Fire Risk Driven by Climate Change and Human Activities. 2025.4-2027.4.
8. Published the academic monograph "*Research on Risk Assessment of Multi-scale Agricultural Meteorological Disasters under the Background of Climate Change*". 2025.12.
9. Published the academic monograph "*Environmental risk assessment and management*". 2025.2.
10. Won the first prize of teaching achievement award "Innovation and application of" 3-2-5 "practical education mode for outstanding talents in environmental science"..
11. Hosted academic conferences at home and abroad, including expert lectures and advanced seminars on "Integrated Risk Management of Meteorological Disasters and Food Security-From Theory to Practice".
12. Convener of important academic conferences at home and abroad twice.
 - [1] In 2025.8, the convener/frontier of disaster risk science theory and method at the 2025 academic annual meeting of natural disaster risk and comprehensive disaster reduction professional committee of China Geographical Society.
 - [2] In 2025.10, the convener of the 6th China Coastal Risk Analysis and Management Symposium/Agricultural Catastrophe Risk Analysis and Management.



Prof. Jiquan Zhang

Director

E-mail:
zhang-

13. Attend academic conferences at home and abroad and give reports for 6 times.

[1] Report at the 2025 Disaster Prevention and Mitigation Conference (China Disaster Prevention Association) in Hangzhou on April 28th, 2025/ Dynamic risk assessment and comprehensive management of crop high temperature and drought combined disasters and adaptive countermeasures.

[2] On April 28th, 2025, he gave a presentation at the Natural Disaster Risk Assessment and Application Sub-forum of the 2025 Disaster Prevention and Mitigation Conference (China Disaster Prevention Association)/Study on the Risk Assessment of Geological Disaster Chain Induced by Extreme Precipitation Based on Scenario Simulation.

[3] On June 26th, 2025, he made a report in the academic exchange of Liaoning Eco-meteorology and Satellite Remote Sensing Center/Study on Fine Risk Assessment and Early Warning of Maize Lodging Disaster due to Strong Wind (online).

[4] On October 25th, 2025, he gave a presentation at the 6th Symposium on Risk Analysis and Management in Coastal Areas of China in 2025/ Intelligent identification of crop types and accurate detection of phenotypic elements based on AI and multi-source data (online).

[5] Report at the 2025 Agricultural Green Development Forum and the Third China Agricultural Green Technology Industry Conference in Nanjing on October 27th, 2025/ Dynamic Prediction of Rice Chilling Risk in Northeast China under the Background of Climate Change.

[6] Report at Yanbian University on November 21st, 2025/Study on Ecological Security Assessment and Smart Management for Green Development and Land Spatial Planning.

14. Instruct master and doctoral students to make national/international conference reports for 5 people.



Report of the 2025 Disaster Prevention and Mitigation Conference (China Disaster Prevention Association)



Report on 2025 Agricultural Green Development Forum and the Third China Agricultural Green Technology Industry Conference



The academic monograph "Research on Risk Assessment of Multi-scale Agricultural Meteorological Disasters under the Background of Climate Change"



The academic monograph "Environmental risk assessment and management"



Institute for Disaster Management and Reconstruction (IDMR), Sichuan University-The Hong Kong Polytechnic University

China—<http://www.idmr.scu.edu.cn/en/>

中国地理学会自然灾害风险与综合减灾专业委员会2025年学术年会

2025年8月23-24日



Annual Academic Conference of the Committee on Natural Disaster Risk and Integrated Disaster Reduction, Geographical Society of China

As a institution dedicated to advancing disaster risk reduction and resilience-building worldwide, IDMR has made progress during the year 2025. Our efforts span talents cultivation, academic innovation, international collaboration, and practical disaster response. The following highlights summarize our key achievements and ongoing contributions to the field.

1. A major progress has been made in applying for our first-ever undergraduate program named “Disaster Prevention and Reduction Science and Engineering”. It has been approved by experts from the Ministry of Education and is expected to enroll the first cohort of undergraduate students in September this year (2026).

2. IDMR successfully hosted the 2025 Annual Academic Conference of the Chinese Geographical Society Special Committee on Risk of Natural Disaster and Comprehensive Disaster Reduction at our facilities in August. More than 500 participants from more than 140 universities, research institutes, and government departments joined the conference. It focused on nine core issues, among others including the cutting edge of disaster risk science theory and methodology, disaster multiform monitoring, and new methods and technologies for risk numerical intelligence prevention and control. In total, 4 academicians delivered keynote speeches, 230 oral presentations and 50 wall poster presentations were held. A total of 23 seminar and four young scholars forums were set up.

3. Through the efforts of our research team, IDMR received approval for 6 national-level projects. Eight articles were published in high-level journals and other Nature-indexed journals. Our Associate Prof. XU Lilai, together with Professor Di Baofeng have published a paper titled *Global coastal human settlement retreat*

driven by vulnerability to coastal climate hazards on Nature Climate Change. This study reveals the migration patterns of global coastal human settlements over the past 30 years and their relationship with climate vulnerability, providing a scientific basis for the formulation of coastal climate adaptation policies.

4. For international collaboration, IDMR organized 28 students visited Nepal and Japan to conduct the “International Disaster Reduction Strategy and Resilience Development” exchange program. This year, IDMR also received international visitors, such as from the Swiss Centre for Technology and Culture, the International Center for Integrated Mountain Development (ICIMOD), as well as 60 foreign experts, including Academician Didier Sornette and Milan Konečný. More so, IDMR was invited to participate in the 2025 Global Disaster Reduction Platforms 8th Conference (GP2025). During this event, Prof. DI Baofeng was privileged to meet Mr. Kamal Kishore, with whom he shared and discussed our research and practical experience in community disaster reduction, multi-disaster risk assessment, emergency response to sudden disasters, and post-disaster reconstruction.



Prof. Di Baofeng

Director

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5. To fulfil our social responsibility, IDMR has responded to major natural disasters in China and abroad. Our faculties undertook front line roles in the aftermath of Dingri Earthquake and Junlian landslide. Additionally, after the earthquake in Myanmar, IDMR compiled a bilingual version of the “Earthquake Self-Rescue and Mutual Rescue Manual,” which was distributed through embassy and international aid organizations to help the people in the affected areas improve their self-rescue skills and also help other affected people.

In terms of international training course, working with the China-Pakistan Joint Research Center on Earth Sciences, brought together 31 trainees from seven

countries along the Belt and Road, including Pakistan, Nepal, Azerbaijan, Thailand, Vietnam, Iran, and Chad. IDMR offered courses on “Geological Hazard Prevention and Control in Sichuan Province” and provided virtual reality-based disaster emergency skills training. Participants also conducted simulated fire evacuation drills in the fire survival education laboratory. The program also showcased the application of virtual reality technology in post-disaster psychological intervention and let trainees experience advanced virtual reality applications used in the treatment of post-traumatic stress disorder following disasters.



The Second Training Session on Disaster Reduction and Sustainable Development along the Belt and Road



Participation at the 2025 8th Conference of the UNDRR Global Platform for Disaster Risk



Visit to WHO Nepal Office by IDMR Students



IDMR sent experts to Junlian landslide area to provide guidance on the resettlement of affected residents and the verification of disaster conditions.

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Article | Published: 22 September 2025

Global coastal human settlement retreat driven by vulnerability to coastal climate hazards

[Lilai Xu, Xue Yang, Deliang Chen, Didier Sornette, Alexander V. Prishchepov, Shengping Ding, Wang Pang, Krishna Suryanto Pribadi, Baofeng Di](#) & [Xiaoming Wang](#)

[Nature Climate Change](#) (2025) | [Cite this article](#)



Indian Institute of Technology (IIT), Roorkee, India

<https://www.iitr.ac.in>



Events organized by the Centre of Excellence in Disaster Mitigation and Management

- The Centre of Excellence in Disaster Mitigation and Management has organised a programme on the occasion of the **International Day for Disaster Risk Reduction (IDDRR-2025)** on 13 October 2025, on the theme "Fund Resilience, Not Disasters".
- The Centre of Excellence in Disaster Mitigation and Management organised the **Research Scholar Day (RSD-2025)** on 13 October 2025.
- The group of ~10 research scholars participated and presented their research work in the European Geosciences Union General Assembly in April-May 2025, at Vienna, Austria.

Awards Received by Students of CoEDMM

- Mr Anandu Prabhakaran is awarded the prestigious Raman-Charpak Fellowship 2024 in the Atmospheric Sciences, Earth Sciences and Environmental Sciences Area. He will be working with Dr. Florent Mouillot on "*Towards Improvised Fire Weather Index for Early Warning System for Forest Fires in the Indian-Himalayas and French-Alps*" at the Center for Functional and Evolutionary Ecology which is a mixed research unit

under Université de Montpellier, CNRS, IRD and EPHE.

- Ms Shivani Joshi has been selected for a research project at RWTH Aachen University funded by the Advanced Research Opportunities Program (AROP). She will be working with Dr Anja Dufresne, RWTH Aachen on "*Predicting Landslide Dam Formation in the Himalayas: Integrating Geomorphic Indices and SAR-based Slope Deformation Analysis*".
- Mr Mayank Upadhyay is selected for the 84-day Summer School Programme — the Specialisation Certificate for the Assessment and Management of Geological and Climate Related Risk at the Faculty of Science, University of Geneva, for Spring Semester 2026. The research project will be carried out under the supervision of Prof. Corine Frisknecht.

Prof. Amit Dhiman
Head of the Centre



E-mail: coe_@iitr.ac.in



- Mr Joshal Kumar Bansal is awarded the prestigious Commonwealth Split-site Fellowship 2025-26 in the Disaster Mitigation and Management Area. For the same, he will be working with Dr Andrea Momblanch on "Evaluating the Role of Sediment Transport and Avalanche Events in Modulating Glacial Lake Debris Flow (GLDF) Risk in Vulnerable Himalayan Regions" at the Environmental Sustainability Department of Cranfield University, England, United Kingdom.
- Ms Shrutika Agrawal received the DAAD Scholarship under the KOSPIE Programme which provided her a semester exchange at Technische Universität Braunschweig, Germany. She has been working on her master's thesis entitled as 'Towards an improved PDNA approach in India' in the Leichtweiß Institute for Hydraulic Engineering under the supervision of Prof. Dr.-Ing. Dr. rer. nat. habil. Kai Schröter.
- Mr. Shiwam Singh was awarded a travel grant to attend the HPC4Climate Summer School 2025 held at Lauenburg, Germany, conducted by the Max Planck Institute for Meteorology from 28 July – 07 August 2025. He participated in the intensive summer school focused on high-performance computing applications in climate and atmospheric sciences.
- Joshi, S., Vashistha, A., Siva Subramanian, S., & Yunus, A. P. (2025). Reconstructing seismic landslide spatial records in data-scarce Indian Himalayas: a polygon-based inventory and susceptibility assessment for the 1999 Chamoli earthquake. *Physics and Chemistry of the Earth, Parts A/B/C*, 104243.
- Vashistha, A., Joshi, S. & Siva Subramanian, S. Scenario-based probabilistic risk assessment of earthquake-induced landslides in Uttarakhand, India. *Stoch Environ Res Risk Assess* (2025).
- Dewrari, M., & Subramanian, S. S. (2025). Unravelling failure mechanisms of rainfall-induced debris slides through material characterisation and reduced-scale flume experiments. *Engineering Geology*, 352, 108051.
- Bansal, J. K., Goswami, A., Ramsankaran, R. A. A. J., Kulkarni, A., Singh, V., & Kulshrestha, G. (2025). Lake bathymetry and GLOF modelling of Drang Drung glacial lake, Ladakh, India, using machine learning techniques. *Hydrological Sciences Journal*, 70(15), 2734-2744.
- Bansal, J. K., Goswami, A., & Roy, A. (2025). Snow avalanche in the Indian Himalayas: Hazard zonation and climate change trends in Kullu region of Himachal Pradesh, India. *Physics and Chemistry of the Earth, Parts A/B/C*, 138, 103882.

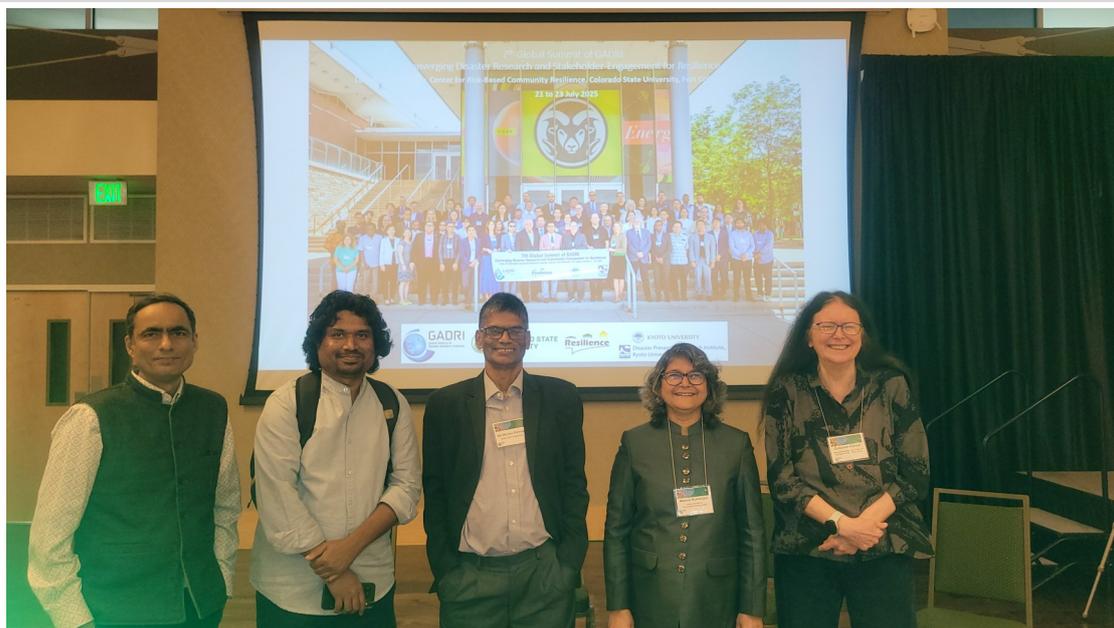
Research Publications by students of CoEDMM

- Singh, S., Srivastava, P., & Dhiman, A. (2025). Modelling and analysis of extreme weather-induced disasters in Indian North-West Himalayas. *Natural Hazards*, 121(11), 13153-13171.
- Singh, S., & Srivastava, P. (2025). Parameterization of surface layer processes in extreme weather conditions over mountainous region. *Weather and Forecasting*, 40(8), 1489-1510.
- Kumari, C., Shukla, R., & Gornott, C. (2025). Understanding spatiotemporal changes of crop species diversity for India. *Environmental and Sustainability Indicators*, 100947.
- Anagha, K. H., & Shukla, R. (2025). Vulnerability and risk assessment of coastal hazards in India: Insights from bibliometric analysis and systematic review. *Ocean & Coastal Management*, 267, 107740.
- Ranjan, R., Goswami, A., Ojha, C. S. P., Jain, S., & Singh, P. K. (2025). Climate change impact assessment on the river discharge of the upper Ganga Subbasin. *Physics and Chemistry of the Earth, Parts A/B/C*, 138, 103887.
- Singh, P. K., Goswami, A., & Puppala, S. P. (2025). Aerosol composition, transport, and radiative impact derived from ground-based and satellite remote sensing in the Central Himalaya. *Science of The Total Environment*, 1003, 180657.
- Gupta, T., & Roy, S. (2025). DisasterRes-Net: A framework for analyzing social media images in disaster response. *International Journal of Disaster Risk Reduction*, 116, 105119.
- Gupta, T., Rai, A., & Roy, S. (2025). SentimentMapper: A framework for mapping of sentiments towards disaster response using social media data: T. Gupta et al. *Applied Intelligence*, 55 (7), 605

South Asia Alliance of Disaster Research Institutes (SAADRI), India



<https://www.saadri.net/>



Participation at the 7th Global summit of GADRI, Colorado State University, Fort Collins, Colorado, USA, July 2025

1. Participation in the 7th Global Summit of GADRI, 21–23 July 2025

Representatives of SAADRI participated in the 7th Global Summit of the Global Alliance of Disaster Research Institutes (GADRI) held at Colorado State University, Fort Collins, USA, from 21–23 July 2025. Prof. Mahua Mukherjee and Prof. Amit Dhiman attended the summit and contributed to multiple academic sessions.

The other notable SAADRI Members who attended the same are Prof H Tatno, Prof Gretchen, Prof. Mansur Rahman, Young Professional Dr Juel Mia among others. Prof. Mahua Mukherjee delivered a presentation in the GADRI Regional Alliances Session, introducing SAADRI and highlighting ongoing collaborations and research opportunities within the South Asian region. She also chaired a plenary session emphasizing the importance of fundamental and transdisciplinary research for addressing natural hazards, cascading disasters, and resilience-building.

Additionally, Prof. Amit Dhiman chaired sessions on Advancing Global Disaster Risk Reduction and Resilience, including discussions on industrial and man-made disasters and safety. The summit also featured panel discussions addressing the relationship between science, technology, policy, and communities in the context of the UNDRR Sendai Framework for Disaster Risk Reduction and the UNFCCC Paris Agreement.

2. Training Workshop on “Safe Children, Safe Future: Disaster Awareness”, 23 August 2025

SAADRI, in collaboration with the Indian Institute of Technology Roorkee, organized a training workshop titled “Safe Children, Safe Future: Disaster Awareness” on 23 August 2025 at the Senate Hall, James Thomson Building, IIT Roorkee.

The workshop was designed for school students from Classes 5 to 8 and aimed to build awareness about disaster risks and climate-related hazards at an early age. The training covered key topics including heatwaves, climate change, fire safety, and sustainable development.



Prof. Mahua Mukherjee
Secretary-General

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Training workshop on “Safe Children, Safe Future: Disaster Awareness”

The session emphasized interactive learning and experiential activities, enabling students to understand emergency preparedness and response strategies in an engaging manner. One of the highlights of the workshop was the use of the Riskland Game developed by UNDRR, which has been translated into Hindi by SAADRI to increase accessibility and engagement for local communities.

Through games, discussions, and scenario-based activities, students learned about disaster preparedness and the importance of community resilience. The workshop also encouraged participants to become “safety ambassadors” within their schools and communities by sharing the knowledge gained during the session.

This initiative reflects SAADRI’s commitment to promoting disaster awareness and resilience education among younger generations, recognizing that early awareness plays a critical role in building safer and more resilient societies.

3. Webinar on “Publishing your Research: Best Practices for Early Career Researchers”, 15 September 2025

SAADRI collaborated with IEEE Young Professionals and several IEEE Student Branch Chapters to organize an international webinar titled “Publishing your Research: Best Practices for Early Career Researchers” on 15 September 2025.

The session was delivered by Prof. Alejandro C. Frery (Victoria University of Wellington, New Zealand; IEEE Fellow), who shared valuable insights on publishing research with IEEE and strategies for improving the visibility and impact of scholarly work. The webinar focused on key aspects such as manuscript preparation, journal selection, navigating the peer-review process, and developing a strong publication record. The event attracted participation from early career researchers and scholars across multiple countries.

4. SAADRI at IAHS 2025 Conference, IIT Roorkee, 05-10 October 2025

The South Asia Alliance of Disaster Research Institutes (SAADRI) actively contributed to the International Association of Hydrological Sciences (IAHS) 2025 Conference held at the Indian Institute of Technology Roorkee. As part of the conference activities, SAADRI facilitated knowledge exchange and academic capacity building initiatives focused on water science, disaster risk reduction, and resilience.

1.1 Critical Writing Workshop at IAHS 2025, 05 October 2025

As part of the conference, SAADRI organized a Critical Writing Workshop aimed at strengthening the academic and professional capacity of young researchers working in disaster management, hydrology, and climate resilience. The workshop focused on enhancing scientific writing, critical thinking, and research communication skills essential for publishing and disseminating impactful research.

The session featured distinguished speakers including Univ. Prof. Dr. Günter Blöschl, Head of the Institute of Hydraulic Engineering at TU Wien (Austria), and Prof. Venkataraman Lakshmi, John L. Newcomb Professor of Engineering and President of the Hydrology Section of the American Geophysical Union at the University of Virginia, USA. The speakers shared insights on communicating scientific ideas effectively, writing high-impact research papers, and engaging with international research communities.

The workshop was moderated by Prof. Brijesh Kumar Yadav from IIT Roorkee, who facilitated an engaging dialogue between participants and speakers. The session provided early-career researchers with practical guidance on academic publishing, interdisciplinary research collaboration, and effective scientific communication. Through such initiatives, SAADRI continues to support the development of the next generation of scholars contributing to disaster resilience and sustainable water management.

1.2 Innovation Pitch for Resilient Water Solutions, 09 October 2025

SAADRI successfully hosted the Innovation Pitch for Resilient Water Solutions as a pre-conference event during the IAHS 2025 Conference at IIT Roorkee on 09 October 2025. The event served as a platform for young innovators, researchers, and students to present creative and practical ideas aimed at improving resilience in water systems and disaster-prone environments.

The initiative aligns with SAADRI's broader role as part of the UNDRR–APSTAG Disaster Risk Reduction Innovation Hub network, which promotes the integration of science, technology, and community participation in disaster risk reduction efforts. SAADRI is recognized as one of three Innovation Hubs in Asia under UNDRR–APSTAG, highlighting its leadership in fostering innovation and collaborative research across the region.

The innovation pitch encouraged interdisciplinary thinking and practical solutions addressing water-related risks such as floods, water scarcity, and climate-induced hydrological extremes. By providing a platform

for emerging researchers and innovators to showcase their ideas, SAADRI continues to nurture innovative thinking and strengthen the ecosystem for disaster resilience solutions in South Asia.

5. Participation in School Training Programme on Disaster Awareness, New Delhi, 17–18 November 2025

SAADRI participated as a co-organizer in a school-based disaster awareness training programme held in New Delhi on 17–18 November 2025, in collaboration with the United Nations Office for Disaster Risk Reduction (UNDRR). The training aimed to strengthen disaster preparedness and risk awareness among school communities through interactive learning and participatory activities.

Two resource persons from SAADRI, Ms. Debaleena Roy and Dr. S. Srikrishnan contributed to the programme as facilitators. Both resource persons had previously received training on disaster awareness tools and participatory engagement methods, enabling them to effectively conduct sessions for school participants.

During the training, SAADRI facilitated activities using the Riskland Game, an educational tool developed by UNDRR to promote disaster risk awareness among children through interactive gameplay. The sessions helped students understand different types of hazards, preparedness measures, and the importance of community-level resilience.

The programme emphasized experiential learning and encouraged students to actively engage with disaster preparedness concepts through simulations, discussions, and collaborative exercises. By integrating educational tools such as Riskland, the initiative aimed to make disaster risk reduction accessible and engaging for young learners.

SAADRI's participation as a co-organizer further strengthened its collaboration with UNDRR and reinforced its commitment to promoting disaster awareness and resilience education among younger generations. Such initiatives contribute to building a culture of preparedness and empowering communities to respond effectively to disasters.



Training workshop on "Safe Children, Safe Future: Disaster Awareness"



School Training Programme on Disaster Awareness



Participation in the International Symposium on Disaster Resilience and Sustainable Development (DRSD), Thailand



Social Event at the 7th Global Summit of GADRI, Fort Collins, Colorado, USA, July 2025



6. Participation in the International Symposium on Disaster Resilience and Sustainable Development (DRSD), Thailand, 24-26 November 2025

SAADRI served as an Institutional Knowledge Partner for the 4th International Symposium on Disaster Resilience and Sustainable Development (DRSD 2025), held from 24–26 November 2025 in a hybrid format at the Asian Institute of Technology (AIT), Thailand. The event featured plenary discussions and technical sessions addressing diverse themes related to disaster resilience, risk reduction, and equitable sustainability.

Representing the SAADRI Young Professional platform (SAADRI-YPP), Mr. Md Juel Mia attended the symposium in person, while Dr. Mrinal Saikia and Ms. Archita Mallick participated online, contributing to discussions and knowledge exchange on emerging challenges and innovations in disaster resilience.

In addition, SAADRI expert members, Prof. Deepthi Wikramasinghe (University of Colombo, Sri Lanka) and Prof. Imon Chowdhoree (BRAC University, Bangladesh) also attended the symposium. Their participation further strengthened the presence of the SAADRI network at the event and provided opportunities for collaboration and exchange of ideas among researchers working on disaster resilience in South Asia.

7. Strengthening Regional Collaboration and Knowledge Exchange

During 2025, SAADRI continued to strengthen its role as a regional platform for collaboration among disaster research institutions across South Asia. The alliance expanded its network to over 200 members across 11 countries, reflecting the growing recognition of SAADRI as a key platform for knowledge exchange and collaborative research in disaster risk reduction and climate resilience.

To enhance engagement within the network, SAADRI initiated monthly members' meetings, where members present research, share field experiences, and discuss emerging challenges in disaster risk management and resilience planning. These meetings have created a dynamic platform for interdisciplinary dialogue and cross-regional collaboration.

Through these initiatives, SAADRI continues to strengthen regional cooperation, promote research-driven solutions, and support the development of a resilient and disaster-prepared South Asia.



Critical writing workshop at IAHS Conference



Innovation Pitch at IAHS Conference



Southeast Asia Disaster Prevention Research Initiative (SEADPRI)

University of Kabangsaan Malaysia, Malaysia

<https://www.ukm.my/seadpri>

Universiti Kebangsaan Malaysia's Southeast Asia Disaster Prevention Research Initiative (SEADPRI-UKM) has been in operation since June 2008. Based at the Institute for Environment and Development, the Centre addresses crucial challenges on disaster risk reduction in Malaysia and the region. The research focus is on climatic hazards, geological hazards and technological hazards, with emphasis on capacity building, mainly through post-graduate programmes and specialized training. Transdisciplinary research conducted by the Centre is action-oriented, bridges the science-governance interface and provides pathways for disaster prevention. In 2016, SEADPRI-UKM was acknowledged by the Integrated Research on Disaster Risk Programme (IRDR), jointly sponsored by International Science Council (ISC) and the United Nations Office for Disaster Risk Reduction (UNDRR), as an IRDR International Centre of Excellence (ICoE) for Disaster Risk and Climate Extremes (ICoE-SEADPRI-UKM). Globally, SEADPRI-UKM now sits with a group of 16 institutions with similar recognition, representing various regions. The focus of ICoE-SEADPRI-UKM is to strengthen local input for addressing regional disaster risks in conjunction with national and international partners. A major flagship is the Asian Network on Climate Science and Technology (ANCST), coordinated by SEADPRI-UKM and funded by the Cambridge Malaysian Education and Development Trust, to link disaster risk reduction and climate change for building resilience in the region.

SEADPRI-UKM is a Cooperating Organization and Advisory Group Member to Coordinating Committee for Geoscience Programmes in East and Southeast Asia (CCOP), intergovernmental organisation that facilitates and coordinates the implementation of geoscience programmes. In partnership with U-INSPIRE Malaysia and Young Earth Scientists (YES) (Malaysian Chapter).

The U-INSPIRE Malaysia Network was launched and joins the U-INSPIRE Alliance which includes,

among others, chapters from Indonesia, Philippines, Nepal, India and Pakistan. U-INSPIRE is a youth and young professionals' platform in Science, Engineering, Technology and Innovation (SETI) to accelerate the implementation of disaster risk reduction (DRR) in line with the Sendai Framework to support DRR policies and action at the local, national and international level. U-INSPIRE Malaysia platform will bring together motivated, ambitious, and committed youth and young professionals in DRR and climate change, especially in empowering the science-policy interface. Our activities are published biennially in the newsletter Buletin SEADPRI. It contains articles on a regional and national scale in holistic and integrated approach in disaster risk reduction (science, technology, innovation, impact, vulnerability and governance) to reduce risk of climatic hazards, geological hazards and technological hazards. Available at https://www.ukm.my/seadpri/?page_id=1471



Dr. Nurfashareena Muhamad
Head; and Research Fellow

E-mail: seadpri@ukm.edu.my

Key research achievement include the following:-

- § ICoE Status Renewal:** Successfully maintained its status as the **IRDR International Centre of Excellence (ICOE)** for Disaster Risk and Climate Extremes, with the renewal formally confirmed on July 9, 2025, validating its sustained contribution to regional disaster risk science.
- § National Disaster Risk Reduction Policy 2030:** Supported the latest drafting and launching of the **Dasar Pengurangan Risiko Bencana Negara (Dasar DRR) 2030** (National Disaster Risk Reduction Policy 2030) on October 3, 2024, in collaboration with NADMA.
- § Disaster Risk Reduction Education Module:** Contributed to the launch of the **Modul Pendidikan Pengurangan Risiko Bencana** (Disaster Risk Reduction Education Module) for the Ministry of Education Malaysia (KPM) on October 27, 2025, a project funded by UNICEF.
- § COFAR Challenge 2025:** Co-organized the **Coastal Flooding Adaptation & Resilience (COFAR) Challenge 2025** in partnership with the Securities Commission Malaysia and others, engaging university students to design innovative flood mitigation solutions for coastal areas like Carey Island.
- § DBAR-DISASTER Engagement:** Continued active engagement in the **Digital Belt and Road (DBAR) Working Group on Disaster Risk Reduction (DBAR-DISASTER)**, contributing to the integration of Big Earth Data and AI for enhanced early warning and risk assessment.
- § The 61st CCOP Annual Session:** Represented as a Cooperating Organization at the **61st CCOP Annual Session** (Vientiane, Lao PDR, November 2-6, 2025) to strengthen regional geoscience cooperation on issues like geohazards and climate change adaptation.
- § Webinars on IPCC AR7 Author Nominations:** Convened a series of international webinars in April 2025 to assist experts from Asia and the Southwest Pacific Islands with the process for **IPCC Seventh Assessment Report (AR7) Author Nominations**.
- § FGD on Imported Waste:** Organized a Focus Group Discussion (FGD) on the **Kesan Alam Sekitar dan Kesihatan Awam daripada Pemprosesan Sisa Import di Kuala Langat, Selangor** (Environmental and Public Health Impacts from the Processing of Imported Waste) on January 16, 2025.
- § ASEAN Sea Level Rise Workshop:** Participated in the **ASEAN Sea Level Rise Workshop** (Kuala Terengganu, June 11-12, 2025) under Malaysia's ASEAN Chairmanship, focusing on coordinated regional action against rising sea levels.



The Kuala Lumpur Multi-Hazard Platform Featured at Global Platform for Disaster Risk Reduction 2025 (GPDRR 2025)



National Science and Technology Center for Disaster Reduction (NCDR), Chinese Taipei

<https://www.ncdr.nat.gov.tw/>



Opening Ceremony of ITW 2025

The **2025 International Training Workshop (ITW) on Disaster Risk Reduction Innovation: Digitalized Disaster Governance in the AI Era** was held in Taipei, Taiwan, from October 28 to October 31, 2025. Organized by the National Science and Technology Center for Disaster Reduction (NCDR), the workshop brought together 60 experts, scholars, and practitioners from 14 countries to exchange knowledge and practical experiences on emerging technologies for disaster risk reduction.

In recent years, the global community has faced increasingly frequent and severe natural hazards, including typhoons, floods, earthquakes, and landslides. These challenges are intensified by climate change, rapid urbanization, and growing interdependencies among critical infrastructures. As disaster risks become more complex and interconnected, traditional disaster management approaches are no longer sufficient. Instead, advanced digital technologies—such as Artificial Intelligence (AI), Big Data analytics, Internet of Things (IoT), remote sensing, and large-scale computing—are playing an increasingly important role in supporting smarter and more adaptive disaster governance.

Against this backdrop, the 2025 ITW aimed to strengthen participants' understanding of how smart technologies can enhance disaster resilience and support evidence-based decision-making. At the same time, the workshop provided a valuable platform for international collaboration and cross-sector dialogue among government agencies, research institutions, international organizations, and NGOs working in disaster risk reduction.

The four-day in-person program featured a diverse agenda, including keynote lectures, thematic sessions, technical discussions, and field visit. Leading experts from around the world were invited to share their insights and experiences.



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Distinguished keynote speakers included representatives from the National Taiwan University, the U.S. Center for Excellence in Disaster Management and Humanitarian Assistance, the Pacific Disaster Center, the National Disaster Management Research Institute of Korea, the International Research Institute of Disaster Science of Tohoku University, Taiwan Buddhist Tzu-Chi Foundation, and the Nvidia Corporation. Their presentations addressed major topics such as AI applications in disaster risk reduction, climate-resilient urban development, and digital transformation in emergency management.

Thematic sessions explored a wide range of technical issues, including machine-learning-based earthquake impact assessment, AI-assisted weather pattern recognition, prediction of extreme rainfall events, and the development of smart early warning systems for floods and landslides. Other discussions focused on big data analytics for understanding social vulnerability, population movement analysis during emergencies, and the integration of IoT-based sensing networks into disaster monitoring systems.

A central theme of the workshop was the importance of integrating the entire disaster governance information chain—from environmental monitoring and hazard detection to risk assessment, early warning, and decision support. Speakers emphasized that AI and data-driven technologies can significantly improve the speed and accuracy of disaster analysis. However, they also highlighted the importance of high-quality data, transparent modeling, and user-friendly decision-support interfaces to ensure that technological innovations can be effectively applied in real-world disaster management contexts.

The organizer, NCDR, continues to advance digital disaster governance by developing a service-oriented framework that includes “Data as a Service,” “Model as a Service,” and “Computing as a Service.” This approach aims to strengthen the connection between monitoring, modeling, and decision-making processes while promoting collaboration among central and local governments as well as international partners. The workshop also emphasized the importance of adapting technologies to local contexts and translating scientific knowledge into practical action plans for disaster resilience.

Overall, the 2025 International Training Workshop demonstrated Taiwan’s commitment to promoting international cooperation in disaster risk reduction and sharing its scientific and technological capabilities with the global community. By bringing together experts from diverse disciplines and countries, the event fostered meaningful exchanges of knowledge and experiences. Since 2016, NCDR and GADRI have collaborated on disaster risk reduction training, strengthening international cooperation in this critical field. On the recommendation of GADRI, a master’s student from Kyoto University in Japan, originally from Peru, participated in this training workshop and demonstrated both a strong background in disaster studies and excellent learning capacity.

More Information about the ITWs over the years: <https://www.ncdr.nat.gov.tw/Message?itemid=78&mid=95>



Visit to NCDR and presentation of certificates of 2025 ITW



Asian Disaster Preparedness Center (ADPC)

Thailand

<https://www.adpc.net>



Photo1 - Strategic Meeting between ADPC and SAARC Secretariat, Kathmandu

The year 2025 marked a period of significant progress and strategic impact for the Asian Disaster Preparedness Center (ADPC) in advancing disaster risk reduction (DRR), climate resilience, and sustainable development across the Asia Pacific region and beyond. With renewed emphasis on evidence, accountability, technical excellence, and regional partnerships, ADPC's work in 2025 strengthened institutional capacities, informed policy priorities, delivered community level resilience outcomes, and catalyzed sector wide collaboration for disaster preparedness and climate adaptive development, with a focus on strategy 20230.

The Urban Resilience Thailand Project (URBAN) (2024–2028) advanced significantly in 2025, deepening its technical scope and institutional engagement in the provinces of Chiang Rai and Surat Thani. During the reporting year, the project strengthened the integration of nature-based solutions (NbS) and advanced climate risk analytics into subnational planning frameworks, ensuring that local development pathways are informed by robust hazard, exposure, and vulnerability assessments.

Building on participatory risk assessment methodologies, URBAN localized climate projections and multi hazard analyses to generate actionable evidence for municipal authorities. These analytics were translated into decision-support tools and policy guidance tailored to provincial

and city level planning processes. Particular emphasis was placed on aligning resilience measures with ecosystem-based approaches, such as watershed restoration, green infrastructure, and floodplain management, to reduce disaster risk while delivering co-benefits for biodiversity, water security, and community livelihoods.

Under the NDC technical assistance for Kazakhstan project, ADPC advanced substantive progress in strengthening national capacities for forest carbon stock assessment, greenhouse gas (GHG) inventory development for the LULUCF sector, and emissions mitigation analysis throughout 2025. The project has

successfully operationalized remote sensing and Geographic Information System (GIS) methodologies to generate spatially explicit forest biomass and carbon stock data, enhancing the accuracy and transparency of Kazakhstan's land-use sector reporting. A core milestone this year was the development and application of Marginal Abatement Cost Curves (MACCs) for key industrial sectors, providing decision-makers with a prioritized, cost-effective assessment of potential emission reduction options. Through targeted technical workshops and hands on analytics, the project has equipped relevant government agencies and technical institutions with tools and methodological approaches that strengthen evidence-based climate planning, facilitate informed policy dialogue on low carbon development pathways, and support Kazakhstan's long-term climate mitigation commitments.



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Last year, ADPC marked a significant institutional milestone with the establishment of its first international training center outside Thailand, the Osong–ADPC International Disaster Resilience Center in Osong, Chungcheongbuk–do Province, Republic of Korea. Established in partnership with the Government of the Republic of Korea, the Center represents the culmination of sustained collaboration fostered through the ADPC Knowledge Academy and reflects growing regional demand for structured, high quality capacity development in disaster risk management.

Envisioned as a regional hub for East Asia and beyond, the Center is designed to strengthen disaster resilience through advanced training, applied research, and multi stakeholder engagement. It will serve as a platform for practical learning, technical exchange, and joint programme delivery among government agencies, academic institutions, civil society organizations, and resilience practitioners. Programmatically, the Center focuses on disaster risk reduction and climate adaptation, emergency preparedness and response systems, community-based resilience approaches, and policy and institutional capacity strengthening. By institutionalizing knowledge transfer and fostering international cooperation, the Osong–ADPC Center contributes to enhancing regional preparedness, supporting evidence-based decision making, and advancing a safer and more resilient future across the region.

In 2025, the ADPC Knowledge Academy delivered a comprehensive portfolio of capacity development programmes, conducting over 20 specialized training courses that collectively engaged more than 200 professionals from over 35 countries across Asia, the Pacific, and other regions. These trainings were delivered through a combination in-person, hybrid, and online modalities, ensuring broad accessibility while maintaining a strong emphasis on technical rigor and applied learning. The courses addressed a wide spectrum of priority themes aligned with global and regional resilience agendas. Key areas included: strengthening climate and disaster resilience in the rural road sector; disaster risk management (DRM) and GIS applications; urban resilience and environmental management; nature based solutions (NbS); light urban search and rescue (LUSAR); financing for disaster and climate resilience; climate change impacts on water supply systems and adaptive technologies; gender equality, disability, and social inclusion (GEDSI) in DRR; resilient construction and site management; multi-hazard impact based forecasting and early warning systems; climate data analysis and interpretation; DRM for sustainable development; integrated flood risk management in a changing climate; and monitoring and evaluation (M&E) frameworks for DRR initiatives.

Each programme combined conceptual foundations with case-based learning, technical simulations, field exposure, and peer exchange, enabling participants to translate knowledge into operational practice within their respective institutional contexts. By fostering interdisciplinary dialogue and equipping practitioners with actionable tools, the ADPC Knowledge Academy continues to serve as a regional hub for professional excellence, strengthening institutional capacities and advancing inclusive, evidence-based resilience building worldwide.

The ASEAN–UK Green Transition Fund (GTF) on Nature-based Solutions (NbS) Models and Monitoring; Financing for NbS Research and Development, implemented by a consortium together with ADPC represents a strategic regional initiative to accelerate high integrity NbS across ASEAN Member States and Timor Leste. The project advances a dual track approach with NbS Tools and Monitoring, Reporting, and Verification (MRV) framework. The enhanced tool integrates advanced geospatial datasets—including forest degradation, biomass, biodiversity habitat modelling, climate induced disaster risk layers, and socio-economic vulnerability indicators—supported by Geo AI-enabled analytics to improve feasibility screening, automated documentation, and impact assessment. By embedding Gender Equality, Disability, and Social Inclusion (GEDSI) principles throughout project design and monitoring, the initiative strengthens inclusive participation and equitable benefit-sharing, positioning ASEAN as a regional leader in biodiversity-positive and climate-resilient development pathways.

The projects implemented in three target countries, Indonesia, Cambodia and Philippines, serve as real-world testbeds to validate the upgraded NbS Tool, MRV framework, and inclusive incubation model, while strengthening institutional capacities across ASEAN through targeted training, knowledge exchange, and policy engagement. Collectively, these integrated interventions contribute to enhanced regional coordination, improved technical standards for NbS implementation, and a strengthened enabling environment for scaling climate mitigation, adaptation, and biodiversity outcomes in support of ASEAN's long-term green transition objectives.

These achievements and resources highlight ADPC's dedication to advancing disaster preparedness, climate resilience, and social inclusion across Asia. For additional details on ADPC's 2025 activities, events, and publications, please visit the [Asian Disaster Preparedness Center](#) and also refer to the annual report [Annual Report](#)

Japan



Japan and Oceania

Japan	Research Center for Regional Disaster Prevention and Mitigation, Akita University
Japan	Asian Disaster Reduction Center (ADRC)
Japan	Center for Disaster Management Informatics Research, Ehime University
Japan	International Centre for Water Hazard and Risk Management (ICHARM) under the auspices of UNESCO
Japan	International Consortium on Landslides (ICL)
Japan	Institute of Education, Research and Regional Cooperation for Crisis Management, Shikoku (IECMS), Kagawa University
Japan	Research and Education Center for Natural Hazards, Kagoshima University
Japan	Institute of Nature and Environmental Technology, Kanazawa University
Japan	Research Center for Social Safety Science, Faculty of Safety Science, Kansai University
Japan	Research and Development Center of Fire and Environmental Safety (RDFES), Center for Disaster Countermeasures (CDC), The University of Kitakyushu
Japan	Research Center for Urban Safety and Security (RCUSS), Kobe University
Japan	Disaster Nursing and Global Nursing section of Fundamental Nursing, Kobe City College of Nursing
Japan	Implementation Research and Education System Center for Reducing Disaster Risk (IRESC), Kumamoto University
Japan	Institute of Disaster Area Revitalization, Regrowth and Governance (IDiARRG), Research Institute for Disaster Area Reconstruction, Kwansei Gakuin University
Japan	Disaster Prevention Research Institute (DPRI), Kyoto University
Japan	Graduate School of Global Environmental Studies (GSGES), Kyoto University
Japan	Disaster Risk Reduction Research Center, Faculty of Engineering, Kyushu University
Japan	Research Institute for Applied Mechanics (RIAM), Kyushu University
Japan	Center of Environmental Science and Disaster Mitigation for Advanced Research (CEDAR), Muroran Institute of Technology
Japan	Advanced Disaster Prevention Engineering Center (ADPEC), Nagoya Institute of Technology
Japan	Disaster Mitigation Research Center (DMRC), Nagoya University
Japan	National Research Institute for Earth Science and Disaster Resilience (NIED)
Japan	Research Institute for Natural Hazards & Disaster Recovery, Niigata University
Japan	Research Initiative for Natural Disaster Prevention of Oil and Gas Spill in Industrial Parks, Graduate School of Engineering, Osaka University
Japan	Graduate School of Human Sciences, Faculty of Human Sciences, Osaka University
Japan	Frontier Research Center for Natural Disaster Mitigation, Ritsumeikan University
Japan	Institute of Disaster Mitigation for Urban Cultural Heritage (R-DMUCH), Ritsumeikan University
Japan	Disaster Prevention Research Center for Island Regions, University of the Ryukyus
Japan	International Research Institute of Disaster Science (IRIDeS), Tohoku University
Japan	Center for Urban Earthquake Engineering (CUEE), Tokyo Institute of Technology
Japan	Earthquake Research Institute (ERI), The University of Tokyo



Asian Disaster Reduction Center (ADRC)

Japan

<https://www.adrc.asia/>



Asian Conference on Disaster Reduction 2025

Forging Resilience Together: Toward a Sustainable Society Prepared for Mega-Disasters

Tokyo, Japan , 17-18 December 2025

In collaboration with the Cabinet Office Government of Japan, the Asian Disaster Reduction Center (ADRC) organized the Asian Conference on Disaster Reduction (ACDR2025), 17-18 December 2025 in Tokyo, Japan. With the theme, “Forging Resilience Together: Toward a Sustainable Society Prepared for Mega-Disasters”, the event gathered 131 onsite attendees from 19 member countries as well as from international organizations, research institutions, NGOs and private sector. Additionally, 82 participants attended the conference online.

Four sessions were organized to gain insights on how to forge resilience together: a panel discussion on building resilience to mega-disasters; a roundtable on national disaster risk reduction progress and challenges; a session on technological innovation; and a session on inclusive disaster risk reduction.

In the panel discussion on “Building Resilience to Mega-Disasters for Sustainable Growth”, five panelists (Dr ITO Shigeru, ADRC; Dr MURATA Masahiko, KUIS-Japan; Dr Muzailin Affan, USK-Indonesia; Dr Netra Prakash Bhandary, Ehime University; and Ms ISHIGAKI Kazuko, UN-Habitat) affirmed that this endeavor

requires longer timeline and sustained commitment. According to Dr OGAWA Yujiro (ADRC), moderator of the discussions, “There is no single approach to build resilience for all. Plans, programs, and policies to promote resilience building shall incorporate local factors and realities, such as culture, geography , and demography.” A total of 18 statements were delivered at the Roundtable on “National DRR Progress and Challenges”. Of this, 15 were from member countries (Armenia, Bhutan, Brunei Darussalam, Cambodia, Fiji, Japan, Republic of Korea, Malaysia, Maldives, Myanmar, Papua New Guinea, Philippines, Singapore, Thailand, and Viet Nam) and 3 from partner organizations (ASEAN Secretariat, ADPC, and UNESCAP). The statements recommended programmatic actions directed toward strengthening knowledge exchange and information sharing, embracing technological innovations, and enhancing partnerships with the private sector.



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Mr KITA Katsuhiko (Cabinet Office, Government of Japan), who moderated the session, further suggested adopting new ideas and assumptions to tackle changing nature of risks; strengthening international cooperation; enhancing capacity building; applying effective mechanisms and technologies; adopting long-term perspective on DRR; and speeding up the implementation of the Sendai Framework for Disaster Risk Reduction.

In the session on “Technological Innovations for Disaster Resilience”, seven experts (Mr NEGORO Satoshi, Spectee Inc.; Mr NAGAISHI Takaki, Synspective Inc.; Mr OKAMOTO Atsushi, Asia Air Survey Co., Ltd.; Dr Nuraini Rahma Hanifa, BRIN Indonesia; Dr KAWAKITA Shiro, JAXA; Ms So Byung Im, MOIS, Republic of Korea; and Ms Jennyline Fan, SCDF Singapore) introduced technological innovations, such as AI-based forecasting, smart sensors, geospatial risk platforms, space-based applications, and multi-hazard early warning systems that contribute to advancing disaster resilience in complex and high-risk environments. Dr Mandira Singh Shrestha (Water Center 21 Pahal, Nepal), who moderated the session, suggested that member countries should learn more about new technological innovations through their networks and apply those suited in their respective local situations.

In the session “Societal Foundations for Inclusive DRR” five experts (Ms Dam Thi Hoa, VNDDMA Viet Nam; Mr Hisan Hassan, NDMA Maldives; Mr Lawrence Anthony Dimailig, AHA Centre; Ms Setsuko

SAYA, OECD Development Centre; and Prof Orhan Tatar, AFAD Türkiye) shared experiences and initiatives across Asia that empower women, youth, and marginalized groups by promoting fairness in educational systems, equitable policies, and participation in community activities – as these constitute the societal foundations for inclusive DRR. Prof. Bambang Rudyanto (Wako University, Japan), who moderated the session, concluded that “Inclusive DRR requires coordinating before disasters, empowering communities, translating policy into action, and leaving no one behind”.

Mr Sasahara Akio (ADRC) wrapped up the two-day sessions with the question, “What can we do together to forge resilience”? He emphasized three actions for moving forward: i) speed up the national implementation of the Sendai Framework for Disaster Risk Reduction; ii) apply technological innovations that suit local situations; and iii) ensure that national and local disaster risk reduction plans/programs are inclusive, such as by having disaggregated data as basis. According to Prof. MIURA Fusanori (ADRC), the conference achieved the following: 1) It provided useful information for planning the future activities of ADRC and member countries. 2) It provided an avenue to strengthen emergency preparedness and response measures through science, technology, and communications, and 3) It served as platform for sharing knowledge, strengthening trust, and inspiring collaborative action towards safer and more resilient Asia.

Webinar on Climate Change Projection with Malaysia

In the 4th Webinar Series on Climate Change Projection for Disaster Risk Reduction in Asia Pacific Region with Malaysia, 27 February 2025, Dato’ Ir Mohd Zaki bin Mat Amin (Director General, National Water Research Institute Malaysia) reported that by 2100, climate change in Malaysia is projected with increase in: (i) annual surface temperature between 1.85°C – 2.08°C, (ii) annual rainfall between 14% – 25%, and (iii) sea level rise between 0.71m – 0.74m. These figures imply that if Malaysia does nothing to mitigate climate change, its regions will experience more occurrences of drying rivers (e.g., Bukit Merah in February 2022), pluvial flooding (e.g., Selangor, December 2022), and fluvial flooding (e.g., Batu Pahat, August 2021).

In view of this projection, other speakers from Malaysia shared information on some ongoing initiatives. Mr Ambun Dindang (Deputy Director General, Malaysian Meteorological Department) said that his department considered climate change projection data in monitoring and forecasting severe weather due to monsoon surges. Ms Lavanya Rama Iyer (Director of

Policy and Climate Change, WWF-Malaysia) said that the World-Wide Fund for Nature in Malaysia has integrated climate resilience and governance in their programmes. Gs. Dr Norfashareena binti Muhamad (Head, Southeast Asia Disaster Prevention Research Initiative) said that their disaster databases integrated climate change data and made it available for local scale application. Furthermore, Dato’ Ir Mohd Zaki bin Mat Amin said that the Government of Malaysia expects two relevant documents in 2025 – the Climate Change Act of Malaysia and the Malaysia National Adaptation Plan (MyNAP).

Members of the Area Theme 4 of the Advanced Study of Climate Change Projection (SENTAN) also spoke in the webinar to explain the project, the technologies and tools, and the studies on climate change projections. The speakers included Prof. MORI Nobuhito of Kyoto University, Dr NAKAEGAWA Toshiyuki of Japan Meteorological Agency, Dr MURATA Akihiko of Japan Meteorological Agency, Mr MORI Noriyuki of International Center for Water Hazard and Risk Management, and Prof. TACHIKAWA Yasuto of Kyoto University. Dr Makoto Ikeda and Dr Gerald Potutan, both from ADRC, co-facilitated the event.

The Promotion of GLIDE: collaboration with partners
 ADRC has been promoting the GLIDE (Global disaster IDentifier) initiative since 2001 in partnership with various DRR stakeholders to facilitate disaster information linkages at the global level.

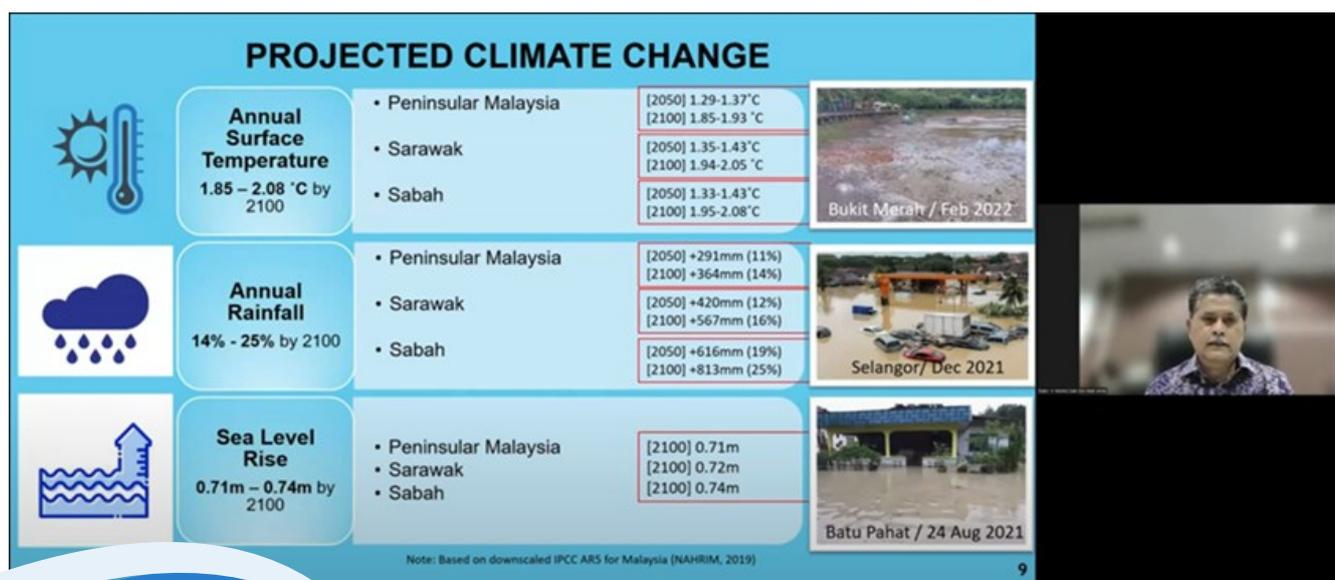
In 2025, several meetings took place including a Steering Committee meeting and Sub-Committee and Joint Sub-Committee meetings. The GLIDE Joint Sub Committee meeting was held on 4 June 2025 in Geneva, Switzerland, on the sidelines of the 8th Global Platform for Disaster Risk Reduction (GP2025). The GLIDE Steering Committee comprises three sub-committees: API, New Product Development, and SOPs. The purpose of this joint meeting was to discuss the future development of tools. In a hybrid format, nine members including ADRC, CRED EM-DAT, Joint Research Center (JRC)/EC, International Displacement Monitoring Center (IDMC), Tohoku University, UNDP and WMO, engaged in a technical discussion regarding the benefits and challenges of the tool development. The participants agreed to work together toward the completion of these tools by upcoming Steering Committee meeting scheduled in June and to continue meeting periodically thereafter.

The ninth SC meeting took place on 11 June 2025. A total of 14 members from 6 organizations, including ADRC, JRC/EC, Internal Displacement Monitoring

Centre (IDMC), IFRC, Tohoku University, UNOCHA, WMO participated in the meeting. After the updates on from participants, Mr Julio Serje summarized the results of the above-mentioned Joint Sub Committee meeting, featuring development of new GIS capabilities of the system.

Subsequently, a special guest, Dr. Virginia Murray, Head of Global Disaster Risk Reduction, UK Health Security Agency, presented a summary of the HIPs process, stating that working with the GLIDE initiative is a privilege for her. She presented the revised list of hazards included in the system, noting the relationship between the GLIDE hazard list and many of the HIPs. The participants then exchanged views on the relationships among HIPs, GLIDE, and their own datasets.

Following the discussion at the ninth SC meeting, a meeting of the Sub Committee for New Product Development was held online on 14 October 2025. The objective of the meeting was to discuss the adoption of HIPs within the GLIDE initiative. Reflecting the strong interest among GLIDE members, a total of 18 participants joined from ADRC, CRED EM-DAT, EC/JRC, Tohoku University, UNDP, and UNDRR. The participants exchanged various views on the benefits and challenges of adopting HIPs into GLIDE and agreed to continue the discussion in subsequent SC meetings.





International Centre for Water Hazard and Risk Management under the auspices of UNESCO (ICHARM), Japan

<http://www.icharm.pwri.go.jp/>



ICHARM's real-time snow analysis platform wins Judges' Special Award from NEDO*

A research team at ICHARM received the Judges' Special Award in the "NEDO Challenge, Satellite Data for Green Earth" category of the NEDO Prize for New Industrial and Innovative Technologies for fiscal year 2024. This prize is a contest-type, prize-funded research and development program that aims to uncover breakthrough ideas that can address future social challenges and foster new industries. ICHARM proposed the development of an analysis platform that physically calculates and identifies the quantities of snowfall, snow cover, and snowmelt in real time by integrating and analyzing satellite observation data (GSMaP precipitation data, MODIS leaf area index, and snow coverage data), ground observation data, and numerical weather model output (reanalysis data) on the Data Integration and Analysis System (DIAS). The prize committee awarded the ICHARM team in recognition of the significant potential of their proposed technology to address future challenges by utilizing satellite data.

* NEDO: New Energy and Industrial Technology Development Organization

https://www.pwri.go.jp/icharm/publication/newsletter/pdf/icharm_newsletter_issue76.pdf#page=3

Long-Term Contribution Award presented by UNESCO

In 2025, UNESCO marks two major milestones: the 60th anniversary of the International Hydrological Decade (IHD) and the 50th anniversary of the International Hydrological Programme (IHP). To commemorate these occasions, UNESCO hosted a series of celebratory events in Paris, France, from June 10 to 13. During the main event on June 11, ICHARM was honored on stage with a commemorative plaque in recognition of its longstanding global contributions to research, education, and information networking as a UNESCO Category II Centre since its establishment.



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East and South Africa Flood and Drought Countermeasures Training Program in Japan

The “East and South Africa Flood and Drought Countermeasures Training Program in Japan” was conducted on August 25-29, 2025, as part of the “Knowledge Exchange on Flood and Drought Management between South Sudan and Japan,” a project commissioned by the World Bank (WB). Its purpose was to provide an opportunity for South Sudanese government officials to gain an overview of science and technology for flood and drought monitoring, forecasting, and warning and strengthen their foundational capacity for developing flood and drought early warning systems. A total of 19 participants attended from five African countries - South Sudan, Malawi, Comoros, Madagascar, and Mozambique - along with representatives from the Nile Equatorial Lakes Subsidiary Action Program (NELSAP) and WB.

https://www.pwri.go.jp/icharm/publication/newsletter/pdf/icharm_newsletter_issue78.pdf#page=21

Outreach and Educational Activities Across Japan Using the Virtual Flood Experience System

ICHARM is developing a platform system to support the assessment of water-related disaster risks and resilience. This system enables businesses to estimate potential damages from future water-related disasters by combining hazard information with their own data. It also supports their efforts to strengthen disaster resilience by calculating the cost-effectiveness of the damage-control measures they plan to implement. In addition, ICHARM is developing and implementing the Virtual Flood Experience System (VFES), which allows people to experience flooding virtually and learn how to act during such events. Overall, ICHARM is making steady progress toward building a society in which people regard floods and other water-related disasters as personal concerns and are fully aware of the importance of taking preventive actions to minimize damage.

https://www.pwri.go.jp/icharm/publication/newsletter/pdf/icharm_newsletter_issue79.pdf#page=15

Special Session “Making Africa More Resilient to Hydro-Climatic Extremes” at IWRA’s XIX World Water Congress in Marrakech

On December 1, ICHARM, the UNESCO Intergovernmental Programme (IHP), and the World Bank (WB) organized a special session entitled “Making Africa

More Resilient to Hydro-Climatic Extremes” at the 19th World Water Congress of the International Water Resources Association (IWRA) in Marrakech, Morocco. The session aimed to share the achievements of various resilient projects in Africa and foster collaboration among relevant stakeholders.

https://www.pwri.go.jp/icharm/publication/newsletter/pdf/icharm_newsletter_issue79.pdf#page=9

Onsite training under the UNESCO Ghana Project

ICHARM has been conducting an assignment “Development of an Integrated Early Warning System for water-related hazards in Ghana” in collaboration with the University of Tokyo. As part of this assignment, in November 2025, ICHARM visited Accra, the capital city of Ghana, and provided a training program for officials from Ghanaian agencies responsible for meteorology, hydrology, and disaster management using the Integrated Early Warning System (IEWS) for floods and droughts developed by ICHARM and the University of Tokyo for the lower Volta River basin. The participants actively engaged in the training. During the discussion, the project team collected a wide range of valuable feedback, including specific requests regarding the system’s display functions, suggestions for follow-up training, requests for advanced training on meteorological and hydrological modeling, and ideas for future research and training collaboration. The training participants were required to take an online examination later, and 16 participants successfully passed it.

https://www.pwri.go.jp/icharm/publication/newsletter/pdf/icharm_newsletter_issue79.pdf#page=23

Training of Experts in Malindi, Kenya

ICHARM supported the delivery of the “Training of Experts” program held in Malindi, Kenya, on December 9-11, 2025, for local experts from various water management organizations across the country, in collaboration with the UNESCO Regional Office for Eastern Africa. The program was organized by four Kenyan experts who completed the Training of Facilitators program in Japan in October 2025. A total of 27 participants from 16 offices across 12 organizations comprehensively learned about strengthening flood resilience through the program comprising keynote lectures, system demonstrations, examinations, hands-on training, and the presentation of certificates.

https://www.pwri.go.jp/icharm/publication/newsletter/pdf/_newsletter_issue79.pdf#page=25

UNESCO

Intergovernmental Programme (IHP), and the World Bank (WB) organized a special session entitled “Making Africa



Institute of Education, Research and Regional Cooperation for Crisis Management, Shikoku (IECMS), Kagawa University, Japan

http://www.kagawa-u.ac.jp/iecms_english/



On October 1st, the head of the organization underwent a personnel transfer. Below is the greeting message.

I am Kazuya Akimitsu, and I was appointed as the Director of the Shikoku Crisis Management Education, Research, and Regional Collaboration Promotion Organization from October 2025. The "Shikoku Crisis Management Education, Research, and Regional Collaboration Promotion Organization" at Kagawa University aims to support the safety and security of local communities by promoting education and research on disaster prevention and mitigation, and to return the results to the local and international society.

In our daily lives, the term "crisis" may bring to mind direct crises caused by extreme natural phenomena such as earthquakes, typhoons, and snow disasters. However, with the progression of global warming, we are also concerned about the expansion of crises that are close to us in daily life, continuous, and irreversible, such as global fluctuations in food resources due to changes in ecosystems. Additionally, crises can include economic crises, crises related to the natural environment, pandemic crises, and international crises caused by frictions with other countries. The essence of "crisis management" is to

anticipate such diverse crises around us, study preventive measures, responses immediately after occurrence, and recovery and reconstruction, and to implement countermeasures.



Of course, it is also essential to flexibly respond to changes in social conditions. For that purpose, there is a need for the development of personnel who can practice accurate and optimal crisis management as well as pioneering and collaborative research and development with other institutions. This organization has two centers: the "Advanced Crisis Management Education and Research Center" and the "Regional Resilience Research Center." It practices the development of advanced educational programs, the training of highly skilled personnel using these programs, and cutting-edge resilience science (disaster mitigation chemistry) research, responding to various needs from multiple perspectives. We will continue to strengthen our role as an educational and research base for disaster prevention and mitigation in Kagawa Prefecture, which serves as a disaster response hub in Shikoku. We sincerely ask for your continued support and cooperation in the future.

<https://www.kagawa-u.ac.jp/iecms/hello/>

Kagawa University has produced a disaster prevention song titled "Don't Be Afraid if You're Prepared" with the aim of raising disaster awareness among the prefecture's residents. The content is designed so that everyone, from children to the elderly and even visually impaired individuals, can easily and enjoyably learn what is important during a disaster.

On Simeul Island, which was close to the epicenter and hit by a massive tsunami during the 2004 Sumatra earthquake, fortunately, there were not many casualties. There, disaster prevention songs have been passed down through generations, and inspired by that tradition, the concept for creating this disaster prevention song was developed. The lyrics were written by Yoshiyuki Kaneda, a special-appointed professor at Kagawa University and a seismology expert, the music was composed by Milly Rise, a staff member of the same university, and the performance is carried out by 'Sonaelz,' consisting of volunteer staff members and disaster prevention kids. On March 11, 2025, it will be 14 years since the Great East Japan Earthquake.

Because this is Kagawa Prefecture, which is said to experience few disasters, Kagawa University aims to once again foster and improve disaster prevention awareness among the prefectural residents and promote the dissemination of this disaster prevention song.

<https://www.kagawa-u.ac.jp/32824/>



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Center for Disaster Countermeasures (CDC) The University of Kitakyushu, Japan

<http://www.env.kitakyu-u.ac.jp/ja/shoubou/>

The Center for Disaster Countermeasures has been actively disseminating knowledge on the environmentally friendly firefighting agent developed by a joint venture of the Kitakyushu City Government, private companies, and the University of Kitakyushu. This natural, soap-based firefighting agent enhances firefighting efficiency, reduces water use, and minimizes environmental and ecological impacts. This soap-based firefighting “Miracle Foam” is classified as a Class A firefighting agent for use in fires involving ordinary solid combustibles such as paper, wood, cloth, and some plastics.

1. Aerial firefighting research

Development of effective tactics for using environmentally friendly firefighting agents to address wildfires is also ongoing. In recent years, forest fires have become more severe and larger in scale, calling for the development of effective and efficient firefighting methods. In 2025, our research team won a research grant by the Fire and Disaster Management Agency, Government of Japan, and conducted research on aerial firefighting using firefighting foam. This tactic is considered effective but rarely been used in Japan due to concerns about the environmental impact. This research aimed to establish a new aerial firefighting strategy using environmentally friendly firefighting foam. The study optimized aerial-spraying conditions, established effective firebreak formation, and quantitatively evaluated fire-prevention effectiveness by combining these techniques. The technology used in this project is unique and originates from Kitakyushu, leveraging the results of nearly a quarter century of industry, academia, and government collaboration in Kitakyushu, led by Prof Kawano Tomonori and Prof Uezu Kazuya.

2. Annual seminar

Our center held the seventh annual seminar on this firefighting agent on February 5, 2025. Unfortunately, an on-site event in the Hibikino Campus of the University of Kitakyushu, where an environmentally friendly firefighting agent would be sprayed from a new fire engine on simulated fire targets, was canceled due to unexpected snow accumulation. The seminar

became fully online, and more than 200

firefighters and experts from around 126 fire departments across Japan participated.

Prof. Uezu Kazuya lectured on the scientific theory of



YouTube video of the soap-based firefighting agent seminar on 5 February 2025.

extinguishing fire and how this firefighting agent improved heat removal efficiency. Prof. Kawano Tomonori then gave a lecture from a biological perspective. He explained the history of using firefighting agents in wildfires and the dilemma of using persistent chemicals in nature. He then defined the criteria for environmentally friendly firefighting agents and explained the difference between natural, soap-based, and synthetic firefighting agents. The soap-based firefighting agents quickly lose their toxic effects on small aquatic creatures once mixed into natural water.

Shabondama Soap Co., a Kitakyushu-based natural soap company, then introduced the process of producing this environmentally friendly firefighting agent through an online visit to its factory. The firefighters from the Kitakyushu Fire and Disaster Management Bureau then presented their points from a user's perspective of the firefighting agent.

This lecture video is available on YouTube:

<https://www.youtube.com/watch?v=KFxHzukp5G0>.



Prof. Takaaki Kato

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Disaster Prevention Research Institute (DPRI) Kyoto University, Japan

<http://www.dpri.kyoto-u.ac.jp/en/>



A 244-page book on “Open Science of Natural Disasters – A Form of Science Created by Everyone” edited by Professor Katsuya Yamori has been published

A 244-page book on “Open Science of Natural Disasters – A Form of Science Created by Everyone” edited by Professor Katsuya Yamori has been published..

Details are as follows.

Among the contributors from the Disaster Prevention Research Institute (DPRI), Kyoto University were Dr. Genta Nakano, Dr. Motohiro Homma, and Emeritus Professor Yoshihisa Iio.

Editor: Katsuya Yamori (ed.)

Book title: “Open Science of Natural Disasters – A Form of Science Made by Everyone”

No. of pages: 244 pages

Published by: Shinyosha on April 4, 2025

About this book (from the editor)

Open sciences aims at making science more appealing by involving not only experts but also the general public. This book summarizes the results of efforts to apply the concept of open science in the field of disaster prevention. The Abuyama Observatory of the Disaster Prevention Research Institute (DPRI), Kyoto University is used as one of the settings.

[Visit the link for the Table of Contents](#)



Source: DPRI, Kyoto

University Home Page



Article Published on Mitigating Disasters Caused by Heavy Rainfall in Urban Areas

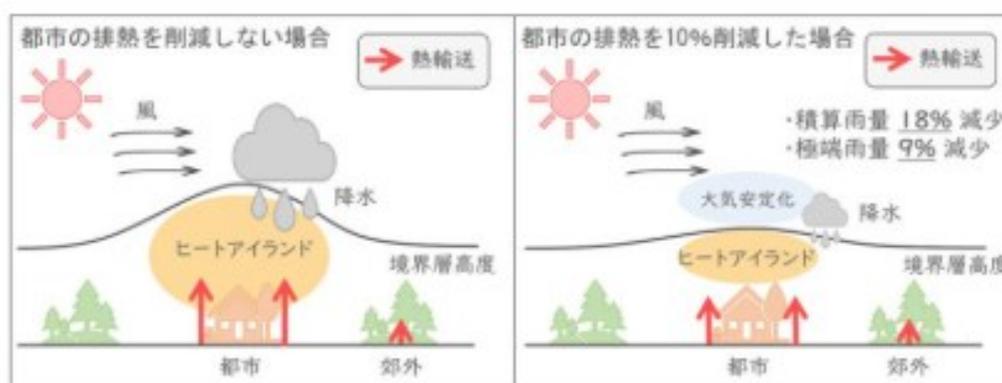
A research group led by Kenta Irie, and Prof. Tetsuya Takemi of the Disaster Prevention Research Institute (DPRI), Kyoto University, aimed to mitigate disasters caused by heavy rain in urban areas. They revealed through computer simulations using a supercomputer that reducing the amount of heat emitted from buildings and the ground in urban areas is an effective way in controlling cumulonimbus clouds that develop rapidly in summer afternoons which can cause local heavy precipitation and flooding, particularly in urban areas.

Due to the effects of urbanization and global warming, there are concerns that urban weather disasters will become more severe. In particular, heavy rain disasters occur almost every year, and countermeasures against them are a socially important issue.

Results of this research “**Effects of modifying surface sensible heat flux on summertime local precipitation in urban areas of Osaka, Japan**” were published online in the international academic journal “Theoretical and Applied Climatology” on 12 May 2025.

For more information, please see the link below.

- [Kenta Irie, Tetsuya Takemi \(2025\). Effects of modifying surface sensible heat flux on summertime local precipitation in urban areas of Osaka, Japan. *Theoretical and Applied Climatology*, 156, 6, 308.](#)
- [Kyoto University](#)



Source: DPRI, Kyoto University Home Page



Disaster Prevention Research Institute (DPRI) Kyoto University, Japan

<http://www.dpri.kyoto-u.ac.jp/en/>



Opening ceremony for the on-site satellite laboratory “International Laboratory for Earthquake and Tsunami Disaster Prevention Studies” (iLETs) held at the National University of El Salvador

The opening ceremony for the on-site satellite laboratory “International Laboratory for Earthquake and Tsunami Disaster Prevention Studies” (iLETs) was held at the National University of El Salvador on 12 May 2025. It will be positioned as a satellite laboratory of iLETs which opened at the National Autonomous University of Mexico in 2024, and will conduct research activities in collaboration with the SATREPS (Science and Technology Research Partnership for Sustainable Development) under **Disaster Prevention and Mitigation for “Compound Disaster Risk Reduction associated with Large Earthquakes and Tsunamis”** implemented in Mexico and El Salvador.

The Ceremony was attended by the Rector of the National University of El Salvador, Dean of the Faculty of Agricultural Sciences, and Director of the JICA El Salvador Office. From the Disaster Prevention Research Institute (DPRI), Kyoto University, Dr. Genta Nakano and Dr. Tomoaki Nishikawa attended the ceremony.

Ref: SATREPS



Source: DPRI, Kyoto University Home Page



Disaster Prevention Research Institute (DPRI) Kyoto University, Japan

<http://www.dpri.kyoto-u.ac.jp/en/>



HE Ambassadors for Mexico and El Salvador attend an international symposium held at the Uji Campus



A joint international symposium was held at the Uji Campus, Kyoto University by the On-site Laboratory International Research Laboratory for Earthquake and Tsunami Risk Cognition and Reduction, and SATREPS's Project for Compound Disaster Risk Reduction associated with Large Earthquakes and Tsunamis. Twenty-one researchers from Japan, Mexico, El Salvador, and Peru presented their research findings on a wide range of topics, from earthquake mechanisms to earthquake and tsunami risk mitigation and evacuation.

H.E. Ms. Melba Pria, Ambassador to Mexico and Salvadoran Ambassador H.E.Mr. **Diego Alejandro Dalton Rosales**, Ambassador to El Salvador attended the Opening Ceremony of the symposium. They expressed their gratitude for the Disaster Prevention Research Institute (DPRI), Kyoto University efforts to promote international collaborative research in both Mexico and El Salvador. They encouraged such further research developments in their respective countries.

The two ambassadors also attended a luncheon hosted by prof. Yusuyuki Kono, Vice-Director, Institute for the future of Human Society, and Prof. Tomoharu Hori, Director, Disaster Prevention Research Institute, Kyoto University.

- [International Research Laboratory for Earthquake and Tsunami Risk Cognition and Reduction \(iLETs\), Kyoto University On-site Laboratory](#)
- [Science and Technology Research Partnership for Sustainable Development \(SATREPS\), Compound Disaster Risk Reduction associated with Large Earthquakes and Tsunamis](#)



Source: DPRI, Kyoto University Home Page

SCIENCE FOR RESILIENCE



National Research Institute for Earth Science and Disaster Resilience (NIED), Japan

<http://www.bosai.jp/e/>



NIED President Prof. Takara explains about the Strategic Recommendation on Strengthening Resilience of Megacities

International Academic Forum Held on Strengthening Disaster Resilience in Megacities through Science, Technology and Innovation (STI)

On 9 December 2025, the Science Council of Japan (SCJ), in cooperation with IRDR ICoE-Coherence and the National Research Institute for Earth Science and Disaster Resilience (NIED), convened the Academic Forum, “The Future of Global Disaster Risk Reduction: Strengthening the Resilience of Megacities through Science, Technology and Innovation (STI).” The forum provided an opportunity to share scientific knowledge, policy perspectives, and practical experience regarding disaster risk reduction (DRR) in megacities facing catastrophic disaster risks.

Lessons from Recent Disasters in Japan

The proceedings began with an analysis of lessons learned from recent disasters in Japan, particularly the 2024 Noto Peninsula earthquake and subsequent heavy rainfall. These events demonstrated how cascading and compound disasters pressure response systems and expose vulnerabilities in isolated and aging communities. Scientific perspectives presented during these sessions emphasized the necessity of linking hazard analysis and disaster management with governance frameworks and community-level action.

The 14 Strategic Recommendations

Building on these insights, Prof. Kaoru Takara (President of NIED and Chair of ICoE-Coherence) introduced the forthcoming SCJ Strategic Recommendation, “Science, Technology and Innovation to Strengthen Disaster Resilience in Megacities Facing Catastrophic Disaster Risks.” This framework consists of the following 14 recommendations designed to support evidence-based and risk-informed decision-making:

1. Implement land use management based on disaster risk.

2. Accounting for uncertainties of future changes and disaster risks.
3. Minimize health impacts.
4. Prevent indirect disaster-related deaths.
5. Maintain health, medical, and welfare systems.
6. Develop standards for disaster risk assessment.
7. Promote DRR investment.
8. Utilize latest technologies and knowledge in disaster information.
9. Lead in developing AI technologies effective for DRR.
10. Promote international dissemination, communication, and sharing of information.
11. Promote interdisciplinary education to understand the comprehensive nature of disasters.
12. Build societal systems that incentivize disaster education.
13. Establish a STI platform for DRR.
14. Provide strategic recommendations that address DRR challenges grounded in societal needs.



Dr. Shohei Matsuura

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Strategic Implementation and International Collaboration

The discussions presented at the forum built on more focused exchanges held the previous day at the ICoE-Coherence International Advisory Board (IAB) Meeting on 8 December 2025. This meeting focused on pathways toward the practical realization of the recommendations through the ICoE's Four-Pillar Action Plan: (a) Drafting strategic recommendations, (b) Developing standardization of DRR solutions, (c) Capacity building of "DRR facilitators" and (d) Advancing international network for collaboration.

ICoE-Coherence plans to align these recommendations to support the implementation of the Sendai Framework, connecting science, policy, and practice through data and emerging technologies. Moving forward, NIED and ICoE-Coherence will work with the IRDR international community to support the dissemination and application of these recommendations in high-risk urban areas globally.



International expert panelists discuss about opportunities and challenges in building urban resilience



Participants of the SJC International Academic Forum



Institute of Disaster Mitigation for Urban Cultural Heritage (R-DMUCH), Ritsumeikan University, Japan

<http://www.r-dmuch.jp/en/>



Inspection of fire-fighting facilities at Kiyomizudera temple



Fieldwork in historic town at Tatsuno City

The Institute of Disaster Mitigation for Urban Cultural Heritage at Ritsumeikan University (R-DMUCH) serves as a focal point for organizing international research, training, and information networks in cultural heritage risk management and disaster mitigation. Since 2006, the Institute has implemented the UNESCO Chair Programme on Cultural Heritage and Risk Management, which aims to promote intensive education, scientific networking, and research on disaster risk management for movable and immovable, as well as tangible and intangible, cultural heritage. One of its core initiatives was the International Training Course (ITC) on Disaster Risk Management of Cultural Heritage, conducted in collaboration with UNESCO, ICCROM, ICOM, ICOMOS/ICORP, and various national and international organizations.

The ITC, which had been continuously implemented since 2006, welcomed more than 200 participants from 79 countries. Having fulfilled its significant role in the international community, the programme reached a major milestone. From this fiscal year onward, the UNESCO Chair has set new strategic goals: to disseminate the accumulated expertise more widely and to place greater emphasis on nurturing young researchers. Based on these objectives, the following new programmes have been launched.

1. ITC Digital Archive Development

In order to systematically preserve and share the long-standing educational achievements of the ITC, the Institute is developing a digital archive that will make past lecture materials, trainees' outputs, and lecture videos publicly

accessible. The archive is designed so that anyone interested in cultural heritage and disaster risk management can apply for access through a web-based system.

The outcomes accumulated through nearly 20 years of training activities reflect diverse regional and historical contexts of cultural heritage disaster risk management, and their archival preservation is of high academic significance. The archive is expected to serve as a valuable reference for future training programmes and as an important information resource that can be easily accessed by policymakers and practitioners engaged in cultural heritage disaster risk management.

The construction of the archive began with the collection, organization, and tagging of materials, and it has now progressed to the development of the web-based platform. In addition, interview videos with ITC stakeholders are being produced to enrich the content. The archive is scheduled for completion in March 2026, after which a period of trial operation, content refinement, and additional material registration will be conducted, aiming for its official launch during the symposium period in November 2026.



Prof. Shinta Yoshitomi

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2. Organizing the 20th Anniversary International Symposium on Cultural Heritage and Risk Management in 2026

Preparations are underway for an international symposium to be held in November 2026. Under the theme “Exploring the Past for the Future: 20 Years of Global Learning, Training and Networking in Cultural Heritage and Disaster Risk Management,” the symposium will be held in a hybrid format, combining an on-site venue with online participation, and will bring together experts in cultural heritage disaster risk management from Japan and abroad. It will review and evaluate the achievements of the ITC, which was conducted 18 times between 2006 and 2024, and examine new directions for the UNESCO Chair’s future international activities.

In recent years, cultural heritage and the communities that sustain it have been increasingly exposed to complex and overlapping threats, including intensified disasters caused by climate change, urbanization, and armed conflicts. Against this background, the symposium will clarify the roles that the UNESCO Chair should play in the future and explore new forms of international contribution as an educational and research institution. More specifically, it will assess the impact of the ITC from multiple perspectives and facilitate discussions among experts on emerging challenges and response strategies in cultural heritage disaster risk management, thereby creating a platform to connect the achievements of the past 20 years to future initiatives.

3. Launched a New Annual Programme - Undergraduate Summer School on Cultural Heritage and Risk Management

While the ITC primarily targeted practitioners and professionals, the development of young human resources in the field of cultural heritage and disaster risk management is equally important. Therefore, from this fiscal year, an undergraduate summer school programme was launched. Sixteen undergraduate

students from diverse academic backgrounds, including the Colleges of Policy Science, Letters, and Science and Engineering, participated as trainees. In addition, ten graduate students were appointed as Teaching Assistants, enabling them to gain experience in research and education through programme management and academic support. It is expected that some of the summer school participants will, in the future, become researchers or professionals actively engaged in cultural heritage disaster risk management.

The programme held 11 to 19 September 2025 combined lectures on fundamental theories with site visits and fieldwork in Pontocho, Kiyomizu-dera, and Sannenzaka in Kyoto, as well as an intensive fieldwork programme in the Tatsuno Important Preservation District for Groups of Traditional Buildings. Through these activities, students learned from multiple perspectives, including the understanding of cultural heritage values, disaster risk assessment, community participation, and collaboration with local communities.

The community representatives and residents also attended the final presentation session, where the students presented their analyses and proposals. Furthermore, in response to requests from the community representatives to share the outcomes with a wider audience, a short presentation by students was organized during a community briefing session on the local disaster prevention on 24 January 2026. This created a meaningful opportunity to deepen both academic learning and community engagement. Through annual implementation of this summer school, possibilities for moving beyond proposals toward practical implementation in collaboration with local residents and stakeholders is explored.

Through the implementation of these newly launched programmes, the UNESCO Chair is actively exploring its renewed roles and initiatives for the next 10 to 20 years. The Institute remains committed to contributing to the advancement of cultural heritage disaster risk management both in Japan and internationally, and will continue to report on the outcomes of these efforts.



Group work on DRR proposals for Tatsuno Historic town



Presentation of proposals to the local residents and local government officers



International Research Institute of Disaster Science (IRIDeS), Tohoku University, Japan

<http://www.irides.tohoku.ac.jp/eng/>



World Bosai Forum 2025, Sendai International Center, Japan from 7 to 9 March 2025

In 2025, the International Research Institute of Disaster Science (IRIDeS) at Tohoku University achieved significant milestones in its mission to develop practical disaster science and build resilient societies. Its activities spanned hosting major international forums, spearheading interdisciplinary research grants, and producing high-impact publications that integrate public health with disaster management. Major Achievements and Highlights in 2025 are listed below.

1. World BOSAI Forum 2025

The most prominent event of the year was the World BOSAI Forum 2025, held from March 7–9 in Sendai. IRIDeS played a central role in organizing this cosmopolitan forum, which attracted over 1,000 participants from academia, government, and the private sector.

Key Sessions:

IRIDeS hosted several critical sessions, including one by the Core Research Cluster of Disaster Science (CRCDS) focusing on international multidisciplinary collaboration.

Strategic Partnerships: A session dedicated to the

APRU (Association of Pacific Rim Universities) collaboration highlighted global research networks.

Future Capacity Building: The forum showcased the progress of the Inter-University Exchange Project between Tohoku University and University College London (UCL), aimed at establishing a joint degree program in disaster science.



Prof. Yuichi Ono

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2. Research Grant Projects and Co-Creation

The Disaster Resilience Co-Creation Research Project 2025 launched numerous interdisciplinary projects funded by IRIDeS grants.

Technological Innovation: Projects included developing AI-fused frameworks for 3D urban mapping to evaluate tsunami risk and creating digital twin-enabled evacuation planning models.

Diverse Research Themes:

- Adopted projects for 2025 covered topics such as:
- Typhoon-Focused Maritime Disaster Data Platforms.
- Altruistic behavior during disasters across different cultures.
- Postmortem imaging (Ai) for victim identification in mass disasters.
- Preserving disaster memories through innovative storytelling like kamishibai (paper picture stories) for foreign residents.

3. Notable Publications and Research Findings

IRIDeS researchers continued to lead global discourse through high-level academic contributions.

Nature World View:

- Director Professor Shinichi Kuriyama published a pivotal article in Nature (August 19, 2025), advocating for a public-health approach to disaster risk reduction and the normalization of disaster preparedness in daily life.
- Noto Peninsula Earthquake Studies: Researchers published "The 2024 Noto Peninsula Earthquake: Preliminary Observations and Lessons to be Learned," providing critical insights into recent domestic seismic events to improve future resilience.
- Disaster Finance: New research on parametric insurance for tsunamis was highlighted as a "New Wave in Disaster

Financing" in August 2025.

4. Events and Online Seminars

IRIDeS maintained an active schedule of knowledge-sharing events throughout the year:

- Myanmar Earthquake Debriefing:
- On April 25, 2025, an online debriefing session provided rapid analysis of the March 2025 Myanmar Earthquake.

Memory and Heritage:

- Assoc. Prof. Julia Gerster published a commentary in the Japan Times on the 14th anniversary of the Great East Japan Earthquake, addressing the increasing difficulty of preserving disaster memories.

20th APRU Multi-Hazards Symposium:

- IRIDeS supported the organization of this major symposium in November 2025, focusing on resilience reviews and space-time projections of hazards.

5. Awards and Recognition

Poster Awards: Faculty members received recognition at the World BOSAI Forum 2025 for research on inclusive school settings and materials for children with disabilities.

6. International Awards:

Tohoku University held its International Awards Ceremony on October 11, 2025, honoring researchers who significantly contributed to the institute's global presence.

Through these diverse efforts in 2025, IRIDeS further established itself as a global hub for Disaster Science, bridging the gap between advanced research and practical social implementation.



Earthquake Research Institute (ERI) The University of Tokyo, Japan

<https://www.eri.u-tokyo.ac.jp/en/>



Figure 1. Commemorative ceremony for the 100th anniversary of ERI held at Yasuda Auditorium, The University of Tokyo.

Since its establishment in 1925, the Earthquake Research Institute (ERI) of the University of Tokyo has served as a leading center for research on earthquakes, volcanoes, and the dynamics of the Earth's interior. Over the past century, ERI has played a central role in advancing seismology and volcanology in Japan and contributing to these fields worldwide. In 2025, ERI marked the important milestone of its 100th anniversary. To commemorate this occasion, the Institute organized a series of anniversary events aimed at reflecting on its history of research achievements and sharing future perspectives for earthquake and volcano research with both the scientific community and the broader public.

The main commemorative event was the 100th Anniversary Ceremony of the ERI, held on November 12, 2025, at Yasuda Auditorium of the University of Tokyo (Figure 1). The ceremony welcomed many distinguished guests from the Ministry of Education, Culture, Sports, Science and Technology (MEXT), the Cabinet Office, the Japan Meteorological Agency, academic societies in seismology and volcanology, universities, and disaster management organizations. In addition, many alumni and former members of ERI

attended the event. During the ceremony, ERI's major scientific achievements and contributions to society over the past century were reviewed, and perspectives for future developments in earthquake



Prof. Takashi Furumura

Director

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The ceremony also featured commemorative lectures by Professor Hiroo Kanamori of the California Institute of Technology, a leading figure in global seismology, and Dr. Shin Iyohara, a novelist known for his works related to earth science. Following the ceremony, a commemorative reception was held at Sanjo Conference Hall, providing an opportunity for participants from Japan and abroad to renew connections and exchange ideas.

In addition to the ceremony, ERI conducted a variety of outreach and exhibition activities over the course of the year to communicate its research and history to the wider public. Within the Institute, the exhibition of the Seismograph Museum, which introduces the historical development of seismological instruments, was expanded (Figure 2). During the Institute's public open house events, visitors were introduced to current research activities in earthquake and volcano science. Furthermore, a dedicated 100th anniversary website was launched, and commemorative publications were produced to present ERI's history, research accomplishments, and vision for the future to audiences both in Japan and internationally.

From the perspective of education and human resource development, ERI also organized international workshops for early-career researchers and students. These events provided opportunities to foster the next generation of scientists who will lead future research in

seismology and volcanology. They also strengthened international research networks and highlighted ERI's role as a hub for global collaborative research, showcasing partnerships with overseas research institutions.

The successful implementation of these anniversary projects was made possible through the collective efforts of the Institute's faculty members, students, technical staff, and administrative staff. With the cooperation and support of many partner organizations, the commemorative events were carried out smoothly and successfully. The 100th anniversary provided an important opportunity to reaffirm the academic and societal roles that ERI has played over the past century and to communicate the importance of research aimed at mitigating earthquake and volcanic disasters.

For more details, please visit the following link:

<https://www.eri.u-tokyo.ac.jp/100th/>





Oceania

Australia	Fenner School of Environment & Society, Australian National University (ANU)
Australia	College of Health & Human Sciences, Charles Darwin University
Australia	Humanitarian Response & Disaster Management Studies, School of Health, Charles Darwin University
Australia	Centre for Disaster Studies, College of Science and Engineering, James Cook University
Australia	Humanitarian Engineering Lab, RMIT University
Australia	Centre for Infrastructure Performance and Reliability, School of Engineering, The University of Newcastle
Australia	Sustainability Research Centre, University of Sunshine Coast
Australia	Science and Engineering Faculty, Queensland University of Technology
Australia	Humanitarian & Development Research Initiative (HADRI), School of Social Sciences and Psychology, Western Sydney University
Australia	School of Earth and Environmental Sciences/ SMAH, University of Wollongong
New Zealand	Earth Sciences New Zealand
New Zealand	Joint Centre for Disaster Research (JCDR), Massey University



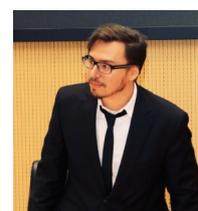
Large-Scale Educational Innovation

In 2025, 'Engineering WITH People – Lesson 1: Empathy', the first video game embedded within humanitarian engineering, was successfully piloted across OENG1166. Introduction to Professional Engineering Practice - the largest first-year engineering course in Australia, enrolling nearly 2,000 students annually.

The course now integrates structured game-based learning to simulate real-world humanitarian engineering challenges. Students engage with complex socio-technical systems, making decisions that consider social, environmental, cultural, and economic impacts. Rather than learning sustainability passively, students experience systems complexity and stakeholder engagement in a safe but realistic digital environment.



2025 has been a landmark year in advancing innovative humanitarian engineering education and impact at RMIT University. This year marked the consolidation of 'Engineering WITH People' game series as a scalable, internationally recognised model integrating empathy, sustainability, disaster management and digital innovation into large-scale engineering education.



Dr. Spyros Schismenos

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The game aligns with RMIT Graduate Capabilities and the principles of the United Nations Sustainable Development Goals (SDGs), enhancing teamwork, ethical reasoning, critical thinking, and empathy at scale. By embedding simulation within compulsory curriculum, this initiative shifts humanitarian engineering from elective exposure to foundational professional formation.

Awards and Recognition

In 2025, Dr Spyros Schismenos received significant national and international recognition for innovation in education and sustainable development.

He was selected as a Lead Author for the 8th UNESCO Science Report, contributing to global discourse on science, technology, and innovation for sustainable development.

He was also invited as:

A contributor to the United Nations Sustainable Development Goals Report for Asia and the Pacific, reviewing SDG 5 (Gender Equality), SDG 8 (Decent Work and Economic Growth), and SDG 17 (Partnerships for the Goals).

A Reference Group Member for reviewing the UN ESCAP SDG 7 Goal Profile under United Nations Economic and Social Commission for Asia and the Pacific (UN ESCAP).

In addition, he and his team received four major awards in 2025:

- 2025 Australian Financial Review Higher Education – Community Engagement Finalist Award
- 2025 Inclusion Award – RMIT Global Awards for Excellence
- 2025 Deputy Vice-Chancellor Impact Award (Learning and Teaching)

- 2025 Learning & Teaching Excellence – Early Career (Commendation)

National and International Engagement

In September 2025, Dr Schismenos was invited to UNESCO Headquarters in Paris to participate in a high-level workshop on Education and Artificial Intelligence.

Throughout 2025, the game and RMIT's pedagogical model were presented at multiple academic, community, and industry events.

Notably, our DRR gamified projects were showcased at Games for Change Melbourne, academic and game-related conferences, engaging the serious games and digital impact community.

Partnerships and Community Engagement

The Humanitarian Engineering Research Consortium: Utilising and Leveraging Engineering WITH Society (HERCULES) continued expanding its impact across NSW and Victoria. The consortium supports students and vulnerable communities by embedding co-design principles within education and outreach initiatives.

The United Nations Association of Australia (NSW Division) formally joined the consortium, supporting expansion of the program into schools across NSW. This development extends our innovative model beyond university education and strengthens pathways for younger learners to engage with sustainability, engineering and humanitarian response through interactive learning.

[https://www.linkedin.com/posts/rmit-stem-college-wereexcited-to-announce-that-we-have-signed-activity-7429296905207263232-pTlq?](https://www.linkedin.com/posts/rmit-stem-college-wereexcited-to-announce-that-we-have-signed-activity-7429296905207263232-pTlq?utm_source=share&utm_medium=member_deskto)

[utm_source=share&utm_medium=member_deskto](https://www.linkedin.com/posts/rmit-stem-college-wereexcited-to-announce-that-we-have-signed-activity-7429296905207263232-pTlq?utm_source=share&utm_medium=member_deskto)

WESTERN SYDNEY
UNIVERSITY



Humanitarian and
Development Research
Initiative

Humanitarian and Development Research Initiative, Western Sydney University Australia

<https://www.westernsydney.edu.au>

WESTERN SYDNEY
UNIVERSITY

Humanitarian and Development Research Initiative (HADRI)



<https://www.westernsydney.edu.au/hadri>

In 2025, the Humanitarian and Development Research Initiative (HADRI) at Western Sydney University continued to consolidate its position as a leading centre for research, dialogue and policy engagement in humanitarian and development studies. Through new research initiatives, international collaborations, public engagement and scholarly outputs, HADRI strengthened its role as a knowledge hub connecting academic research with policy and practice across Australia and internationally.

A major milestone in 2025 was the launch of the HADRI Global Development Working Paper Series, edited by Dr Valentina Baú. The series has rapidly established HADRI as a global knowledge contributor in the development and humanitarian field, publishing nine working papers from scholars around the world during the year. The initiative provides an important platform for emerging and established researchers to share timely research and policy-relevant insights, while expanding HADRI's international research networks and visibility.

HADRI researchers and affiliates played active roles in national and international scholarly and policy forums throughout the year.

In March, Dr Baú represented HADRI on a panel organised by the Australian Council for International Development (ACFID) in Sydney on Introduction to the Development and Humanitarian

Sector. The event brought together practitioners, academics and students to discuss pathways and challenges in the sector. In June, Dr Baú also participated in a keynote panel on the Cybersecurity–Women in Peacebuilding and Security Nexus, organised by the Humanitarian Advisory Group in partnership with the Australian Military Centre.

HADRI hosted several seminars and academic events that fostered international collaboration and scholarly exchange. In May, Dr Baú organised a seminar featuring HADRI Adjunct Dr Martin-Shields (IDOS, Germany) on urban refugees and digital technologies and their impact on social, political and economic networks. In July, Dr Nidhi Wali organised a seminar with HADRI Adjunct Dr Ahmed Razzaque Khan on diasporic activism and cultural resistance, facilitated by Professor Nichole Georgeou. These events strengthened research dialogue across institutions and disciplines.

In June, Dr Wali organised a HADRI symposium on Structural Transformation as Development, marking the launch of a book by HADRI member Associate Professor Zulfan Tadjoeeddin and co-author Emeritus Professor Anis Chowdhury. The event connected research debates with contemporary policy developments in Bangladesh, where Professor Chowdhury currently serves as Special Assistant to Chief Adviser Muhammad Yunus.

HADRI's global engagement was further strengthened through seminars delivered by its adjunct scholars. Dr Razzaque Khan presented seminars in Bangladesh on trauma, resilience and climate adaptation among migrant and coastal communities, hosted by BRAC University and the University of Liberal Arts Bangladesh with support from the Bangladeshi Ministry of Cultural Affairs. HADRI scholars also contributed to public debate through media engagement, with Adjunct Fellow Dr Mubashar Hasan providing expert commentary on Bangladesh's geopolitical developments on ABC News and ABC's The World Today.



Dr. Nichole Georgeou

Professor, Humanitarian and Development
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Public engagement and student collaboration also featured strongly in 2025. In August, Dr Wali worked with the Humanitarian and Development Studies Student Society at Western Sydney University to organise an event marking World Humanitarian Day, bringing together students, academics and practitioners to discuss contemporary humanitarian challenges.

Institutionally, HADRI strengthened its international networks by joining the global CDAC Network, which promotes effective communication with disaster-affected communities, and the International Humanitarian Studies Association (IHSA), a major global network of universities and humanitarian research centres. These memberships enhance HADRI's ability to connect research with policy and practice in humanitarian response.

HADRI scholars also contributed to important publications and policy discussions. In November, the book *Beyond the Cities: The Dynamics of Migrant Settlement in Regional Australia*, co-authored by HADRI researchers, was launched with Emeritus Professor Peter Shergold AC as guest speaker. The same month, Dr Baú was elected to the Executive Committee of the Development Studies Association of Australia, strengthening HADRI's leadership presence in the national development studies community.

The year concluded with Professor Georgeou delivering a keynote address at the Global Health in Challenging Times conference hosted by the University of Otago in New Zealand. This engagement highlighted HADRI's growing international reputation and its commitment to advancing research that informs policy and practice in humanitarian and development contexts.

A new [HADRI Global Development Working Paper Series](#) has been launched, edited by Dr Baú. The series, which currently positions HADRI as knowledge provider in the development and humanitarian field globally, has published nine issues this year from the work of scholars around the world.

In March, Dr Baú represented HADRI as speaker on a panel on [Introduction to the Development and Humanitarian Sector](#), organised by the Australia Council for International Development (ACFID) in Sydney.

In May, Dr Baú organised a HADRI Seminar with international scholar and HADRI Adjunct, Dr Martin-Shields (IDOS, Germany), on [Urban Refugees and Digital Technology: Reshaping Social, Political, and Economic Networks](#).

In June, Dr Wali organised a HADRI Symposium on [Structural Transformation as Development](#), launching the book of HADRI member Associate Professor Tadjoeeddin with co-author Emeritus Professor Chowdhury, currently serving as special assistant to Chief Adviser Muhammad Yunus on the newly formed Bangladeshi Government.

In June, Dr Baú represented HADRI as speaker on the Keynote Panel on [The Cybersecurity](#) – WPS (Women in Peacebuilding & Security) Nexus, organised by the Humanitarian Advisory Group (HAG) with the Australia Military Centre in Sydney.

In June, HADRI Adjunct Dr Razzaque Khan gave a seminar on [Testimony of Trauma and Resilience: The Experience of Maritime-Trafficked Migrants from Bangladesh](#), hosted by the Centre for Peace and Justice (CPJ), BRAC University, Bangladesh.

In July, Dr Wali organised a HADRI Seminar with international scholar and HADRI Adjunct, Dr Razzaque Khan (University of Liberal Arts, Bangladesh), on [Border Crossings and Cultural Resistance: Diasporic Activism for Sustainable Change](#). The seminar was facilitated by Professor Georgeou.

In July, HADRI Adjunct Dr Hasan, an established expert on Bangladesh's geopolitical shifts, provided insights into Bangladesh enforced disappearances on [ABC News](#).

In August, HADRI Adjunct Dr Razzaque Khan gave a seminar on [Culture of Resilience and Local Level Adaptation to Climate Change Case of Manta Community in Jorakhal Rajapur-Bhola Bangladesh](#), hosted by the Centre for Critical and Qualitative Studies (CQS) –University of Liberal Arts Bangladesh (ULAB). The Seminar was supported by the Bangladeshi Ministry of Cultural Affairs.

In August, Dr Wali facilitated a collaboration between HADRI and the Humanitarian and Development Studies Student Society at Western Sydney University to organise an [event for World Humanitarian Day](#). The event, themed Time to act is now!, provided a space for discussion on humanitarian challenges and opportunities with students, academics, and industry professionals.



In September, HADRI joined the CDAC (Communication with Disaster Affected Communities) Network, a global alliance of organisations working to ensure people can access safe, trustworthy information and communicate during crises. HADRI is now a member of an active network that meets regularly and brings together UN agencies, the Red Cross/Red Crescent Movement, local and international NGOs, media development and specialist communications entities.

In October, Professor Georgeou represented HADRI as a speaker on the panel *Beyond* Bride Price and Dowry: Cultural Practices in Multicultural Australia at the Thought Leadership Summit: Beyond Bride Price and Dowry, co-hosted in Sydney by the Community Migrant Resource Centre (CMRC) and Lead Beyond Education.

In November, HADRI Adjunct Dr Hasan was interviewed by ABC News and ABC The World Today to comment on former Prime Minister Sheikh Hasina's death sentence verdict in relation to war crimes committed during her leadership of Bangladesh last year.

In November, HADRI Adjunct Dr Samad launched the book *Beyond the Cities: The Dynamics of Migrant Settlement in Regional Australia*, co-authored with HADRI Adjunct Dr Samad and Professor Georgeou. Guest-speaker at the launch was Emeritus Professor Peter Shergold AC, NSW Coordinator General for Refugee Resettlement and Chair of the Australian Research Council.

In November, Dr Baú was elected Executive Committee Member of the Development Studies Association of Australia (DSAA), bringing HADRI within the leadership of the Development Studies sector at a national level.

In December, Professor Georgeou represented HADRI as keynote speaker at the conference *Global Health in Challenging Times*, hosted by the University of Otago in Dunedin, New Zealand.

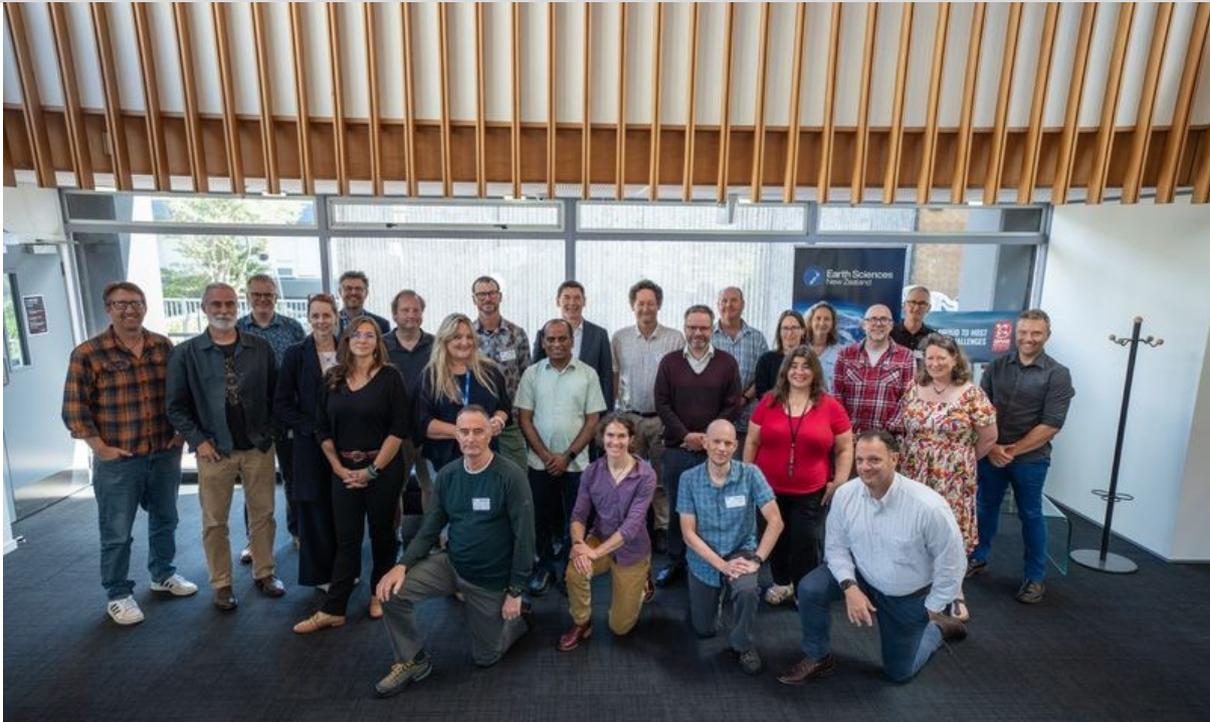
In December, HADRI joined the International Humanitarian Studies Association (IHSA). The aim of IHSA is to strengthen and advance a global network of universities, specialised research centres, inter-governmental and non-governmental organisations in order to enhance a better alignment between knowledge, policy and practice in resolving humanitarian crises.





Earth Sciences New Zealand

<https://www.earthsciences.nz>



Earth Science NZ new science leadership members including Science Mission General Managers and Principal Scientists.

In 2025, New Zealand's earth science sector underwent a historic transformation, marked by the creation of a unified Public Research Organisation. The Government is making changes to Aotearoa New Zealand's science, innovation and technology system. This includes three new future-focused science organisations, formed by merging and refocusing New Zealand's seven Crown Research Institutes.

The new Earth Sciences NZ (ESNZ) includes all of the Institute of Geological and Nuclear Sciences (GNS Science), the National Institute of Water and Atmospheric Research and the NZ MetService. This includes the GeoNet geohazards monitoring programme (monitoring volcano, earthquake, tsunami, landslide and aspects of space weather) and the national weather forecasting system.

ESNZ is focused on driving economic growth and wellbeing through increasing returns from the use of New Zealand's natural resources and environments, enhancing energy security, building hazard resilience and increasing prosperity in a changing climate.

The new organisation is structured into 6 missions: Geological Hazards, Weather & Climate Hazards,

Energy, Land and Freshwater, Climate & Weather, and Oceans & Fisheries.

The two hazard missions deliver science that enables more effective reduction, readiness, response and recovery for hazards such as earthquake, volcano, extreme weather, floods, droughts, wildfires, space weather, coastal hazards, landslides and tsunami.



Dr. Graham Leonard

General Manager, Geological Hazards Mission

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This will bring monitoring and forecasting for all major natural hazards into one organisation, combined with their research, tool development and science advice activities, and Riskscape the national risk calculation tool. This will allow over coming years a coordinated integration of national multi-hazard and risk modelling and the potential for their integration with GeoNet and MetService forecasts.

Alongside this the NZ Emergency Management System Improvement Programme is aiming to equip the nation for responding to future emergency events, especially events that are large-scale. This includes a shift to a system that is more adaptive, simple, and builds backup capacity.

Together these changes provide a once in a generation opportunity to deliver national multi-hazard, impact-based early warning for all, and potentially similarly support the wider South Pacific Region.

The new organisation aims to:

- **increase economic growth** through sustainable management and innovative research into the use of marine, freshwater, energy and mineral resources
- **enhance resilience** by reducing the impacts of natural hazards and climate-related risk and by supporting adaptation and mitigation
- **enhance the stewardship** of ecosystems and biodiversity
- **reduce risk and build resilience** to extreme weather, coastal and geological hazards

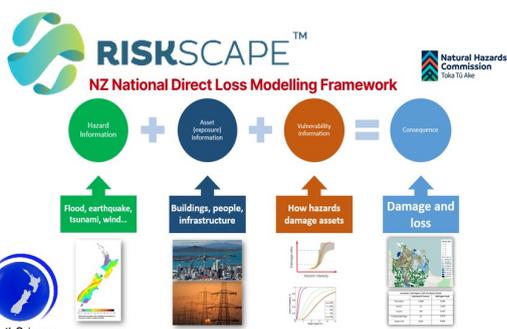
- **support growth** of renewable energy
- **support resilience** to climate change
- **increase understanding** of land and marine geological processes
- **support the sustainable use** of fisheries, aquaculture and other marine resources
- **improve understanding** of coasts, oceans and Antarctica
- **understand** freshwater systems, water quality and management
- **enhance resilience and risk management** through advanced technology, AI, machine learning and data science
- **support economic growth and resilience** of Māori and Pacific Island nations.

We are proud of our 140-year-old heritage inherited from *New Zealand Geological Survey* [1865-1990], *DSIR Geophysics Division* [1951-1990], *Institute of Nuclear Sciences* [1959-1992], and *DSIR Geology and Geophysics* [1990-1992].

In 1992, Crown Research Institutes (CRI) were established by the New Zealand Government. While our registered company name was the *Institute of Geological and Nuclear Sciences Limited*, in 2006 we re-branded to become *GNS Science*.

In 2025 GNS Science and NIWA merged to become the New Zealand Institute for Earth Science Limited, known as 'Earth Sciences New Zealand'.

Multi-hazard risk, monitoring and forecast,



and behavioural science JOINT CENTRE FOR DISASTER RESEARCH



Earth Sciences NZ for the first time brings together under one roof physical science, multi-hazard risk (including the RiskScape programme) and monitoring and forecast across all natural hazards - incorporating GeoNet (geological hazards monitoring and forecast) and soon also the national MetService - alongside behavioural sciences through the Joint Centre for Disaster Research with Massey University School of Psychology (also a GADRI member).



Joint Centre for Disaster Research (JCDR) Massey University New Zealand

<https://www.massey.ac.nz>



The Joint Centre for Disaster Research (JCDR) experienced a highly successful 2025, marked by significant research grants, international collaborations, leadership appointments, and recognition for both our faculty and student researchers.

A major highlight for JCDR was being part of a successful team awarded an MBIE Endeavor funding contract valued at \$12 million over five years. The project, titled “Next-generation early warning: Forecasting tsunami and multi-hazard impacts as local earthquakes strike,” is led by Earth Sciences New Zealand. The collaborative effort involves key JCDR researchers, including Raj Prasanna, Marion Tan, Emma Hudson-Doyle, Lauren Vinnell, Julia Becker, and Hinemoa Katene. Dr. Lauren Vinnell received the prestigious Royal Society of New Zealand Future

Leaders Fellowship to study risk perception and communication, aiming to identify ways to enhance public resilience to natural hazards. Additionally, Dr. Catalina Miranda and Dr. Manomita Das were both awarded the 2026 Biennial Grants from the Natural Hazards Commission Toka Tū Ake. Dr. Miranda’s project will investigate performance of suspended timber floors during floods and earthquakes. Dr. Das’s research will explore intention to action gap in disaster preparedness.

JCDR also continues to provide crucial leadership in the disaster risk reduction space. Professor Julia Becker was appointed as an Associate Director for the QuakeCoRE research platform. She was also appointed as a science theme leader for the “Living with Risk Theme” under the new Natural Hazards and Resilience Platform. Several team members provide advice to New Zealand government agencies and serve on science advisory panels (covering earthquakes, volcanoes, and severe weather), as well as on international steering groups such as the World Meteorological Organization’s World Weather Research Programme.

Our researchers also received outstanding recognition for their work in disaster management field. Dr. Catalina Miranda was recognized with the Emerging Women Leaders in Earthquake Engineering Award. Dr. Manomita Das, Professor Julia Becker, and Associate Professor Emma Esmé Hudson-Doyle won the 2025 EMPA NZ Awards for Excellence in Emergency Communication Research award. Associate Professor Carol Stewart was awarded the Bulletin of Volcanology Most Cited Paper award for their publication on volcanic air pollution and human health.



Prof. Julia Becker

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Our doctoral students also excelled in 2025 winning Judge's award at Lightning Talk at the QuakeCoRE annual meeting 2025 (Jenny Stein), Student and Early Career Research Award at the New Zealand Geosciences Conference 2025 (Alfredo Jaramillo Velez), Best Student Poster at the Meteorological Society of New Zealand and New Zealand Hydrological Society Joint Conference (Malintha Ranasinghe) and selections for the Integrated Research of Disaster Risk (IRDR) Young Scientists Programme (Kasuni Adikari and Anish Khanal).

JCDR maintained a strong commitment to community outreach and international partnership. Dr. Catalina Miranda led a group of earthquake engineers to Thailand following the M7.7 Myanmar earthquake exchanging crucial engineering expertise between New Zealand and Thailand. JCDR also led the organization of the 5th Chatham Islands Festival of Science with Alica Cui, our communication manager playing a pivotal role. Associate Professor Raj Prasanna was part of an international delegation to Thailand. Kelvin Tapuke actively engaged with iwi Māori and led community outreach with Māori communities, reflecting a core part of JCDR's commitment to ensuring our research is culturally appropriate and responsible. Crisis Response and Integrated Simulation Science Laboratory (CRISiSLab) at Massey University continued to lead innovative socio-technical research and community engagement under the leadership of Associate Professor Raj Prasanna and Dr. Marion Tan.

Associate Professor Dianne Gardiner was recognized in the prestigious World's Top 2% Scientists list published by Stanford University and Elsevier. Associate Professor Emma Hudson-Doyle was awarded the 2025 Massey University Individual Research Medal, which celebrates staff excellence in academic research.

Distinguished
Professor David Johnston (the founder and long-time Director of JCDR, who sadly passed away in January 2025) was posthumously

awarded the 2025 Massey University Individual Research Medal. The university recognized his exceptional career contributions to educating the public and advocating for human preparedness and resilience in the face of natural hazards.

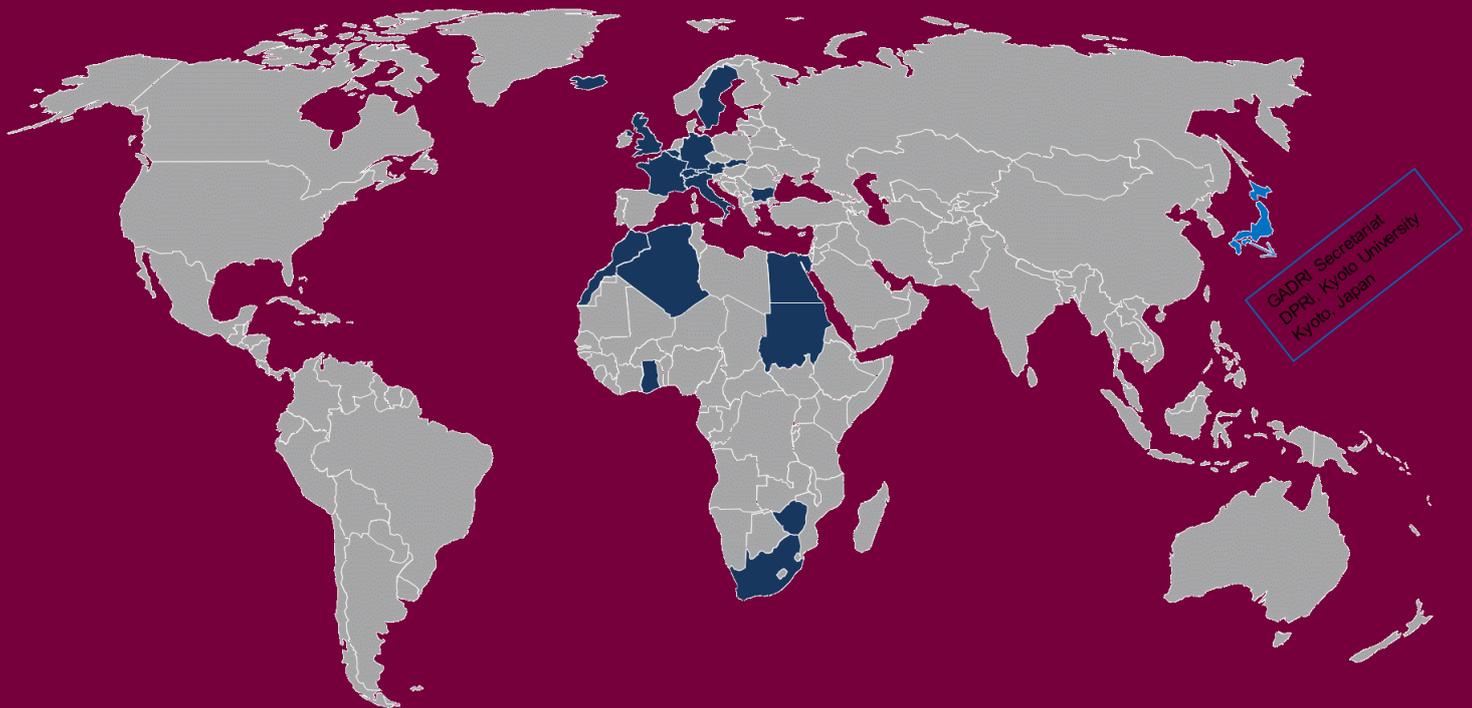
Looking ahead to 2026, the Joint Centre for Disaster Research will continue to deepen and expand its multidisciplinary applied research across its focus areas of including disaster risk and science communication, psychosocial support and community resilience, multi-hazard warning systems, disaster response and recovery leadership, people-centered technologies and systems for disaster management, and Māori and Indigenous risk reduction and disaster management. In 2026, we will be celebrating 20 years of research and teaching and are planning a special event to reflect on two decades of advancing understanding, practice in disaster risk reduction and emergency management, and impactful research.





Europe

Africa



Austria	Center for Digital Safety and Security, Austrian Institute of Technology (AIT)
Austria	Disaster Competence Network Austria (DCNA)
Austria	International Institute for Applied Systems Analysis, (IIASA)
Belgium	One Health Platform
Bulgaria	Department of Information Technologies and Communications, University of National and World Economy
Croatia	Croatian Centre for Earthquake Engineering (CCEE), Faculty of Civil Engineering, University of Zagreb
France	BRGM (Bureau de Recherches Geologiques et Minieres)
France	Council of Europe
France	Institut Des Sciences de la Terre (ISTerre), Grenoble University
Germany	Center for Disaster Management and Risk Reduction Technology (CEDIM)
Germany	Disaster Research Unit, Department of Social and Political Sciences, Freie Universitat Berlin
Germany	Research Institute for Sustainability - Helmholtz Center Potsdam (RIFS)
Germany	United Nations University, Institute for Environment and Human Security (UNU-EHS)
Iceland	Earthquake Engineering Research Centre, University of Iceland
Italy	European Commission, Joint Research Centre (JRC)
Italy	Department of Earth Sciences, University of Florence (Universita degli Studi di Firenze)
Italy	Global Earthquake Model (GEM) Foundation
Netherlands	Leiden University
Norway	Nord University
Norway	Dept of Mechanical & industrial Engineering, Norwegian University of Science & Technology
Poland	Fire University
Slovakia	Faculty of Security Engineering, University of Zilina
Sweden	Stockholm Environment Institute (SEI)
Sweden	Risk and Crisis Research Centre (RCR), Mid Sweden University
Switzerland	Global Risk Forum GRF Davos
Switzerland	Faculty of Geosciences and the Environment, University of Lausanne
UK	Anglia Ruskin University
UK	Bournemouth University Disaster Management Centre (BUDMC)
UK	British Geological Survey
UK	Cabot Institute, University of Bristol
UK	National Centre for Resilience (NCR), University of Glasgow
UK	Global Disaster Risk Reduction, UK Health Security Agency
UK	Global Disaster Resilience Centre, University of Huddersfield
UK	Dept. Management, Innovation and Technology Division, University of Leicester
UK	Department of Risk and Disaster Reduction (RDR), University College of London (UCL)
UK	Water Engineering and Development Centre (WEDC), Loughborough University
UK	Disaster and Development Network (DDN), Department of Geography, Northumbria University
UK	Overseas Development Institute (ODI) Global
UK	Research Centre for Disaster Resilience, University of Salford
UK	Swansea University



Austrian Institute of Technology (AIT)

Austria

<https://ait.ac.at>



Certifier built on existing initiatives such as the Austrian Ministry of Social Affairs' Digital Volunteer Passport and previous research projects. Close involvement of relevant stakeholders from disaster management ensured that both the requirements of the BOS and the needs of volunteers were taken into account.

Technologically, the project was based on self-sovereign identity and verifiable credentials. The demonstrator included an AI-supported chatbot for registration and skills assessment, a web application for volunteer management, a digital

The CERTIFIER research project, lead by AIT, aimed to improve the sustainable integration of volunteers into formal crisis and disaster management. Against the backdrop of increasing spontaneous offers of assistance, the project developed a competence-based approach that enables responders and authorities to coordinate efficiently, securely and in compliance with legal requirements, while at the same time preserving the self-determination and data protection of the volunteers.

At the heart of the project was a digital demonstrator for a digital skills card that allows the recording, validation and provision of volunteer skills. This enables a quick and reliable overview of available human resources in the event of an emergency. The approach combined technological innovation with organisational, legal, ethical and social framework conditions and deliberately focused on practical, acceptance-oriented implementation.

wallet for certificates, and mechanisms for skills validation. A user-centred approach ensured that volunteers retained control over their data and certificates at all times.

Another focus was on analysing organisational, legal, ethical and social framework conditions. Workshops on privacy by design, interviews with responders/authorities and an online survey among volunteers revealed a particular need for simple registration processes, high data protection and transparent competence validation. Based on this, a design, architecture and governance concept for sustainable operation was developed.

The demonstrator was implemented iteratively, tested in workshops and tabletop exercises, and evaluated positively. The results confirm the added value of competence-based coordination of volunteers in crisis situations.



Dr. Bernhard Bürger

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Certifier demonstrates how digital technologies can strengthen resilience in disaster management: emergency services benefit from improved operational planning, while volunteers benefit from transparency, recognition and expanded use of their skills. The project also contributes to the UN Sustainable Development Goals (SDGs 3, 5 and 9) and forms a basis for the further development of existing initiatives and for European links, for example in the context of the EUDI wallet.

A digital system for managing the entitlement to goods, products and services

In order to ensure the long-term supply of essential goods and services to the Austrian population in times of crisis and, secondarily, of necessary intermediate products (raw materials, semi-finished and finished products) to businesses, a robust and tamper-proof distribution system is required in the event of critical supply bottlenecks and a failure of the usual market mechanisms. After more than 50 years, this system of paper-based ration cards ('food stamps'), which still exists in principle, is to be replaced by a new digitally supported framework. In project e-Panini, coordinated by AIT, the prerequisites for a possible future implementation were discussed and its feasibility examined.

To achieve this, a basic concept for ration cards based on information and communication technology (ICT) and the appropriate technological components were developed. Taking this as an opportunity, the previous standard requirements from the 1950s and 1960s had to be redesigned and adapted for food, hygiene products, medical and pharmaceutical supplies, and services that cover basic needs, differentiated according to end-user criteria. Such criteria determined on the basis of the type of occupation (heavy labour to office work), living situation (risk of poverty, middle class, age structure, social environment), region (city, countryside, alpine area), etc.

Also, it was necessary to determine which goods and services are considered critical, whether there are possible substitutes, and how long they can be stored or kept. In times of economic shortage, it must be possible to combine different similar products as a general commodity – either by the manufacturer or by the retailer. Packaging as an orthogonal factor and logistics must also be taken into account. Here, a well-

balanced set of instruments for possible steering measures can help ministries

with economic steering powers to ensure the supply of goods to the population.

The ICT entitlement concept is flexible enough to be used in a wide variety of disaster and crisis scenarios (e.g. blackouts, internet failures, networked crises) and designed to ensure the fairest and most efficient distribution of goods and services possible in the event of economic shortages. In theory, such an approach allows for rapid, needs-based rationing, coordination with the current needs of the population and businesses, and real-time control and monitoring when related ICT systems such as distribution and logistics systems, warehouse management and distribution systems can be connected.

However, in addition to these advantages, the introduction of a digital ICT concept also gives rise to new risks. Therefore, attention was paid to maintain a tamper-proof and forgery-proof design, following security-by-design principles but allowing for everyday use (e.g. exchange, neighbourhood assistance). In addition to a resilient and redundant design, temporary offline island operation was considered, especially in the event of a large-scale ICT failure, after which consistent data synchronisation is ensured again.

Based on the experiences of the COVID-19 pandemic, project e-Panini explicitly addressed the question of the societal and social impact of implementing an ICT concept. In addition to design issues, such as how such a digital concept can be used by as many sections of the population as possible – i.e. not only by IT-savvy 'digital natives' – the project analysed how the possible design can support low-threshold use by broad sections of the population and took into account as far as possible the behaviour of people in uncertain economic situations of scarcity (e.g. black market formation, panic buying, barter economy). It also discussed how the ICT entitlement concept can be embedded in public administration, particularly in the context of the federal ministries responsible for economic management, as well as in federal structures, and operated securely.

Such an ICT entitlement concept thus combines the requirements (of the population) with the production potential (of manufacturers) and the existing product quantities (of suppliers and distributors), while also taking into account changes over the duration of the economic shortage and incorporating current framework conditions (social behaviour, logistics).

It forms an essential building block in the modernisation of economic crisis prevention, taking into account the digital dependence of social life in Austria and the security of the population.

Development of a new one-health laboratory

Climate change is reshaping Europe's disease landscape. Rising temperatures and the expanding habitats of ticks and mosquitoes are driving previously rare viruses—such as Crimean-Congo haemorrhagic fever, West Nile virus, Rift Valley fever, and Dengue—into new regions. These threats extend beyond human health: many of these pathogens are zoonotic, spreading between animals, humans, and the environment.

Today's response strategies still rely heavily on clinical diagnostics in hospitals or stationary laboratories. However, this approach leaves a critical blind spot: outbreaks in remote areas are harder to detect, slower to control, and more likely to escalate if the broader One Health context is overlooked. One Health connects human, animal, and environmental health and emphasizes cross-sector collaboration to address shared risks more effectively.

To face such challenges, MOBILISE, an innovation action funded under HORIZON-CL3-2021-DRS-01 developed a novel, quality-assured and green Mobile One Health Laboratory (MOHL) to improve surveillance of emerging arboviruses which are becoming increasingly more prevalent.

This laboratory is complemented by a Decision Support System (DSS) that assists decision-makers—such as health authorities—in coordinating resources, including mobile laboratories, and managing future outbreaks in real time. The DSS provides both a Common Operational Picture for sharing georeferenced information (e.g., resources, outbreak data) and a secure communication forum for stakeholders.

Key Features of the DSS Tool

The Decision Support System is built on a modular component library that:

- Enables reusable and scalable modules
- Ensures cross-domain consistency
- Utilizes

modular APIs and a microservice-based architecture to support flexible integration and system growth

Core Microservices Used in MOBILISE

- Data integration & interoperability: Secure data streaming using Kafka (SSL)
- Visualization: EMT web client, Object of Interest Repository (maps, charts, tables)
- Communication: Structured, multilingual stakeholder coordination via secure forums and incident management tools

The next development steps for the DSS beyond Mobilise focus on three key areas:

- Knowledge Acquisition: Leveraging AI-enabled search and automated ingestion of trusted sources to continuously expand and update the knowledge base.
- Core Decision Logic: Integrating symbolic AI, large language models (LLMs), and retrieval-augmented generation (RAG) to enable rule-based and pattern-based analytics for more robust decision-making.

Assistive Services: Providing actionable decision-support recommendations as well as contextual data in both textual and graphical formats via the dashboard.

To ensure reliability and trustworthiness, all AI-generated outputs will undergo rigorous quality assurance, including expert validation and performance monitoring based on defined indicators.



Disaster Competence Network Austria (DCNA)

DCNAustria
Disaster Competence Network Austria

Austria
<https://dcna.at>



Bridging the gap between research and practice: The Disaster Competence Network Austria (DCNA) continued to advance its mission with unwavering commitment in 2025. We take pride in this year's accomplishments, particularly in fostering collaboration across a diverse range of stakeholders, including researchers, emergency responders, civil protection agencies, policymakers, and industry practitioners.

Our podcast continues to engage a growing audience, offering fresh insights into topics like cyberattacks, drones, mass casualty incidents, water rescue, protection of cultural property, spatial planning and its role in disaster management. Additionally, the DCNA Young Scientist program further expanded its efforts to inspire and support the next generation of researchers.

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efforts to inspire and support the next generation of researchers.

In 2025, DCNA adapted and expanded its mobile research lab with a new bus as well as a new robotic system. This robust robotic platform is based on a four-legged drive system capable of operating in uneven, unstable, or partially buried terrain. It is

currently deployed within a research project exploring how robotic support can assist firefighters in responding to incidents involving hazardous substances.

For this purpose, the robot is equipped with a modular sensor kit capable of detecting flammable gases, carbon monoxide, ammonia, and a wide range of additional substances – without reliance on external infrastructure.

Members and Projects

In 2025, DCNA experienced continued growth. The network now consists of 26 ordinary members, 8 associate members and 8 strategic partnerships, including multiple new additions to the network.

Our DCNA team of 13 experts actively participated in 23 national and international disaster and security research projects throughout the year.



Dr. Christian Resch
Managing Director

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DCNA contributed to UCPKN projects such as BORIS2 (successfully finalized this year) and COLLARIS2 as well as Horizon Europe projects such as TRIFFID – aimed at developing a hybrid robotic platform that blends autonomous legged and aerial capabilities – and EMBRACE Biotox Hub – focused on pan-European management of biological toxin incidents through standardization initiatives for crisis response enhancement – strengthening international collaboration and knowledge exchange.

International Engagement

DCNA actively engaged in international platforms to discuss disaster risk reduction and management. Highlights include our participation in the Humanitarian Networks and Partnerships Week in Geneva, SMI2G in Paris, the GADRI Summit in Colorado, and the UNDRR-Webinar: “Financial incentives as a strategy for promoting disaster resilience in the building sector”.

Annual Conference and Key Milestones

In September 2025, DCNA co-organized a three-day symposium on the potential of drones, robotics, and AI in disaster and emergency management in Wels, Austria, alongside the Austrian Road Safety Board (KFV) and the Austrian Federal Fire Brigade Association (ÖBFV). The event brought together around 170 experts from academia, emergency services, authorities, and industry to explore how cutting-edge technologies can transform disaster response and improve safety.

Drones and robots were highlighted as game-changing tools for emergency operations. They can enhance

situational awareness, support search-and-rescue efforts, deliver equipment, and operate in environments too dangerous for human responders. Discussions focused not only on technological capabilities but also on the legal, regulatory, and social frameworks needed to integrate these systems responsibly into practice.

The symposium program featured more than 30 panel discussions, lectures, workshops, and live demonstrations, covering topics such as experiences from national and international missions, how scientific insights can inform strategic decisions, and the role of innovations in training and deployment. Sessions also addressed the importance of public perception, the potential of AI integration, ethics in drone use, and collaborative robotics applications.

Organizers emphasized that successful implementation of advanced technologies in disaster management requires close collaboration between research and operational practice. The exchange between scientists, practitioners, and decision-makers was seen as a critical step toward integrating innovative tools into future emergency response frameworks.

Outlook

As we reflect on the past year, we express our deep gratitude to our members, partners, and stakeholders for their unwavering support and collaboration. The DCNA remains committed to fostering innovation, promoting resilience, and bridging the gap between research and practice. Together, we look forward to building on these achievements in 2026 and beyond.





Science Research Center for Disaster Risk Reduction (SRCDRR), University of National and World Economy (UNWE), Bulgaria

<http://www.unwe.bg/en/>



The 2025 ResiliEnhance Platform Meeting

The **SCRDRR** continues the work on two R&D Projects in 2025:

1. **“SMART RISK MANAGEMENT FOR BUSINESS FROM ADVERSE EVENTS AND NATURAL DISASTERS”**, (2021-2026), funded by the National Science Fund of Bulgaria

The project develops an innovative methodology for integrated risk assessment, which includes new and modified classical and smart methods and models. Each method and model is adapted to the specifics of the specific business at the level of economic sector and individual company, taking into account the specific impacts of potential adverse events and natural disasters in the specific region. The main result of the project will be the developed general framework for smart risk management of adverse events and natural disasters based on an innovative methodology for integrated risk assessment.

The following research results have been achieved:

- A modified model of the basic transportation task is proposed, which takes into account the negative impact of natural disasters on the functional sustainability of the routes in the considered transport logistics system. The proposed modified model includes a variable for risk assessment from certain natural disasters

along each transportation route, which depends on three additional variables: probability of occurrence of the certain natural disaster in the region of the route; vulnerability of the route to the certain natural disaster; intensity of the natural disaster for the route in the given period of time. These additional variables are used to recalculate the adjusted total transportation costs and, accordingly, to assess the degree of usability of the routes. Many studies have been carried out with different values of the variables of the modified model. The results show the advantages of the modified model of the transportation task at different levels of risk of natural disasters.



Prof. Dimiter Velev

Director

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- The role of the break-even point (BEP) as a business management tool in the conditions of natural disasters have been examined. Four management scenarios have been proposed using the concept of the break-even point to reduce the negative consequences of the natural disasters for companies: Scenario for increasing fixed costs and decreasing unit variable costs; Scenario for increasing fixed costs and increasing unit variable costs; Scenario for increasing fixed costs, increasing unit variable costs, and increasing unit price; Scenario for reducing fixed costs without changing unit variable costs.
- Key ethical aspects of the application of generative artificial intelligence (GenAI) for disaster risk reduction (DRR) are analyzed, challenges are identified and a framework for their responsible solution is proposed.

2. “APPLICATION OF ARTIFICIAL INTELLIGENCE FOR SUSTAINABLE BUSINESS DEVELOPMENT IN THE CONTEXT OF CLIMATE CHANGE”, (2025-2026), funded by Science Fund of the University of National and World Economy.

The SRCDRR organized the **15th INTERNATIONAL CONFERENCE ON APPLICATION OF INFORMATION AND**

COMMUNICATION TECHNOLOGY AND STATISTICS IN ECONOMY AND EDUCATION (ICAICTSEE-2025), October 09-11th, 2025, UNWE, <http://icaictsee.unwe.bg/>. The conference is officially registered as an International Federation for Information Processing (IFIP, <https://ifip.org/>) event. The conference covered topics, such as AI, VR, Biomedicine, Big Data, IoT, etc. More than 60 papers were presented.

The SRCDRR director, prof. VeleV, took part in the annual conference of the Resilience Platform - RESILab^{ex} - Enhancing the Resilience to Disasters for Sustainable Development - a project co-financed under Venezia Giulia Regional funds (L.R.18/2011) - CEI-FVG operative programme 756/2021. The SRCDRR is a member of the RESILab^{ex}. The event took place at the International Centre for Mechanical Sciences (CISM) at the University of Udine, Italy, October 27-28th, 2025. The participants in the project are from 12 European countries.



The SRCDRR director, prof. Dimiter VeleV, took part in the International Forum on Advanced ICT Research and Innovation, 29.09.2025 - 01.10.2025, Tech Park, Sofia, Bulgaria.



Croatian Centre for Earthquake Engineering (CCEE), Faculty of Civil Engineering, University of Zagreb Croatia

<https://www.hcpi.hr/>



Group Photo of the 3rd Croatian Conference on Earthquake Engineering (3CroCEE)

The Croatian Center for Earthquake Engineering (CCEE) is a scientific branch of the Faculty of Civil Engineering (FCE), University of Zagreb, and a leading institution in Croatia for earthquake engineering research and applications. In 2025, the CCEE comprised 25 committee members (including full professors, associate professors, and assistant professors), along with two postdoctoral researchers and two PhD students and one research assistant.

CCEE plays a pivotal role in seismic risk assessment, post-earthquake reconstruction, and earthquake risk management, particularly in response to the 2020 earthquakes. The center collaborates extensively with researchers from universities and institutes across the region, Europe, and beyond, fostering innovation and advancing the field of earthquake engineering on a global scale.

One of the primary objectives of the Croatian Center for Earthquake Engineering (CCEE) is to support authorities and decision-makers in disaster preparedness and reducing the seismic vulnerability of buildings and infrastructure. By enhancing response capacity to disaster events, CCEE contributes to building a more resilient community.



Dr. Josip Altić

Professor and Head

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CCEE committee members (left) and PhD students and researchers with the head of the CCEE (right)

To achieve these goals, nine projects were launched in 2023, fully funded by the Government and CCEE, focusing on innovative solutions for seismic risk reduction and disaster management:

- Structural health monitoring by using unexpensive accelerometers that are planned to be installed on buildings with different typology,
- Development of program packages and standards for out-of-plane mechanism calculations according to Eurocode 1998-3,
- Development of a tool based on VR (virtual reality) to train engineers for efficient and rapid damage assessment using,
- Advanced numerical modelling and structural analysis of masonry buildings in aggregates,
- Preliminary and rapid analysis of the seismic resistance of existing structures using visual programming,

- Damage assessment using unmanned aerial vehicles (UAV),
- Development of an improved digital form for visual damage assessment, considering experience from past earthquakes,
- Development of form for damage assessment of bridges,
- Seismic risk assessment of educational buildings in Croatia.

During 2025, the Croatian Center for Earthquake Engineering (HCPI) continued its core mission of advancing earthquake engineering research, professional education, and applied expertise in seismic risk reduction. Activities were focused on scientific events, professional training, international cooperation, and direct support to public authorities.

Achievements

Development of Digital Tools for Structural Damage Assessment

CCEE continued investing in mobile and digital tools to streamline damage assessment processes. These efforts included enhancing mobile applications for real-time building inspections, testing AI-driven damage detection tools using drone and satellite imagery, and integrating data collection systems with national disaster response frameworks.

Bridge Inspection and Seismic Safety Evaluation

A specialized program focused on seismic assessment of bridges received funding, including field evaluations of most important bridges in earthquake-prone areas, development of inspection protocols to standardize damage classification of bridges, training workshops for engineers on bridge assessment post-earthquake.

Organization of Conferences, Scientific Events and Professional Meetings

- The 3rd Croatian Conference on Earthquake Engineering (3CroCEE) was held from March 19 to 22, 2025, in Split, Croatia. This event marks the fifth anniversary of the 2020 Zagreb earthquake and aims to continue the tradition of enhancing earthquake awareness and knowledge dissemination.
- Days of Earthquake Engineering 2025, Petrinja (December 2025), marking the fifth anniversary of the Petrinja earthquake.
- Scientific conference “Earthquake Engineering – Damage and Structural Rehabilitation”, Zagreb, May 2025.
- Participation in the 19th Days of the Croatian Geotechnical Society, Opatija, June 2025.

Collaboration with other institutes in the field of earthquake engineering

- Continuation of strong relations and collaboration with Global Earthquake Model (GEM) Foundation, Institute of Earthquake Engineering & Engineering Seismology (IZIIS) from North Macedonia, University of Minho etc.
- New strong scientific collaboration with the Laboratory of Mechanics and Civil Engineering (LMGC), a Joint Research Unit of the CNRS and the University of Montpellier on a scientific research study for seismic assessment of URM buildings.
- Strengthened cooperation with the Slovenian Administration for Civil Protection and Disaster Relief, focusing on GIS-based post-earthquake damage assessment.

Organization of lecturers and training for experts and engineers:

In 2025, HCPI and the Faculty of Civil Engineering,

University of Zagreb, jointly organised a five-day international workshop on Performance-Based Earthquake Engineering (PBEE), in collaboration with Djura | Risk – Data – Engineering



Post-graduate program:

- In 2025, the first generation of specialists graduated from the postgraduate specialist programme Earthquake Engineering.
- The second generation continued the programme, including lectures and a study visit to Milan with technical visits to Freyssinet facilities and construction sites employing seismic isolation systems.

Public Engagement and Expert Support

- Organization and participation in expert panels and public discussions.
- Contribution to public calls and expert lists for seismic safety assessment of public buildings in the City of Zagreb.

Most significant publications in 2025:

- Pinasco, Silvia; Demšić, Marija; Pilipović, Ante; Šavor Novak, Marta; Uroš, Mario; Lagomarsino, Sergio; Cattari, Serena; Seismic fragility assessment of existing masonry buildings in aggregate located in Zagreb // Bulletin of earthquake engineering, 23 (2025), 6; 2715-2741. doi: 10.1007/s10518-025-02156-3

- Katarina, J., Demšić, M., Šavor Novak, M., Atalić, J., Uroš, M.: Overturning of unreinforced masonry walls – predominant failure mechanism in historic masonry buildings, GRAĐEVINAR, 77 (2025) 11, pp. 1057-1069, doi: <https://doi.org/10.14256/JCE.4418.2025>
- Pilipović, Ante; Uroš, Mario; Šavor Novak, Marta; Selection of the Optimal Intensity Measure for Unreinforced Masonry Buildings Using Vulnerability-Based Metrics // Buildings, 15 (2025), 23; 4261-4291. doi: 10.3390/buildings15234261
- Baniček M., Shaqfa M., Vaing S., Atalić J. (2026). Tracking Modal Evolution Through Damage and Retrofit Scenarios in Historic URM Buildings: A Numerical Study of a Representative Downtown Zagreb Typology. Journal of Earthquake Engineering. Accepted for publication.



Three professors awarded the Order of the Croatian Interlace by the President of Croatia, Zoran Milanović

Awards:

- Structural analysis and retrofit design for the Zagreb Cathedral restoration project was honoured with an international award for excellence in advanced structural design.
- President of Croatia, Zoran Milanović, awarded the Order of the Croatian Interlace to three professors, members of the CCEE committee, for their contribution to the organization and management of inspections of buildings after the 2020 earthquake.

Professional projects:

- The Branch actively participates in professional engineering projects aimed at the application of advanced methods and knowledge in earthquake engineering, with a strong emphasis on collaboration with leading structural design companies in Croatia. Notable projects in 2026 include:
 - Zagreb Cathedral – preparation of design documentation for the structural rehabilitation of the Cathedral of the Assumption of the Blessed Virgin Mary complex, Kaptol 31.
 - Palace of Justice, Zagreb – analysis and assessment of the existing structural system to determine the level of seismic resistance.
 - National – preparation of design documentation for the structural rehabilitation of the Cathedral of the Assumption of the Blessed Virgin Mary complex, Kaptol 31.

Plans for 2026:

- Main focus is on implementation of **Seismic certificate** in Croatia (new Law) and new project about **Developing Retrofit Strategies for Historical Masonry Building Aggregates in Zagreb**.
- "Seismic Risk Assessment of City of Zagreb" project is intended to be a **pilot project for the seismic risk assessment for the entire Croatian territory, which ended with a complete success in 2023**. Knowledge and experience gained

through this project will be disseminated in a project covering region of three counties in central Croatia.

- Crucial is continuation and development of the **9 projects that started in 2023** to support authorities and decision-makers in this critical period for Croatia.

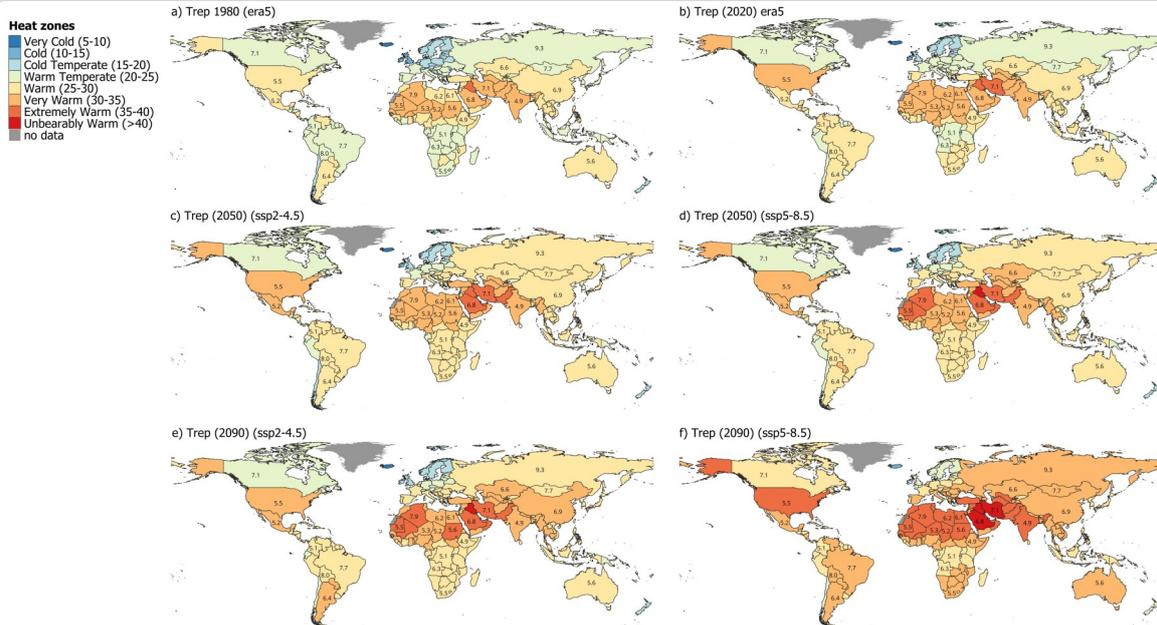


Fig. 1: Development of qualitative heat zones, calculated from the average of weighted daily mean and daily maximum temperatures for the respective year: historical reference years (a) 1980 and (b) 2020; future scenario SSP2-4.5 (c) 2050 and (d) 2090; future scenario SSP5-8.5 (e) 2050 and (f) 2090 (Schäfer et al., 2025).

The Center for Disaster Management and Risk Reduction Technology (CEDIM) is an interdisciplinary research center dedicated on disaster and resilience research. Its near-real time Forensic Disaster Analysis (FDA) activities focus on investigating disaster dynamics, identifying key risk drivers, estimating impacts (e.g., damage, fatalities, displaced persons), and deriving implications for disaster mitigation.

In 2025, CEDIM produced several FDA and short reports on global hazards and disasters, examining three major catastrophic events in depth:

- **July 2025 Kamchatka Tsunami:** Triggered by a powerful Mw 8.8 earthquake—the strongest in the region since 2011—the tsunami spread across the Pacific within 24 hours. Warnings were issued for numerous coastal areas, including Japan, the United States, and the South Pacific. Despite its global reach, significant damage occurred only locally in Russia. The earthquake itself caused most of the damage, while the tsunami mainly impacted the port of Severo-Kurilsk. The comparatively minor consequences were largely due to low population density and protective measures,

such as the relocation of settlements.

- **March 2025 Mandalay Earthquake, Myanmar:** With a magnitude of 7.7, this earthquake had far more severe consequences. Around 222 million people were exposed to tremors, and millions lived in areas prone to severe damage. Critical infrastructure was heavily affected: bridges over the Irrawaddy River collapsed, airports were damaged, and transport routes were blocked, complicating rescue operations. Hundreds of healthcare facilities were also impacted. CEDIM model calculations estimate 5,600–45,000 fatalities and economic losses of \$3–8 billion. Political instability and supply shortages further exacerbated the crisis.



Prof. Dr. Michael Kunz
CEDIM Spokesperson
E-mail: info@cedim.de

- October 2025 Hurricane Melissa:** Developing into an extremely powerful Category 5 storm with peak winds of up to 190 knots, Melissa struck Jamaica at maximum intensity. It ranks among the strongest hurricanes recorded in the region, causing widespread destruction, power outages, and massive flooding—particularly in Haiti, where the death toll was high. Cuba also sustained considerable damage before the storm crossed the Atlantic. This event underscores the destructive combination of extreme winds and heavy rainfall, as well as the vulnerability of island states.

In addition to analyzing acute disaster events, CEDIM's research in 2025 also focused on long-term climatic impacts. One major area of study examines the effects of heat waves and droughts in Central Europe on society, the economy, and ecology.

Adaptation of Flood Retention Basins: One project investigated whether existing flood retention basins can be repurposed to cope with prolonged droughts in the federal state of Baden-Württemberg, Germany (Ho and Ehret, 2025). The aim of this project was to develop an integrated management system that stores water during high runoff situations and releases it during dry periods for irrigation or to stabilize low runoff, without compromising flood protection. Model simulations revealed that several retention basins have an increased potential to be used simultaneously for flood and drought protection: it is suggested that a large share of agricultural damage could be mitigated, and regional irrigation needs are met by an average of 70%, largely without reducing flood protection.

context of climate change and societal dynamics (Schäfer et al., 2025; Figure 1). By separating climatic and demographic factors, the study identified how population shifts, such as migration to warmer regions, amplify heat exposure. As global climate models have a tendency to underestimate current warming, future risks could even be higher than anticipated. A “heat zone” classification illustrates that many temperate regions are moving into “warm” or “very warm” categories, and high-emission scenarios suggest areas like the Middle East may face “unbearable heat” by mid-century.

These projects highlight that heat waves and droughts pose complex challenges to social, economic, and ecological systems. Effective responses require interdisciplinary research and

integrated adaptation strategies.

In 2025, CEDIM also advanced projects with other research foci. The **COCAP project** (COping CAPacity of nations facing systemic crisis) has developed a scientific prototype decision support system (DSS) to aid policymakers during pandemics. The modular system recommends non-pharmaceutical measures, such as mask mandates or gathering restrictions, while accounting for both pathogen characteristics and national context. Using agent-based simulations, differential equations, and AI-supported optimization, the DSS evaluates disease spread and the economic and social impacts of interventions, providing evidence-based, scenario-specific guidance for decision-makers.

Collaboration with the insurance broker **Willis Towers Watson (WTW)** and NASA continued, focusing on improving models for hail hazard and risk assessment as well as the effect of climate change. This collaboration builds on over a decade of partnership, leveraging advanced datasets to understand and address hailstorm risks, particularly under climate change. Risk models or components for these models have been developed also for other insurance companies.

The real-world lab **ERNIE** (Real-time Decisions in the Presence of Risky Ignorance in the Impact Prediction of Extreme Events), strongly aligned with CEDIM, is currently being established at KIT. It includes two professorships, focuses on forecasting and analyzing the impacts of extreme short-term events, long-term climate changes, and their interactions with urban areas, society, and the economy. A key aspect is understanding how societies cope with risk and uncertainty.

Further information is available on our website, and the latest CEDIM flyer can be downloaded here (https://www.cedim.kit.edu/download/Flyer_CEDIM_2022_english_web.pdf).





European Commission, Joint Research Centre Italy

<https://drmkc.jrc.ec-europa.eu/>



Figure 1. EU Science for Preparedness Conference

The Joint Research Centre (JRC) provides independent, evidence-based knowledge and science to support EU policies that positively impact society. In the area of Disaster Risk Management, the JRC's work is guided by the objectives of the European Preparedness Union Strategy, adopted in 2025.

Building on advances in artificial intelligence, in 2025 the JRC's work on disaster risk focused on innovating and creating new knowledge and tools in the areas of Earth Observation, situational awareness, and early warning systems, while delivering a modern, user-driven, and fit-for-purpose Copernicus Emergency Management Service. Below are some examples of the JRC's top work throughout 2025.

Understanding global population growth and urbanisation

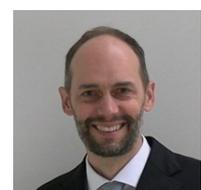
One of the JRC's most far-reaching contributions in 2025 was to global population and urbanisation research. In November, the United Nations published the **World Urbanisation Prospects report** – a comprehensive set of revised estimates and projections covering urban and rural populations of every country in the world, as well as their major urban agglomerations.

For the first time, this edition was based entirely on the JRC Global Human Settlements Layer (GHSL) dataset, which is derived from earth observation data and applies a standardised methodology – the Degree of

Urbanisation – for delineating settlements worldwide. The JRC's evidence reveals a striking trend: the world's constructed areas have been expanding twice as fast as the population since 1975.

GHSL's open dataset and methodological framework have enabled an entirely new understanding of global population dynamics and now underpin a wide range of EU development-related policies, including disaster risk reduction.

Link: https://joint-research-centre.ec.europa.eu/jrc-news-and-updates/worlds-constructed-areas-expanding-twice-fast-population-1975-2025-11-18_en



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Analysis of Risks Europe is facing

In support of the **Preparedness Union Strategy**, the JRC published a major science-for-policy report on current and emerging risks. Drawing on the latest scientific findings, the report covers 47 distinct risks – including cross-border risks, emerging risks, and High-Impact Low-Probability (HILP) events.

The report's methodology involved a wide-ranging review of EU institutional reports and scientific publications, complemented by extensive stakeholder consultations. The result was a multi-faceted perspective on Europe's risk environment. This report is part of the JRC's broader effort to develop a more comprehensive and integrated multi-hazard risk assessment framework to support more effective and anticipatory policymaking across the EU.

Link: <https://publications.jrc.ec.europa.eu/repository/handle/JRC141673>, https://joint-research-centre.ec.europa.eu/jrc-news-and-updates/how-can-we-prepare-face-risks-today-and-those-tomorrow-2025-07-03_en <https://publications.jrc.ec.europa.eu/repository/handle/JRC141673>

Copernicus Rapid Mapping in support of the Myanmar earthquake response

On 28 March 2025, a magnitude 7.7 earthquake struck the Sagaing Region of central Myanmar, with its epicentre approximately 16 km north-northwest of

Sagaing city and 19 km northwest of Mandalay, at a depth of just 10 km. A magnitude 6.4 aftershock followed shortly after in the same area. Nearly three million people were exposed to severe shaking. The Copernicus Emergency Management Service implemented by the JRC was activated on the same day – namely the On-Demand mapping team - to provide an initial rapid assessment, establish the event's extent, and begin damage mapping.

The activation proved to be one of the largest and most operationally complex responses of the year, covering 57 areas of interest and delivering 93 products - including 160 maps - to support authorities and humanitarian responders on the ground. It showed Copernicus' capacity to mobilise rapidly and deliver critical, satellite-based geospatial intelligence at scale - wherever in the world disasters strike.

Link: <https://mapping.emergency.copernicus.eu/activations/EMSR798/>

Other innovations in CEMS: first AI forecasting system incorporated in CEMS operational flood forecasting tools: in 2025, the JRC included the ECMWF Artificial Intelligence Forecasting System (AIFS) in the European Flood Awareness System (EFAS) and Global Flood Awareness System (GloFAS) to complement traditional ensemble models.

Link: <https://www.ecmwf.int/en/newsletter/185/news/ai-takes-cems-flood-forecasting-new-era>

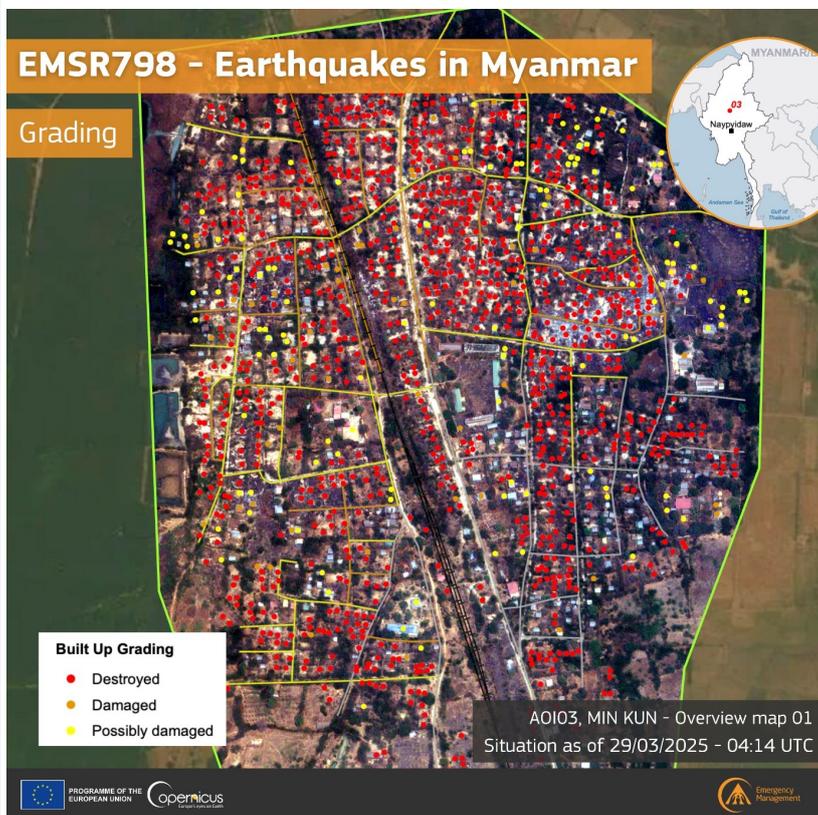


Figure 2. One of the largest and most operationally complex activations of the rapid mapping component of the Copernicus Emergency Management Service



Figure 3. Bringing together the latest findings from science in 47 risks, the flagship report explores cross-border risks, emerging risks, and High-Impact Low-Probability (HILP) events.

Conference on Science for Preparedness of the EU

In November 2025, the JRC organised the first-ever EU Science for Preparedness Conference, bringing together experts from the scientific, policy, and crisis response communities. The event provided a platform for exchanging knowledge, testing new tools, and forging connections among those committed to advancing science-based crisis preparedness and response.

Key discussions underscored the growing need for systemic, multi-hazard risk assessment frameworks and highlighted the critical importance of moving scientific innovations from prototype to operational deployment. The conference made clear that scientific innovation is not just a supporting element of the Preparedness Union Strategy but one of its essential cornerstones.

Artificial Intelligence approaches for disaster risk management

Artificial intelligence is becoming increasingly central to the JRC's approach to disaster risk management. In 2025 AI models and applications were holding significant potential for enhancing the EU's ability to anticipate and prepare for disasters – from deep learning models that accelerate data processing and analysis, to tools that strengthen early warning capabilities. Research focuses on models that are interpretable and maintain a "human-in-the-loop" approach to support accountable decision-making.

Link: <https://publications.jrc.ec.europa.eu/repository/handle/JRC142778>

Publications

In 2025, the JRC delivered 27 scientific publications and 41 technical reports in the area of disaster risk reduction.

Explore them here: <https://drmkc.jrc.ec.europa.eu/science-for-drm/scientific-output>

Global population by Degree of Urbanisation, 1950-2100

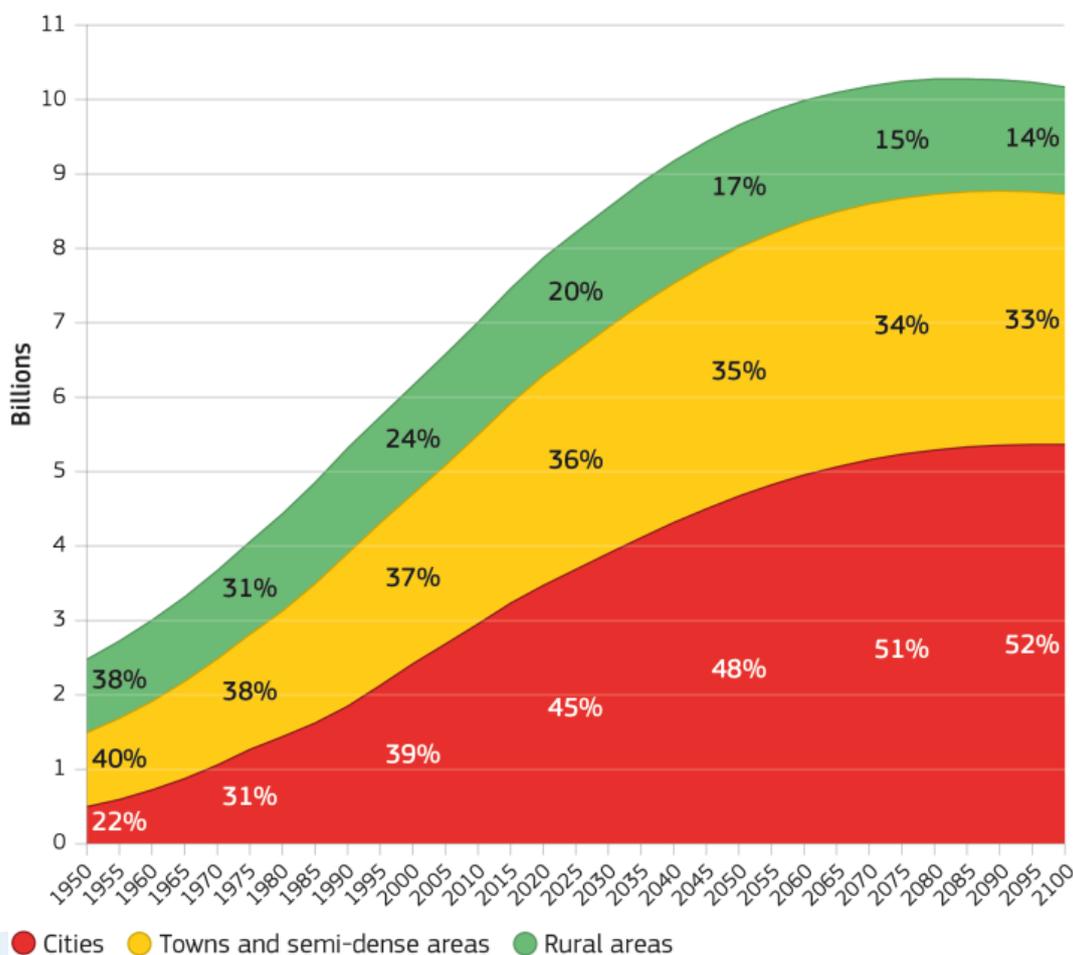


Figure 4. Shares (in percentages) of population living in cities, towns and rural areas (1950-2100). Source: Global Human Settlement – World Urbanisation Prospects – Country statistics

UNESCO Chair on Prevention and Sustainable Management of Geohydrological

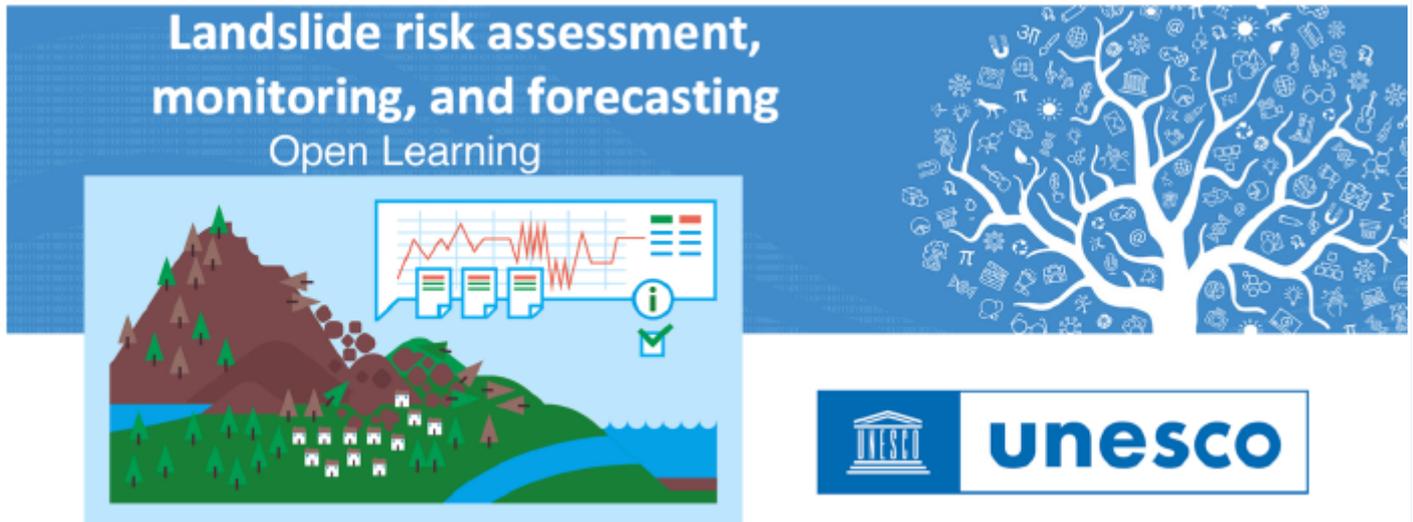


Figure 2: Course on Landslide risk assessment, monitoring, and forecasting organized by the UNESCO Chair of the University of Florence (<https://openlearning.unesco.org>).

In 2025 the Department of Earth Sciences (DST-UNIFI), the Civil Protection Center (CPCUNIFI) and the UNESCO Chair on Prevention and Sustainable Management of Geohydrological hazards (UNESCO Chair) have participated in several research projects in the field of prevention and management of geohydrological hazards with a particular focus on landslides, subsidence and floods. The research activities are organized around four main missions:

- **Research and Innovation:** development of advanced technologies for monitoring and forecasting geo-hydrological hazards, including satellite radar interferometry (PS-InSAR), multi-sensor drones, ground-based monitoring systems, and quantitative risk assessment models operating at multiple spatial scales.
- **Risk Reduction and Resilience Enhancement:** support to policies for disaster risk reduction by designing and implementing people-centered early warning systems, contributing to emergency planning, education, and resilience building. The UNESCO Chair plays a key role in international initiatives such as the Kyoto 2020 Landslide Commitment.
- **Protection of Cultural Heritage:** safeguarding of World Heritage sites threatened by geohydrological hazards. The Chair is conducting international missions in several countries, addressing slope instability, rockfalls, erosion,

floods, and restoration challenges.

- **Scientific Networking and Open Science:** promotion of global scientific cooperation through networks like the International Consortium on Landslides (ICL), openaccess journals and book series, international MSc programs, capacity-building activities, and UNESCO Open Learning courses.

Regarding Research and Innovation, the organization conducted a pan-European landslide risk assessment (Figure 1; Caleca et al., 2025). The methodology integrates landslide susceptibility with exposure indicators, quantifying assets such as buildings, agricultural land, and population distribution. Vulnerability, defined as the potential degree of damage to these elements, completes the risk framework and enables risk estimation at the continental scale.



Prof. Nicola Casigli

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The results identify Europe's most landslide-prone regions and provide estimates of annual economic losses under worst-case vulnerability scenarios. Population impacts are also assessed, with particular attention to variations in exposure during daytime and nighttime. To enhance the practical applicability of the study, the authors developed an online interactive platform that allows policymakers, urban planners, and the general public to explore landslide risk metrics at the local scale (<https://pan-european-landsliderisk.github.io>).

In 2025 the UNESCO chair has organized a course for UNESCO entitled "Landslide risk assessment, monitoring, and forecasting" (Figure 2). This course provides an overview of key topics related to landslide disaster risk reduction (DRR), including an introduction to the main landslide typologies and their characteristics, an overview of the data required and the techniques most commonly used for landslide risk assessment, the most cost-effective methods for investigating and monitoring the various landslide typologies, and the best options for hazard management, including implementation of mitigation measures and early warning systems.

Aimed at both experts and non-expert people, the course provides advanced but easy-to-follow keys to understanding landslide disasters and the main methods for analyzing and managing the associated risks. The course addresses practical aspects and case studies that provide useful links to land use planning, risk mitigation/adaptation in hazard-prone areas, and integrated management of exposed sites. The course is available at the UNESCO open learning platform (<https://openlearning.unesco.org/>).

The UNESCO Chair and the CPC-UNIFI are contributing to the organization of the Seventh World Landslide Forum (WLF7), which will take place in India from 23 to 27 November 2026 at Amrita University in Faridabad (<https://wlf7.org>). WLF7 is entitled "Landslide Science and Practice for Safe and Resilient Communities", in line with major international commitments to disaster risk reduction, including the Sendai Framework for Disaster Risk Reduction 2015–2030, the Kyoto Landslide Commitment 2020 (KLC2020), the ISDR–ICL Sendai Partnerships 2015–2025, the 2030 United Nations Sustainable Development Goals (SDGs), the New Urban Agenda, the Paris Climate Agreement, and the Indian Government's 10-Point Agenda on Disaster Risk Reduction. WLF7 is

organized by the International Consortium on Landslides (ICL) with the support of major international organizations and associations, including UNESCO, UNDRR, WMO, FAO, UNU, ISC, WFEO, IUGS, and IUGG.

In particular, the Forum will be structured around the following thematic areas:

- Reducing Landslide Disaster Risk, Coordinators: Shinji Sassa, Irasema Alcántara- Ayala, Matjaž Miko", Kyoji Sassa
- Remote sensing, site investigation, monitoring and early warning, Coordinators: Maneesha Vinodini Ramesh, Veronica Tofani, Jan Klime"
- Testing, modeling and mitigation techniques, Coordinators: Binod Tiwari, Sabatino Cuomo, Beena Ajmera, S. S. Chandrasekaran
- Landslide Hazard Mapping, Risk Assessment and Management, Coordinators: David Huntley, Biljana Abolmasov, Mario Parise, Dhanya M
- Progress in landslide science and applications, Coordinators: #eljko Arbanas, Hemalatha Thirugnanam, Faisal Fathani, Jonathan Chambers
- Regional Landslide Case Studies, Coordinators: Chih-Chung Chung, Xuanmei Fan.

During the reference period, joint activities carried out by the UNESCO Chair and the International Consortium on Landslides (ICL), continued without interruption. On 3–4 December 2025, the Consortium's annual meeting was held at UNESCO Headquarters in Paris, bringing together more than 70 members from across the world.

Within the framework of ICL activities, the UNESCO–ICL International Conference on Landslide Disaster Risk Reduction (Figure 3) took place on 2 December 2025 at UNESCO Headquarters in Paris. The conference marked both the conclusion of the Sendai Partnerships (2015–2025) and the fifth anniversary of the Kyoto landslide Commitment 2020 (KLC2020). The event was jointly organized by UNESCO and the International Consortium on Landslides to provide a global platform for advancing knowledge, fostering international collaboration, and promoting concrete actions to reduce landslide risk worldwide.

The conference strengthened the integration between scientific research, policy development, and community engagement, and featured case studies and lessons learned from recent landslide events. The detailed programme is available at: <https://www.unesco.org/en/articles/unesco-international-conference-landslide-riskreduction>.

During the opening session, keynote addresses were delivered by Kamal Kishore, Special Representative of the Secretary-General for Disaster Risk Reduction, and Lidia Brito, Assistant Director-General for Natural Sciences at UNESCO. The UNESCO Chair also contributed to the roundtable entitled "Technical Session on Landslide Research and Knowledge Mapping."

The UNESCO Chair participates in the project “Resilience Catalysts: a hub for interdisciplinary resilience” (<https://resilienhance.uniud.it/resilience-catalysts>). This project was launched in June 2024 by the UNESCO Chair on Intersectoral Safety for Disaster Risk Reduction and Resilience at the University of Udine (Italy).

Resilience Catalysts is an initiative supported by the Disaster Risk Reduction Section of UNESCO’s Natural Sciences Sector. The project was launched in June 2024 during a webinar that involved numerous UNESCO Chairs from around the world working in the field of disaster risk reduction. The event promoted collaboration among thirty-six participants representing fourteen UNESCO Chairs, UNESCO itself, and other organizations and institutions. The aim of the project is to identify how education and science can be leveraged to achieve transformative governance in disaster preparedness.

The first initiative of the project is the organization of a series of thematic webinars delivered by various UNESCO Chairs (<https://resilienhance.uniud.it/resilience-catalysts>). As part of the activities of the project on 20 June 2025 the UNESCO Chair held a thematic webinar entitled “Risk Assessment and Early Warning for Community Resilience.” The webinar was structured around the following presentations:

- AI for landslide hazard and risk assessment – Prof. Veronica Tofani

- Landslide early warning systems and monitoring strategies for risk management – Prof. Silvia Bianchini
- Impact-based EWS for floods – Prof. Fabio Castelli
- Community participation for flood risk assessment of art cities – Prof. Chiara Arrighi

The recording of the event is available at the following link: <https://resilienhance.uniud.it/resilience-catalysts>.

UNESCO Chair and CPC-UNIFI collaborated in the development of the open-access scientific book series “Progress in Landslide Research and Technology,” published by the International Consortium on Landslides (ICL) and issued by Springer (<https://link.springer.com/series/16796>). The book series represents a global platform for sharing advances in landslide research and related practical applications, contributing to the Kyoto Landslide Commitment 2020 and the 2030 Agenda for Sustainable Development Goals.

The series includes a wide range of contributions, such as research articles, case studies, technical notes, and educational tools, with the aim of improving understanding and reducing landslide disaster risk.

As of December 2025, 8 volumes had been published, containing approximately 200 articles.

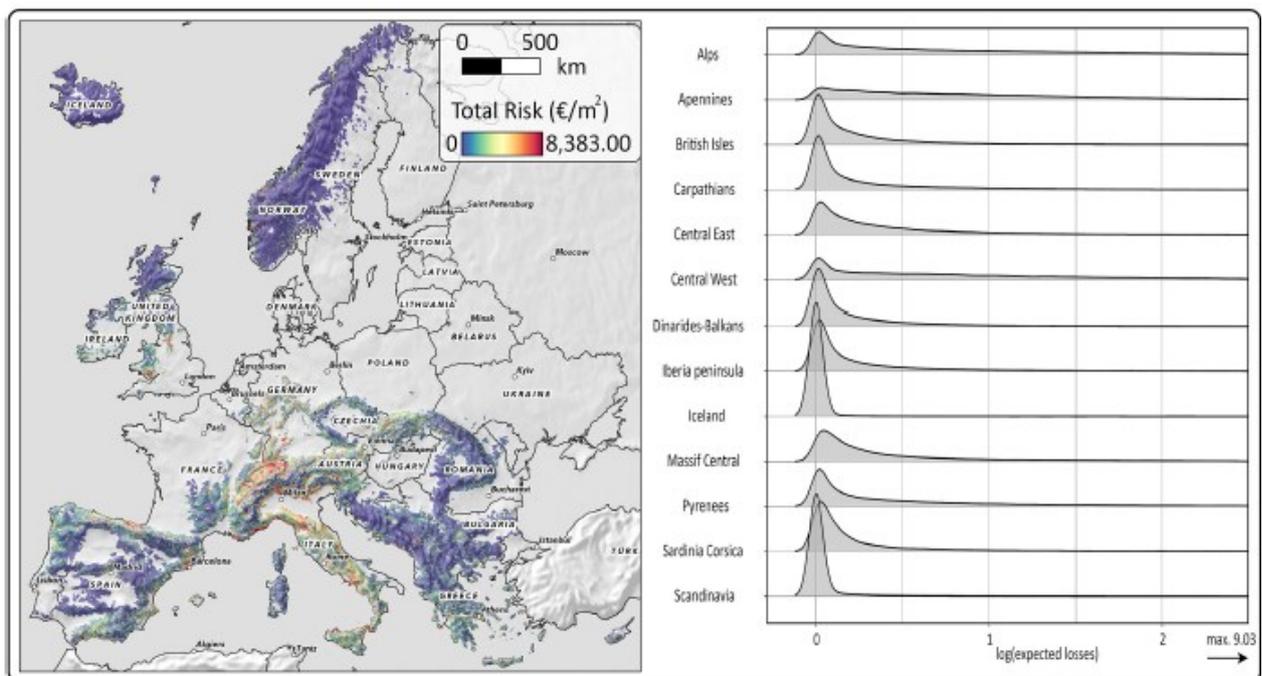
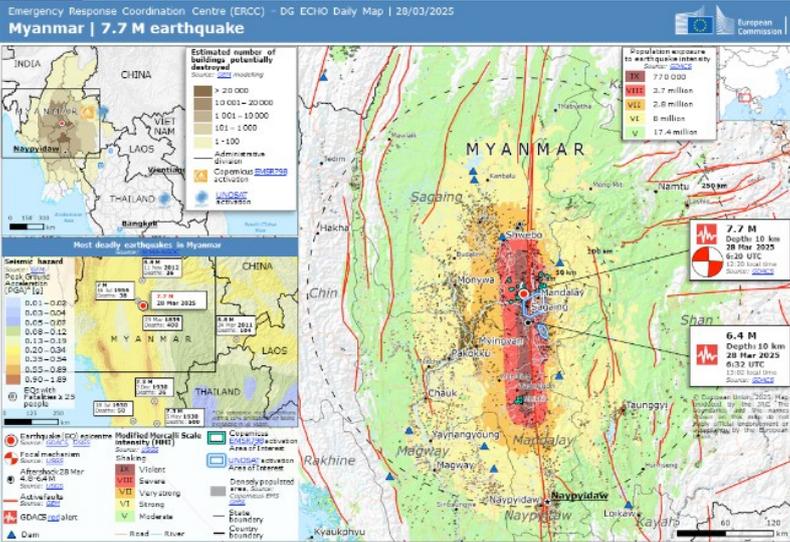


Figure 1: European landslide risk assessment. The left panel shows the cartographic representation of expected economic losses across the European landscape. The right panel reports the distribution of losses for each mountain domain on a logarithmic scale.



Global Earthquake Model (GEM)
Foundation, Italy
<https://www.globalquakemodel.org>



GEM Conference 2026, Zagreb, Croatia

Post-earthquake impact assessment and humanitarian response for Myanmar

The year 2025 marked a period of consolidation, expansion, and growing real-world impact for the Global Earthquake Model (GEM) Foundation. Building on recent strategic developments, GEM strengthened its governance, broadened public sector engagement, and continued to translate open, science-based earthquake risk knowledge into tools and services supporting decision-making worldwide.

Strengthening Governance and Public Engagement

A major development in 2025 was the rollout and first implementation of GEM's new Public Sponsorship Scheme, approved by the Governing Board in late 2024. Designed to widen public sector participation and promote balanced governance, the scheme attracted strong interest, with applications submitted by institutions from 13 countries across multiple regions. The year concluded with the appointment of Uganda's National Building Review Board as a Public Governor through the scheme's merit-based pathway, marking its first use and reinforcing GEM's commitment to engaging public institutions from the Global South.

GEM also welcomed new and renewed public and private sponsors, including its first public and private sector sponsors from Africa. Partnerships with Morocco's Fonds de Solidarité contre les Événements Catastrophiques (FSEC) and Atlantic Re laid the foundation for the development of Morocco's first open national seismic hazard and

risk model, strengthening national capacity while contributing to global risk knowledge.

From Science to Action in Post-Event Response

Throughout the year, GEM's models and data played a growing role in post-earthquake impact assessment and humanitarian response. Following damaging earthquakes in Myanmar, Tibet, Russia, Afghanistan, and the Philippines, GEM provided rapid impact analyses to international partners, including the European Emergency Response Coordination Centre and the World Food Programme. These contributions supported early decision-making when local information was limited, demonstrating the practical value of harmonised global hazard, exposure, and vulnerability models in emergency contexts.

GEM's Post-Event Information resources continued to provide open access to hazard and risk data following major earthquakes, reinforcing the Foundation's role as a trusted provider of independent, science-based information bridging research and response



Prof. Helen Crowley
Secretary-General

E-mail: helen.crowley@globalquakemodel.org

Advancing Open Tools and Risk Modelling

GEM continued to enhance its open modelling ecosystem in 2025 with major releases of the OpenQuake Engine, including a Long-Term Support version 3.23.4 and a subsequent v3.24 release improving performance, scalability, and modelling of secondary hazards. These developments were complemented by new methodologies and datasets, including the Global Earthquake Scenarios (GEESE) rupture matching algorithm, expanded building taxonomy tools, and advances in automated exposure classification using artificial intelligence.

A growing focus on sustainability was reflected in GEM's work on embodied carbon associated with earthquake damage, integrated into both analytical services and global assessments. These efforts support a broader understanding of earthquake risk that extends beyond direct losses to longer-term environmental consequences.

Education, Training, and Capacity Development

Capacity building remained central to GEM's mission. The Foundation delivered multiple training activities across regions, including in-person and regional courses on seismic hazard and risk modelling using the OpenQuake Engine. The annual GEM-EGU Summer School brought together participants from more than 20 countries and introduced GEM's first OpenQuake Engine certification, marking a new step toward structured skills recognition.

Through these initiatives, GEM continued to support students, researchers, and practitioners in applying open tools and consistent methodologies, with a

particular focus on strengthening capacity where resources are limited.

Global Visibility and Leadership

GEM maintained a strong presence in international scientific, policy, and industry forums throughout 2025. Contributions to the United Nations Office for Disaster Risk Reduction's Global Assessment Report (GAR2025) included global seismic risk maps and forward-looking scenarios, highlighting the relevance of open risk data for risk-informed investment and sustainable development. GEM's work was also featured at global platforms and technical meetings addressing disaster risk reduction, infrastructure safety, and catastrophe risk (GEM News).

Recognition of individual and institutional contributions further underscored GEM's standing in the field. Notably, GEM's Head of Risk Engineering received an international civil engineering research prize for contributions to regional seismic risk assessment and open science.

Looking Ahead

As 2025 concluded, GEM was actively preparing for a milestone year in 2026, with the release of a new generation of global seismic hazard and risk products and the organisation of the GEM Conference 2026 in Zagreb. These forthcoming developments reflect the Foundation's continued focus on openness, collaboration, and the practical application of earthquake risk science to support safer and more resilient societies worldwide.



The 2025 GEM-EGU Summer School brought together participants from more than 20 countries and introduced GEM's first OpenQuake Engine certification



GAR2025 Launch



GEM and Uganda's NBRB sign public sponsorship agreement



Release of OQ Long Term Support v3.23



**Universiteit
Leiden**
Institute of Security
and Global Affairs

**Leiden University
Netherlands**

<https://www.universiteitleiden.nl/en/>



A brief description a few of our activities in 2025:

- Participation in the **2025 HNPW (Humanitarian Networks and Partnerships Week)**.
- Participation in the **NATO Emergency Management Exercise “BULGARIA 2025”**, at the NATO Crisis Management and Disaster Response Centre of Excellence in Sofia, Bulgaria.
- Participation in the **2025 European Humanitarian Forum**, Brussels, Belgium.
- Participation in the **2025 IPSA Congress**, Seoul, South Korea.
- Participation in the **UMI EUCPM Course**, Volterra, Italy.
- Lecturer in the **Humanitarian Logistics Master’s program at UNIVPM**.
- Lecturer in the **CSM Master’s program at Leiden University**, teaching the courses Humanitarian Response to Disasters and Emergencies and Crisis and Risk Communication.

• Organization of the symposium **“Cybersecurity in Organizations in the Netherlands”**, The Hague, the Netherlands.

- **Erasmus+ International Credit Mobility (ICM)** visit to areas affected by the **2011 Japanese tsunami**.
- Submission of the following papers:
 - “Application of Dynamic Behavioral Simulation Models to Patient Flows in Emergency Medical Teams.” Bernardini, Beneitez Pajares, D’Orazio, Quagliarini, Bartolucci.
 - “Borderless Interventionism: The Politics of International Disaster Response During Civil Wars.” Bartolucci, Tortolini, D’Amato. *Global Studies Quarterly*. DOI: 10.1093/isagsq/ksag005.
 - “Cybersecurity Threats, Challenges, and Strategies in Humanitarian Operations: A Scoping Review.” Anfuso, Bartolucci, Del Real,



Prof. Andrea Bartolucci

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Senter for
beredskap og samvirke
NORDLAB

Centre for Crisis Management and Collaboration—Nordlab, Nord University Norway

<https://www.nord.no/en/>



In 2025, the Center for Crisis Management and Collaboration – Nordlab was relaunched after a significant expansion of its premises in Bodø at the Nord University Business School

- Memorandum of Understanding between Nord university (Nordlab) and Norwegian Radiation and Nuclear Safety Authority
- Contribution to the Program and Scientific committees at the Arctic Emergency Management Conference 18-20 March, 2025 <https://www.uarctic.org/news/2025/9/strengthening-arctic-emergency-management-the-2025-conference-report-is-out/>
- Mass rescue operation simulation exercise, 27 March 2025, Joint Rescue Coordination Centre, Nordlab and Nordland vocational maritime school
- ATOMEX simulation exercise 2025, 25 April 2025, Bodø, Nordlab. The purpose was to operationalize and reduce the complexity of inter-agency collaboration in preparing for radiological and nuclear emergencies in the maritime Arctic region
- Nordlab sessions and exercises for the Emergency Preparedness Network in Møre og Romsdal municipalities in Norway, 2024-2025

- Evaluation of the Collaboration Exercises Nord and crisis management team at Nord University

- Exercise Vestfjord: Municipal crisis management, for municipal leaders, executive master students from University of Bergen

- Exercise for the Incident Response Team at Nord University
- Exercise Coastal Preparedness for emergency responders, Nord master students in preparedness and emergency management
- Summer course “Digitalizing Public Emergency Communication”, in cooperation with PRIO Peace Research Institute in Oslo, August 2025 <https://www.nord.no/aktuelt/fra-sirener-til-digital-varslingskan-vi-stole-pa-teknologien>
- Master’s programme “Emergency Preparedness and Crisis Management” <https://www.nord.no/en/studies/emergency-preparedness-and-crisis-management-masters-programme>
- Flexible lifelong learning program “Wildland Fires in the Arctic” <https://www.nord.no/en/studies/wildland-fires-in-the-arctic-shorter-programme>
- Flexible lifelong learning program “Municipal Crisis Management and Collaboration” <https://www.nord.no/studier/kommunalt-beredskapssamvirke>
- Flexible lifelong learning program “Health Preparedness” <https://www.nord.no/studier/helseberedskap>
- Intensive course Security Risk Management, cooperation of Turiba University Latvia, Nord University, Laurea University of Applied Sciences and Tallinn University of Technology
- Establishing of the Arena for Arctic Maritime Partnership, Maritime Forum Nord, Nord University and UIT, <https://www.highnorthnews.com/naeringsliv/samler-den-maritime-kompetansen-i-arktisk/1094930>



Prof. Natalia Andreassen

E-mail: Dimitrios.tzioutzios@ntnu.edu

Research grant projects ongoing in 2025

<https://www.nord.no/om/fakulteter-og-sentre/handelshogskolen/senter-og-samarbeid/nordlab/prosjekter-hos-nordlab>

- ATOMEX: Collaboration Complexity in Nuclear Emergency Preparedness in the Maritime Arctic (2023-2026), funded by Research Council of Norway
- PrepChild: Centre for Children and Youth, and Social Preparedness (2025-2029), funded by the Research Council of Norway
- Pre-project Research infrastructure for technology-supported crisis management (2025-2026), funded by the Research Council of Norway
- Student Barents Rescue Exercise: Wildland Fires (2024-2026), funded by UArctic
- CLEAR: Crisis Leadership in the Arctic Response (2025–2027), funded by UArctic of
- CCArctic: Collaboration for advancing crisis management research and education in the Arctic (2024-2025), funded by UArctic
- Small Modular Reactors Emergency Preparedness in the Arctic (2024-2025), funded by Nord Seed Funding for International Research Collaboration
- NORDPLUS Intensive Course on Security Risk Management (2024-2025), funded by EU Nordplus

Events in 2025

- Arctic Emergency Management Conference, 18-20 March 2025, Bodø, Norway. The conference was part of the official program of the Norwegian Chairship of the Arctic Council (2023-2025). The main organizers are Emergency Prevention, Preparedness and Response Working Group of the Arctic Council (EPPR) and Nord University <https://arctic-council.org/about/previous-chairmanships/norway-chair-2/arctic-emergency-management-conference/>
- Poster and demonstrations in Arctic Emergency Management, 18-19 March 2025, sessions organized by Nordlab as a part of the Arctic Emergency Management Conference
- The Indigenous Knowledge Mobilization Workshop, 19-20 March 2025, took place at Nordlab as a part of the Arctic Emergency Management Conference, organized by the Inuit Circumpolar Council
- Arctic oil spill research and development initiative workshop, took place at Nordlab as a part of the Arctic Emergency Management Conference, organized by Oil Spill R&D Initiative, EPPR
- Participation at the Arctic Guardian 2025, the Arctic

Coast Guard Forum's multilateral live exercise in Search and Rescue and Marine Environmental Response

- Presentation at the 22nd International ISCRAM Conference, Halifax, Canada: Managing and Responding to Coastal Disasters and Climate Change, 18-21 May 2025

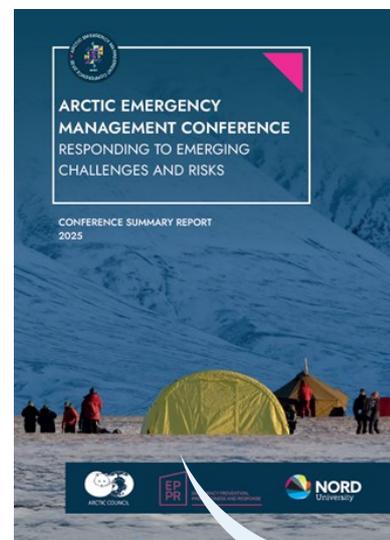
Workshop “Future steps in the Student Barents Rescue consortium”, organized in Sweden at Mid-Sweden university, June 2025, <https://www.uarctic.org/news/2025/9/study-visit-to-sweden-and-important-milestones-for-the-student-barents-rescue-exercise-wildland-fires/>

Presentations at the International Conference on Applied Human Factors and Ergonomics, July 2025, <https://ahfe.org/>

- Nordlab seminar “Navigating through pandemics”, September 2025

Panel discussion at the Arctic Circle Assembly “Arctic Emergency Management: Insights for Moving Forward”, October 2025, Iceland, <https://www.arcticcircle.org/assemblies/2025-arctic-circle-assembly>

- Seminar “Risk and robustness in public procurements”, in cooperation with Procurement Academy, November 2025
- Workshop “Arena for Arctic Maritime Partnership”, December 2025
- Workshop “Crisis Leadership in the Arctic Response”, December 2025 <https://www.uarctic.org/news/2025/12/preparing-arctic-communities-for-crisis-project-clear/>



AEMC Conference report, Arctic Council, EPPR, Nord University <https://hdl.handle.net/11374/3370>

Online events

- Student Barents Rescue Exercise 2025 – annual exercise in partnership of UiT (Bachelor in International Preparedness), Nord university (Nordlab) in Norway, Mid-Sweden University in Sweden and Laurea University of Applied Sciences in Finland
- ATOMEX Tabletop exercise 2025, 24 April 2025. The purpose of the exercises was to identify and assess risks and uncertainties related to preparedness and collaboration in radiological or nuclear maritime search and rescue operations
- ATOMØVELSE 2025 Nuclear preparedness tabletop exercise for master students in Emergency Preparedness and Crisis Management

Publications

- Andreassen, N., Elvegård, R. & Bjerkemo, O.K. (2025). *Arctic Emergency Management Conference Summary Report 2025*, <https://oaarchive.arctic-council.org/items/a5975993-5b9b-42cb-88dd-0afdc3ee8817>
- Andreassen, N., Elvegård, R., Eid, J., & Espevik, R. (2025). Enhancing Norway's local emergency preparedness with municipal crisis team exercising. *Proceedings of the International ISCRAM Conference*. <https://doi.org/10.59297/sdbhw404>
- Austerheim, H., Elvegård, R., Andreassen, N., & Badu, J. (2025). *Evaluation of Collaboration Exercise Nord 2025*, Nord University, <https://hdl.handle.net/11250/5344687>
- Austerheim, H., Ikonen, E., Elvegård, R., & Andreassen, N. (2025). *Arctic Health Preparedness Conference Report*, [https://oaarchive.arctic-](https://oaarchive.arctic-council.org/items/8dfd27ab-14d2-4ac7-8b31-18db84d0608d/full)

[council.org/items/8dfd27ab-14d2-4ac7-8b31-18db84d0608d/full](https://oaarchive.arctic-council.org/items/8dfd27ab-14d2-4ac7-8b31-18db84d0608d/full)

- Badu, J., Andreassen, N., Elvegård, R., & Nazir, S. (2025). From gaps to gains: Exploring how professional diversity influences situational awareness in collaborative environments. *Applied Human Factors and Ergonomics International*, <http://dx.doi.org/10.54941/ahfe1006651>
- Badu, J., Sætren, G. B., Taarup-Esbensen, J., & Kruke, B. I. (2025). Trust in risk communication: Local versus national responses to climate-related risks in Longyearbyen-Svalbard. In *Proceedings: 35th European Safety and Reliability Conference and the 33rd Society for Risk Analysis Europe Conference*, https://doi.org/10.3850/978-981-94-3281-3_ESREL-SRA-E2025-P8367-cd
- Elvegård, R., Andreassen, N., Ikonen, E., Markkanen, M., & Kropsu, M. (2025). Collaborative risk assessment in the Arctic: Lessons from the ATOMEX tabletop exercise and INCLUS assessment tool. *Applied Human Factors and Ergonomics International*. <http://dx.doi.org/10.54941/ahfe1006654>
- Labib, A., Jones, D., Andreassen, N., Elvegård, R., & Dominguez Cainzos, M. (2025). Characterization and modelling of potential seaborne disasters, in the Arctic and North Atlantic region, *Applied Sciences*, 15 (2), 782, <https://doi.org/10.3390/app15020782>
- Olsen, J., Meyer, A., Iversen, L., Schildberg, U., Bjørnsen, R. H., Hovelsrud, G. K., Badu, J., Brode-Roger, D., Craciun, A., Christiansen, H. H., & Endresen, L. C. (2025). Building transdisciplinary bridges and learning from the Svalbard context. *The Polar Journal*, 1–25. <https://doi.org/10.1080/2154896x.2025.2569950>



Arctic Health Preparedness Conference Report, <https://oaarchive.arctic-council.org/items/8dfd27ab-14d2-4ac7-8b31-18db84d0608d/full>



Nordlab maritime preparedness simulation exercises (photo: Adrian Svendsen Bensvik)

Center for Crisis Management and Collaboration – Nordlab is the Center for research, education and competence development within the fields of preparedness and collaboration in the High North. Nordlab focuses on practice-based research and education in preparedness, societal security and collaboration, and contributes to Nord University's strategic focus area in societal security. The exercise and simulation laboratory, Nordlab, consists of modern facilities with advanced technology that enable the implementation of various types of exercises, research

activities, teaching, as well as networking and dialogue with emergency response actors and industry. Through Nordlab, we offer pedagogical support for developing and facilitating various types of crisis management exercises, as well as evaluations.

- <https://www.nord.no/en/about/faculties-and-centres/nord-university-business-school/centres-and-collaboration/nordlab>
- LinkedIn <https://www.linkedin.com/company/nordlab>



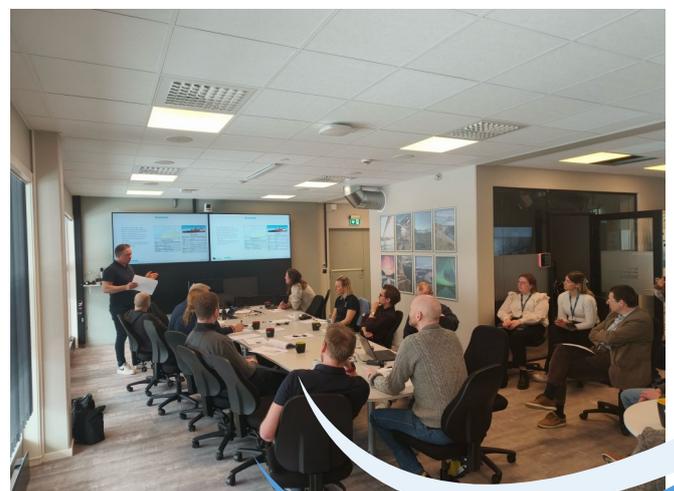
Center for crisis management and collaboration – Nordlab upgraded exercise rooms and facilities, Nord University, Norway (photo: Adrian Svendsen Bensvik)



Formal establishment of the Arena for Arctic Maritime Partnership (AAMP) (from left) Rune Elvegård, leader for Center for Crisis Management and Collaboration - Nordlab at Nord University, Tor Husjord at Maritime Forum Nord og Bjørn-Morten Baltalen, dean at UiT- The Arctic University of Norway. Photo: Inger E. Eftevand Orvin



Poster and demonstrations session at the Arctic Emergency Management Conference, 18-20 March 2025, Nord University, Bodø (photo: Jessica Cook/Arctic Council Secretariat)



ATOMEX simulation exercise in nuclear maritime search and rescue 2025, Center for Crisis Management and

Strengthening Civil Security: Advancing Knowledge for Natech Risk Reduction

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Introduction

- Natural hazards triggered by the impact of (natural) accidents occur before or during the lifecycle, from design to end-of-life of infrastructure, causing cascading effects.
- These accidents can result in human casualties and property damage, posing risks to human safety, the environment, and economic stability.
- The high-level of disaster preparedness and resilience of society's residents, urban infrastructure, facilities, and to a broader extent.
- An overall hazard and systemic resilience increases, understanding and mitigating the risks to civil safety.
- The MTP's research group advances knowledge through interdisciplinary approaches, focused on a systematic, evidence-based, and practice-oriented research.

Objectives

1. Develop Assessment Frameworks: Establish methodological frameworks to evaluate Natech hazards and cascading failure risks, including natural and technological hazards, emergency plans, infrastructure, risk communication, regulations, and emergency response.
2. Enhance Infrastructure Resilience: Assess vulnerabilities and integrate advanced technologies for improved safety.
3. Support Policy and Decision Making: Provide evidence-based recommendations to inform policy-making and disaster risk reduction efforts.

Approach Overview



Expected Contributions

- Societal Impact:**
 - Establishing Assessment Framework for Natech Risk Assessment
 - Advancing Knowledge in cascading failure modelling and risk-based decision-making
 - Enhancing resilience of critical infrastructure through technical and organisational measures
- Economic and Technological Impact:**
 - Enhancing resilience of critical infrastructure systems
 - Supporting policy recommendations for improved Natech risk prevention
 - Promoting technological innovation in proactive analysis and infrastructure safety
- Societal Impact:**
 - Improving Safety and Risk Assessment: Develop training programs to enlighten relevant stakeholders on infrastructure safety
 - Supporting Risk Assessment: Develop evidence-based decision-making tools for infrastructure safety
 - Promoting Resilience: Develop evidence-based decision-making tools for infrastructure safety

Acknowledgements

The research is funded by the Norwegian Research Council (RCN) through the MTP program. We also acknowledge the support of the following partners:

- Norwegian Research Council (RCN)
- Department of Mechanical and Industrial Engineering, NTNU
- Department of Urban and Environmental Engineering, NTNU
- Department of Civil and Environmental Engineering, NTNU
- Department of Energy and Environment, NTNU
- Department of Health, Safety and Environment, NTNU
- Department of Information Systems, NTNU
- Department of Law, NTNU
- Department of Management, NTNU
- Department of Mathematics, NTNU
- Department of Physics, NTNU
- Department of Psychology, NTNU
- Department of Sociology, NTNU
- Department of Statistics, NTNU
- Department of Urban and Environmental Engineering, NTNU
- Department of Energy and Environment, NTNU
- Department of Health, Safety and Environment, NTNU
- Department of Information Systems, NTNU
- Department of Law, NTNU
- Department of Management, NTNU
- Department of Mathematics, NTNU
- Department of Physics, NTNU
- Department of Psychology, NTNU
- Department of Sociology, NTNU
- Department of Statistics, NTNU

In 2025, NTNU's Department of Mechanical and Industrial Engineering (MTP) consolidated its position as a leading research and education environment at the intersection of risk science, energy transition, and civil security.

Throughout the year, the Department strengthened its international footprint, expanded interdisciplinary collaboration, advanced doctoral education, and delivered high-impact research outcomes. Particular attention was given to Natech (natural hazard-triggered technological) risks and hydrogen safety, both of which are increasingly central to resilient infrastructure and the green energy transition.

International Engagement

A key milestone was NTNU MTP's admission to the Global Alliance of Disaster Research Institutes (GADRI). Membership in this global alliance strengthens collaboration in disaster risk science and positions MTP within an international platform committed to advancing evidence-based DRR policy and practice. Through this network, the Department expands its engagement in joint research, knowledge exchange, and capacity-building efforts aimed at enhancing global resilience to disasters

Academic Contribution

2025 was the second year of the newly established PhD-level course on Natech risk assessment and management offered by MTP.

Building on its successful launch, the course further developed analytical and methodological frameworks for assessing and managing cascading risks triggered when natural hazards impact technological systems. Against the backdrop of climate change and

increasingly frequent extreme weather events, these scenarios represent escalating threats to industrial facilities and critical infrastructure. The curriculum integrates probabilistic risk assessment, scenario modelling, safety barrier analysis, regulatory frameworks, and governance considerations. By sustaining this advanced training offer, MTP continues to strengthen doctoral-level expertise in complex socio-technical systems and systemic risk governance.

Interdisciplinary Research Group on Civil Security Against Natech Accidents

Similarly, 2025 marked the second year of operation of NTNU's interdisciplinary research group on Civil Security against Natech accidents, led by MTP (<https://www.ntnu.edu/civil-security/natech>). The group consolidates expertise from engineering, ICT, social sciences, psychology, medicine, and urban planning to address prevention, mitigation, preparedness, and response to Natech events. Its continued development underscores the recognition that such accidents emerge at the intersection of natural hazards and technological systems, requiring integrated and cross-disciplinary approaches to civil security and resilience.

As climate-related hazards intensify, industrial and energy infrastructures face heightened exposure and vulnerability. As presented at the EU-Japan Workshop on Research and Innovation in Support of Disaster Risk Reduction in Kyoto (2025) the new research group adopts a systems-oriented approach, combining technical risk modelling, organisational resilience, human factors research, emergency management, and societal risk perception analysis. By bridging technical and social domains, NTNU enhances its capacity to develop robust civil security strategies capable of addressing cascading and interconnected risks.



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Launch of H₂SCORE: Horizon Europe Clean Hydrogen Partnership Project

At the end of 2025, a major four-year research project under the Horizon Europe Clean Hydrogen Partnership programme was launched: Hydrogen Storage and Fuel Cells for Optimised Renewable Energy Communities (H₂SCORE). Led by Politecnico di Torino, the project involves 15 international partners, including MTP (<https://cordis.europa.eu/project/id/101251551>). It represents a significant step towards embedding safety, resilience, and sustainability principles into renewable energy systems.

H₂SCORE aims to demonstrate how integrated Fuel Cell and Hydrogen technologies can enable the next generation of Renewable Energy Communities (RECs), enhancing decarbonisation, energy autonomy, and infrastructure robustness. The project integrates low-temperature hydrogen technologies such as PEM electrolyzers, metal hydride storage, and PEM fuel cells with high-temperature reversible Solid Oxide Cells powered by biomass-derived syngas. The resulting modular architecture couples electricity, heat, hydrogen, and biomass vectors in a replicable system design.

The H₂SCORE demonstration will take place in the Valsesia Renewable Energy Community in Quarona, Italy, where the system will be integrated with the local electricity grid and district heating network to enable sector coupling and multi-vector optimisation through an advanced Energy Management System. A hydrogen-powered fuel cell generator will support temporary and mobile uses. Operating at Technology Readiness Level 7, the project includes a 12-month demonstration with real-time monitoring and hydrogen leak detection. Replication studies in Italy, Switzerland, Spain, and Canada will assess adaptability. NTNU contributes through integrated safety and social assessment, combining Hazard Identification, Quantitative Risk Assessment, and social acceptance analysis to support risk-informed, resilient hydrogen deployment.



Successful Completion of the SUSHy Project

In Spring 2025, the three-year SUSHy project concluded successfully under NTNU's leadership. Conducted with five international partners through the [European Interest Group \(EIG\) CONCERT-Japan](#) platform, SUSHy addressed the safety, sustainability, and economic challenges associated with hydrogen production and refuelling infrastructure.

SUSHy, short for SUStainability and cost-reduction of Hydrogen stations through risk-based, multidisciplinary approaches (<https://sushyproject.com>), recognised that hydrogen deployment is shaped not only by technical complexity but also by socioeconomic uncertainty and public risk perception. The project developed an integrated risk-based framework to enhance accident prevention, occupational safety, system optimisation, and long-term sustainability.

Research activities focused on modelling hybrid renewable-powered hydrogen production and fuelling facilities while accounting for uncertainty and multi-criteria trade-offs. NTNU led key work on emergency safety for Hydrogen Refuelling Stations, examining technical and organisational safety barriers, protection system design, and emergency response planning. The project also investigated community perception and preparedness, reinforcing the importance of societal dimensions in technological risk governance.

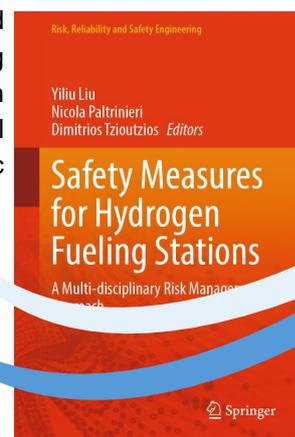


Publication of book on Safety Measures for Hydrogen Refuelling Stations

A major outcome of SUSHy was the publication of *Safety Measures for Hydrogen Fueling Stations: A Multi-disciplinary Risk Management Approach* (2025), edited by Yiliu Liu, Nicola Paltrinieri, and Dimitrios Tzioutzios (<https://doi.org/10.1007/978-981-96-9412-9>) from MTP. The volume provides a comprehensive analysis of Hydrogen Refuelling Station safety from technical, organisational, social, and economic perspectives.

The book proposes a multidisciplinary risk management framework integrating system modelling, uncertainty analysis, organisational safety culture, and stakeholder

communication. It advances a unified methodology for assessing risks and opportunities across hydrogen production, storage, and refuelling phases. By addressing accident prevention, mitigation strategies, organisational learning, and public communication, the publication makes a substantial scholarly contribution to hydrogen safety and DRR-oriented energy transition research.





Fire University Poland

<https://www.apoz.edu.pl>



Fig. 1. During the High Level Civil Protection Course (1)



Fig. 2. After the High Level Civil Protection Course

Organizational units of Fire University were actively participating in disaster risk reduction (DRR) due to natural hazards and man-made events. There were the Institute of Safety Engineering, the Institute of Internal Security, the Faculty of Safety Engineering and Civil Protection and the Firefighting Rescue Unit of APoż. Consequently, during the sixth full year of participation in GADRI, APoż covered research, educational and operational areas of the reduction, also considering geo-political tensions between NATO and Russia as well as the military conflict in Ukraine.

In the period reported, APoż was doing research in the following international projects related to DRR:

- Integrated Technological and Information Platform for wildfire Management (SILVANUS), Horizon 2020.
- Comprehensive Hazard Identification, and Monitoring systEm for uRban Areas (CHIMERA), Horizon Europe.
- Developing resilience against extreme weather threats caused by climate change at local level in Central Europe (LOCALIENCE), Interreg Central Europe

Doctoral dissertations were carried out in security studies (in social sciences), environmental engineering, mining and power engineering (in technical sciences), and safety engineering (in technical sciences).

APoz was actively participating in evolution of Polish law acts that focus on civil protection and civil defense. The university has been becoming the primary training entity in civil protection and civil defense in Poland since 2025. As regards the year reported, APoz conducted 32 editions of High Level Civil Protection courses for ministers, secretaries of the state, primary commanders, governors of province, province marshals and governors of district. Other kinds of civil protection and civil defense courses covered all State Fire Service chiefs and representatives of multiple safety- and security-related institutions.

APoz actively participated in the Union Civil Protection Mechanism, including Union Civil Protection Knowledge Network.



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UNIVERSITY OF ŽILINA
Faculty of Security
Engineering

Department
of Crisis Management

Department of Crisis Management University of Žilina, Slovakia

<https://www.uniza.sk/en/>



The Department of Crisis Management and its researchers and academic staff took part in several interesting and beneficial activities last year, which significantly contributed to the development of crisis management education, research, and practice at Faculty of Security Engineering, University of Žilina.

One of the most important achievements was the development of the “Methodology for Risk Assessment in Critical Infrastructure Sectors” in cooperation with the Crisis Management Section of the Ministry of the Interior. This comprehensive methodology provides a structured framework for identifying, analysing, and evaluating risks in key sectors of critical infrastructure. It was subsequently adopted by the Government of the Slovak Republic, together with other strategic documents, as part of the resilience strategy for critical entities in Slovakia, fulfilling one of the main requirements of the European Commission in the implementation of the CER Directive. This step represents a major recognition of our expert work and confirms the department's role in shaping national security and resilience policies: https://www.minv.sk/?Metodika_posudenia_rizika_v_sektoroch_kritickej_infrastruktury

Another great achievement was the continuation of our cooperation with the Estonian Academy of Security Sciences within the course “WE Rise Together in Civil Protection and Civil Defence”, where Slovak and Estonian students worked and

trained together in disaster management scenarios. Through joint exercises, simulations, and team-based problem-solving, the students obtained an international certificate and will also travel to Estonia for an internship in 2026. This international training and mobility significantly strengthen their practical skills, intercultural competencies, and cross-border cooperation in crisis management, which are essential for enhancing overall security and resilience in the European context.



Dr. Katarina Holla

Associate Professor;

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Within the European project UNICOPS, we completed the “inspection visit” as part of the project UNICOPS – Universal CBRNE Protection System Supporting the Security and Openness of Universities. We joined the project as partners of the consortium in 2025: <https://unicops.eu/>. It was a great day full of inspiring ideas and proposals, and above all a whole day of thinking about security, which should be important to all of us. During the visit, experts assessed existing procedures, infrastructures, and preparedness measures. The UNICOPS project compares 12 universities in the EU in order to identify critical areas and, most importantly, to share experience and best practices in the field of preparedness for CBRN and HAZMAT incidents, thereby helping universities to create safer and more resilient academic environments.

In July, colleagues from our department went on a business trip to Plzeň (Czech Republic). As part of the project “We Give People the Power to Help”, they obtained for FBI UNIZA a virtual reality first aid training scenario. This state-of-the-art tool enables students to experience realistic emergency situations in a safe and controlled environment and to practice correct decision-making under stress. As the first institution in Slovakia, we will integrate this innovative approach to first aid training into the teaching at the Department of Crisis Management, in the courses Occupational Health and Safety and Civil Protection. In this way, we will enhance the practical preparedness, self-confidence, and safety competencies of our students, and increase the attractiveness and effectiveness of teaching.



Last year, another important activity took place: a survival course in the heart of the Low Tatras, attended by students from all departments of FBI UNIZA and led by experienced instructors from the Department of Crisis Management and external experts. Over several demanding days in the field, the students acquired basic theoretical knowledge and practical skills needed for survival in the field and in extreme conditions. They learned the basics of first aid, how to build a shelter in nature, how to orient themselves in terrain, how to work with limited resources, and how to tie essential knots. Their stay was enriched by lectures, demonstrations of equipment, and practical exercises provided by soldiers from the 5th Special Forces Regiment in Žilina. The course not only strengthened their professional skills, but also their teamwork, resilience, and ability to cope with challenging and unexpected situations.

As part of the RETIME project, we carried out multi-criteria risk assessments in three pilot studies for various groups, including vulnerable populations. We developed our own procedures and methodology, which form a key input to the emergency protocols. This was a very interesting cooperation, especially in the context of “place-based innovations for climate-resilient cities”. RETIME develops adaptation solutions to strengthen building resilience, provide timely alerts, and reduce the impacts of storms, flash floods, wildfires, and heat and cold waves. These technologies are being tested in three pilot areas – Lisbon, Žilina and Tartu – allowing for tailored, locally adapted solutions that better reflect people’s real needs. Link: <https://retime-project.eu/>

Follow us: https://www.instagram.com/krizaci_fbiuniza/





The Risk and Crisis Research Centre (RCR) at Mid Sweden University has been involved in several different projects during the year. The breadth of projects spans from examining how new technology in the emergency services affects work practices, collaboration, and information sharing; to studying how Covid-19 challenged the Nordic countries' crisis management systems and how it has developed since through lessons learned; to transforming cities and towns to sustainable food systems through urban community gardens. A list of current projects can be found below.

Among the activities of 2025, one project to highlight is the Horizon Europe project FUTURESILIENCE. In its final year, the RCR Simulation Lab was involved in designing and implementing a validation exercise. Consisting of three phases across two days: simulation, policy workshop, and reporting, the simulation brought to life a catastrophic storm threatening the fictional city of Veilburgh. A background film was produced in order to introduce the city and its many challenges.

Exercise participants viewed this film before joining Veilburgh's Fire and rescue services chief (a live actor) on a reconnaissance mission to several city areas, visualized in the RCR Simulation Lab 8m x 8m

immersive simulation room.

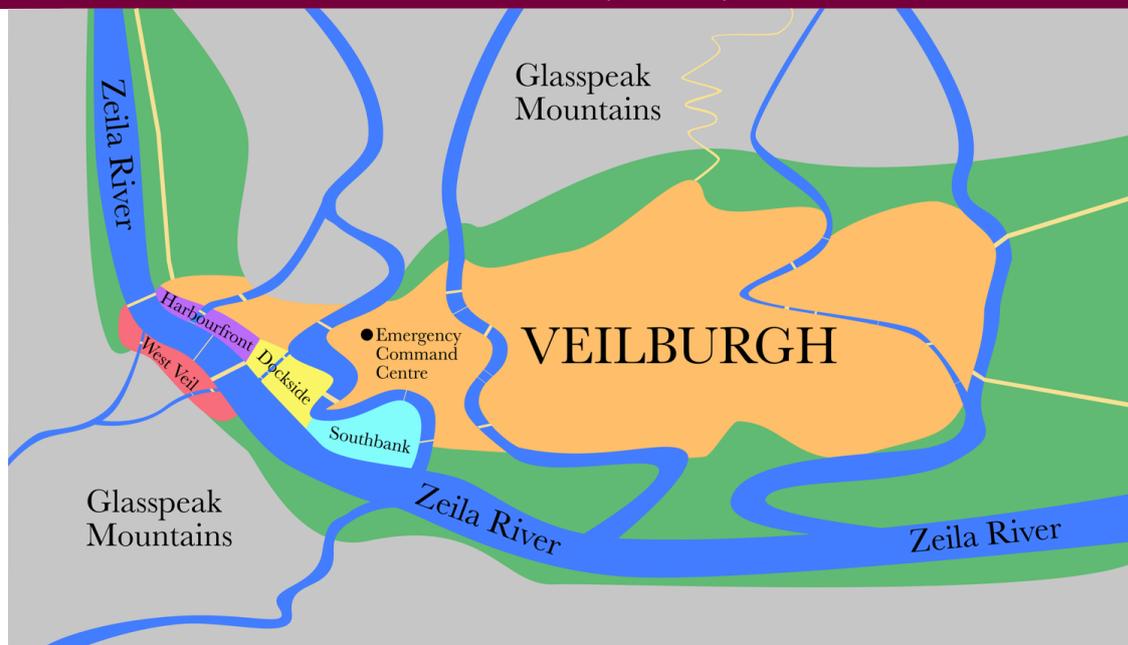
Also to highlight is a new book by RCR researchers Evangelia Petridou and Jörgen Sparf (along with Nikolaos Zahariadis and Thomas Birkland). The book "Policy Entrepreneurs, Crises, and Policy Change" delves into the topic of policy entrepreneurship and crisis management and offers unique insights into how policy entrepreneurs navigate and influence governance during various types of crises.

RCR has also welcomed guests during the year, one visit to mention is James Kendra, co-director of the Disaster Research Center at the University of Delaware in the US, and professor in the Biden School of Public Policy and Administration. DRC is the oldest center in the world devoted to the social science and management aspect of disasters, founded in 1963.



Prof. Aron Larsson

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Projects:

- **ClimaResponse – Responsive Local Action for Climate Change Adaptation and Disaster Risk Reduction**
- ClimaResponse is a transnational project helping municipalities and regional authorities in the Baltic Sea Region improve their climate resilience by providing practical tools, evidence-based approaches, and innovative solutions for climate adaptation and disaster risk reduction.
- **Communication technology for critical public services**
- Rakel G2 is the next generation of Sweden’s national communication system for vital public services. The project follows the implementation of Rakel G2 and explores how new technology affects work practices, collaboration, and information sharing in crisis management and public safety.
- **FUTUREILIENCE**
- The FUTUREILIENCE project (Creating future societal resilience through innovative, science-based co-creation labs) aims to strengthen European economic and social resilience through an enhanced ability to quickly respond to future crises.
- **HUSS-Hybrid Teams under Special Healthcare Leadership**
- This project focuses on special healthcare leadership teams (SSL) and what happens if/when the organization of SSL is conducted through hybrid solutions due to societal disruptions.
- **Landscape management in the Wildland-Urban Interface to reduce future wildfire vulnerability for communities. What are the barriers to change?**
- The aim of this project is to formulate, through a socio-environmental framework, how integrated landscape management in the Wildland-Urban Interface (WUI) can reduce communities’ vulnerability to wildfire.
- **LEGITIPREP □ Boundaries of Legitimation: Crisis Normalization and Preparedness**
- LEGITIPREP is a three-year project that aims to increase knowledge about legitimacy in crisis areas and how trust in the authorities is affected by it.
- **RESECTOR: Reinterpreting Sector Responsibility in Nordic Crisis Management after COVID □ 19**
- The research project aims to study how COVID-19 challenged the Nordic countries' crisis management systems and, through lessons, promote the development of crisis management in the Nordic countries, focusing on cross-sectoral crisis management.
- **The integration network in Västernorrland over 40 years**
- This project aims to compile and analyze experiences – in the form of a knowledge bank – from the Integration Network of Västernorrland during the period 1985-2024. The analysis will serve as the basis for future integration-promoting measures in Västernorrland.
- **Transforming cities and towns to sustainable food systems through urban gardening**
- This research project focuses on barriers and possibilities for increased community gardening in small and medium-sized towns in Sweden. We particularly explore the potential of using community gardening as a means to create more sustainable towns and cities.



Volume 16, Issue 4

August 2025

Special Issue: Polycrisis and Systemic Risks

Core Ongoing SEI Projects Focused on DRR, Climate Risk, and Systemic Stress

- CrisAct – Hydro-Climatic Hazard, Risk & Crisis Management** *Science for a secure society: Hydro-climatic hazard, risk, and crisis management in Sweden* — integrates hazard monitoring, early warning, risk mapping and climate adaptation frameworks for droughts, floods and heat waves. **Project page:** <https://www.sei.org/projects/crisact/>
- ClimaResponse – Responsive Local Action for Climate Adaptation & DRR** *ClimaResponse* supports local and regional authorities in the Baltic Sea Region to build climate resilience and disaster risk reduction capacity through tools, guidance and co-creation of solutions. **Project page:** <https://www.sei.org/projects/climaresponse-eng/>
- Increased Preparedness for Swedish Port Regions** *Increased Preparedness for Swedish Port Regions* investigates climate risks and potential domino effects affecting Swedish ports and develops a climate service and adaptation roadmaps. **Project page:** <https://www.sei.org/projects/okad-beredskap-for-svenska-hamnregioner/>
- Resilient Coasts – Caribbean Sea** Caribbean nations are exceptionally vulnerable to natural disasters and the coastal impacts of climate change. The Resilient Coasts – Caribbean Sea project will develop Living Labs where local communities explore how they can bolster their resilience by restoring coastal ecosystems and applying nature-based solutions. The project will not only enhance local capacity but help create a viable business case for nature-based solutions. **Project page:** <https://www.sei.org/projects/resilient-coasts-caribbean-sea/>
- RiskSec 2.0 – Local Climate Adaptation & Risk Governance** *RISKSEC 2.0* explores how risk governance and securitisation shape local climate

adaptation in European municipalities. **Project page:** <https://www.sei.org/projects/risksec-2-0/>

- Extreme weather and food security: effects, measures and solutions** The Formas supported *Extreme weather* project aims to build resilience in the global food system by exploring trade and environmental connections between distant global geographies. Researchers will investigate effects, measures and solutions for long-term sustainable and resilient societies in Sweden and abroad. **Project page:** <https://www.sei.org/projects/extreme-weather/>

To see more SEI's research, publications and features on disaster risk, climate resilience and linked systemic risks: <https://www.sei.org/topics/disaster-risk/>

A publication highlight:

SEI is part of the organizers and contributor for the *International Journal of Disaster Risk Science* special issue on **polycrisis and systemic risk** (2025, Vol. 16, Issue 4): The issue brings together interdisciplinary research on **polycrisis**—overlapping, mutually reinforcing global crises—and **systemic risk**, the cascading breakdowns these interconnected pressures cause across natural, social, technological, and economic systems. It emphasizes that traditional, linear risk models are inadequate for today's complexity, and advocates for **integrated, inter- and transdisciplinary approaches** to risk assessment, governance, communication, and inclusive stakeholder engagement. Key articles review conceptual foundations, highlight ethical dimensions of resilience, propose community-based governance frameworks, explore positive resilience co-benefits, and present case studies on critical infrastructure and systemic interdependencies. Across contributions, the issue underscores the need for **holistic systemic thinking**, innovative tools, and collaborative policy responses to better understand and manage cascading, compounding risks in an increasingly fragile world- (All articles are open access at <https://link.springer.com/journal/13753/volumes-and-issues/16-4>)



Prof. Guoyi Han

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The disaster resilience group at Anglia Ruskin University had a very successful year with multiple high quality and impactful activities locally, nationally and internationally. Dr Nebil Achour and his colleagues, Sam Shemi, Dr Federica Pascale and Dr Rossella Marmo (University of Naples Federico II, Italy) in collaboration with the WHO European Regional and Ukraine Country Offices led the development of the development of the *WHO Underground Shelters and Services in Hospitals* document, a guide that builds on evidence from literature, international best practice and experience of war and conflict zones such as Ukraine. The document provides a comprehensive framework to manage multiple hazards specifically those involving chemical, biological, radiological and nuclear (CBRN) threats at hospital level and complex and intertwined risks such as a combination of natural and manmade hazards. Findings of the literature were combined with the results of a survey of 617 Ukrainian facilities to develop a comprehensive checklist to support the design and operation of an underground shelter in hospitals. The document can be accessed through WHO website, [Underground shelters and services in hospitals](#).

The collaboration with WHO European Regional Office extended to include organisation and delivery of trainings in

1. Armenia, Hospital Emergency Response Plan, WHO Armenia, November 2025;
2. Tunisia, Hospital Safety Index and Emergency Response Plan, WHO Tunisia, October 2025;
3. Kazakhstan, Hospital Emergency Response Plan, WHO Kazakhstan, October 2025;
4. Ukraine, Hospital Safety Index training assessment, WHO Ukraine, April 2025; and
5. Poland, Hospital Safety Index training assessment, WHO Poland, February 2025.



Prof.. Nebil Achour

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ARU is a partner in the Multi-hazard and Risk-informed System for Enhanced Local and Regional Disaster Risk Management “MEDiate” project funded by the EU, Horizon Europe.

In June 2025, Dr Mariantonietta Morga and Dr Nadeeshani Wanigarathna organised workshops in Cambridge and online to collect experts’ opinions about the meaning of resilience considering multi-hazard risks, and social vulnerabilities and disparities. The workshops were attended by representatives of the local authorities, community, NGOs, and researchers. Dr Morga and Dr Wanigarathna also co-organised in collaboration with the Essex County Council a workshop to assess the possible adoption of the MEDiate platform as a disaster management platform tool. The Essex County Council was interested in the platform and provided further feedback to develop it for future adoption. The dissemination of the project findings also included a submission of written evidence to the UK Parliament to support the use of equity in the assessment of risk assessment, and in September 2025, Dr Morga attended the UKADR 2025 presenting the poster “User centered road vulnerability to flood disasters in Canvey Island, Essex”. The project has ended in September 2025, but dissemination including paper development will continue.

The ARU group has been involved in various research activities which led to the development of the following publications.

- Singh P, Sapkota S, Kc A, Mahara L, Achour, N, Ragazzoni L, Lamine H (2025) Healing After the

Quake: Evaluating the Preparedness of Nepalese Hospitals for Future Disasters. *International Journal of Emergency Services*, 14 (3): 322–334. DOI: <https://doi.org/10.1108/IJES-04-2025-0019>.

- Singh P, Sapkota S, Achour, N, Ragazzoni L, Lamine H (2025). Exploring Challenges and Opportunities in Hospital Disaster Preparedness: A Qualitative Study on the Perspectives of Hospital Incident Command System Members. *Risk Management and Healthcare Policy*, 2025:18, 3499–3515. DOI: <https://doi.org/10.2147/RMHP.S528810>.
- Ranse J, Gray L, Mortelmans L, Sultana N, Achour N, Barten DG, Carlström E, Ciottone G, De Cauwer H, Goniewicz K, Granholm F, Hertelendy AJ, Kupietz K, Ratnayake A, Robinson Y, Somville F, Tin D, Khorram-Manesh A. (2025) Spontaneous and Unplanned Mass Gathering Events: A Scoping Review of Health Considerations for Riots, Civil Unrest, and Protest. *Disaster Med Public Health Prep.* 22;19:e269. <https://doi.org/10.1017/dmp.2025.10189>.
- Achour, N, Zapata, T, Saleh, Y, Pierscionek, B, Azzopardi-Muscat, N, Novillo-Ortiz, D, Morgan, C, and Chaouali, M (2025). The role of AI in mitigating the impact of radiologist shortages: A systematised review. *Health and Technology*. DOI: <https://doi.org/10.1007/s12553-025-00970-y>.
- Utami, A, Achour, N, and Pascale, F (2025). Evaluating Telemedicine for Chronic Disease Management in Low- and Middle-Income Countries During Corona Virus Disease 2019 (COVID-19). *Hospitals*, 2(2), 9. DOI: <https://doi.org/10.3390/hospitals2020009>
- Pascale, F and Achour, N, Chaplin, E, Osei, G, Elhaj, H, (2025). Enhancing the resilience of cancer services in terms of hospital built environment reconfiguration in case of pandemics. *International Journal of Disaster Risk Reduction*, 116, 105140. DOI: <https://doi.org/10.1016/j.ijdr.2024.105140>





Department of
Risk and Disaster Reduction

Department of Risk and Disaster Reduction (RDR)

University College London, United Kingdom

<https://www.ucl.ac.uk/risk-disaster-reduction/>



UCL RDR is an exciting cross-UCL department leading research, knowledge, education and humanitarian action. By providing a focus for UCL activities in risk, disaster and humanitarianism, with its breadth of disciplinary emphasis, promotion of novel multidisciplinary research and translation into practice. UCL RDR conducts research in disaster risk reduction and resilience, around the themes:

What causes risk and disaster?

Investigating the science, socioeconomics, and politics behind hazards, vulnerabilities, risks, and disasters, through measurement and modelling using multidisciplinary approaches ranging from anthropological to digital technologies.

- Primary data collection from the natural environment (earth, air and water)
- Primary data collection from social, economic, cultural, and political environments
- Construction characteristics and damage and loss metrics of housing and infrastructure.
- Modelling drivers of risk and disasters.

What are the consequences risk and disasters?

Understanding individual and multi hazards, cascading effects, vulnerability and risk, their interactions and dynamics, and implications.

- Use quantitative and qualitative data to assess loss, damage and wider impacts on people, sectors, communities, systems and the environment.

- Investigate the implications for economic development in the long and short terms.
- Analyse how risk and disaster are experienced differently based on a range of factors including socio-economic, demographic, governance, and historical, and pre-existing inequalities.

Catalysing change

Innovative interdisciplinary application of techniques to improve disaster risk reduction, resilience, and humanitarian response management.

- Disaster risk management
- Supporting planning and anticipatory action
- Communicating risk
- Collaborative thinking and ideas
- Educating future leaders

The current research foci within UCL RDR are: Climate change and adaptation; Conflict and migration; Health and social risks; Inclusion and politics; Natural hazards and risks; Warning, resilience and finance; and Educating leaders. 2025 saw UCL RDR reconfirmed as an International Centre of Excellence (ICoE) through the Integrated research on Disaster Risk (which is cosponsored by the International Science Council (ISC) and the United Nations Office for Disaster Risk Reduction (UNDRR)).



Prof. Joanna Faure Walker
Head

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Funding success during the year came from UK Research Councils, international funding, as well as pump funding from UCL in topics such as community-level flood protection, engaging art audiences in warning preparedness strategies, food system resilience and decarbonisation, developing climate-resilient urban spaces, peace building for diaspora in exile, citizen science for water well placement, and embedding research culture into research communities. The department's researchers continue to make impact and have been invited as authors on the Intergovernmental Panel on Climate Change, to speak at the House of Commons, and author award-winning papers.

Selected new and renewed grants powering our research include:

- UNRISK: Understanding Uncertainty to Reduce Climate Risks: Professor Mohammad Shamsudduha co-leads UCL's successful NERC Doctoral Focal Awards submission, advancing climate, data and decision science to reduce risks from rapid climate change
- Urbanisation meets the environment: Dr Stefan Leeffers is leading a Fundação para a Ciência e a Tecnologia project on urban–environment interactions.
- Scoring Warnings: Prof Ilan Kelman is collaborating on an AHRC-funded project using artistic practice to explore emergency communication.
- Cultural traction: Dr Aeron O'Connor is co-investigator on a UKRI Metascience grant studying research culture across UK universities.
- Imagining Coastlines: Prof Ilan Kelman co-holds a Geological Society grant for an artist collaboration pilot envisioning East Anglia's coastal futures.
- British Academy International Writing Grant: Dr Punam Yadav is leading a project building capacity and mentoring early career researchers from the Global South.

UCL Department of Risk and Disaster Reduction's public event series hosted informative and diverse discussion challenging participants to question their world views and consider how we can do better at reducing disaster risk. The monthly event series, open to the public, included foci on financing climate change, gender, disaster and the Sendai Framework, groundwater renewability and vulnerability to climate change and risks such as

arsenic poisoning and salinity contamination and the future of disasters. Through his inaugural lecture, Prof Shamsudduha showcased their research which has led the Bangladesh government to invest £6 million into groundwater monitoring infrastructure to improve water safety.

The '15th UCL Risk and Disaster Reduction annual conference - Where is the 'human' in humanitarianism? Navigating this evolving digital and political world' created an opportunity for colleagues, partners and guests to focus on pertinent topics of the year, particularly the future of aid and the ethical and equitable use of AI and data in risk and disaster reduction. Sessions included talks, panels and focus group discussions on 'AI and digital innovation in humanitarian action', 'Knowledge, politics and human relationships in humanitarianism', and 'The triple nexus of conflict, humanitarianism and disaster risk reduction'.

Over the summer, UCL RDR welcomed Year 12 students to a dedicated 'Global Humanitarian Studies Snapshot' as part of the UCL Sutton Trust Summer School. The session offered an immersive introduction to humanitarian systems, disaster risk reduction and global resilience — key themes of the department's undergraduate course. During the week, students were introduced to core ideas in humanitarianism, including the principles and practice behind humanitarian work, ethical decision-making and the realities of crisis response. They took part in bitesize sessions on topics such as international humanitarian law, human rights, global health, evaluation in humanitarian action and the use of evidence in the sector. Staff guided students through scenario-based activities, group discussions and insights into studying humanitarian issues at UCL. Their combined expertise gave participants a rich, multidisciplinary experience of what it means to study and work in the humanitarian sector.

The start of the 2025-2026 academic year welcomed new students on taught and research programmes MSc Risk, Disaster and Resilience, MSc Risk and Disaster Science, and BSc Global Humanitarian Studies, bringing the taught student body within the Department to just over three hundred. Supporting these programmes and enhancing our practice-informed research and education, the Department welcomed Dr Eslam Elbaaly as Lecturer (teaching) in Humanitarian Operations, who brings operational experience in management of health interventions in conflict zones.





Group Photo of Participants at SIMR 2025

Second International Conference on Smart Informatics and Multi-hazard Reduction (SIMR 2025)

The 2nd International Conference on Smart Informatics and Multi-hazard Reduction (SIMR 2025) was held in Chengdu, China, from 11 to 16 September 2025. The conference was co-organised by the UNESCO Chair in Informatics and Multi-hazard Risk Reduction (IMRR), hosted within ICIDR, together with Chengdu University of Technology and Zhengzhou University. It attracted over 200 experts, scholars, and practitioners from more than 20 countries and regions.

SIMR is an international initiative jointly launched in 2023 by the IMRR UNESCO Chair and the State Key Laboratory of Geohazard Prevention and Geoenvironmental Protection (SKLGP) at Chengdu University of Technology. It currently connects more than 120 leading research centres and institutes worldwide, all sharing a commitment to advancing disaster risk reduction through cutting-edge informatics and global collaboration.

SIMR 2025 was co-chaired by ICIDR colleagues Qihua Liang, Tom Dijkstra, and Huili Chen. At the opening ceremony, Qihua, in his role as President of SIMR, presented the conference

preparation process and programme design on behalf of the organising committee. At the closing ceremony, he provided a comprehensive summary of the conference outcomes and outlined future directions for the SIMR conference series.

With the theme “Empowering Resilience: Transferring Technologies into Solutions for Effective Disaster Risk Reduction”, SIMR 2025 served as a dynamic platform for international dialogue on translating emerging technologies into practical and operational solutions for disaster risk reduction. The scientific programme was extensive, comprising one plenary session, ten parallel sessions, twelve keynote addresses, thirty-eight invited talks, and seventy-eight oral presentations.



Prof. Qihua Liang

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In addition to the main scientific programme, SIMR 2025 hosted two pre-conference training courses. One course, delivered by ICIDR colleagues, provided hands-on training in flood modelling and risk assessment to more than 50 early career

researchers. This initiative demonstrated ICIDR's strong commitment to capacity building and to equipping the next generation of researchers with essential skills for disaster risk reduction.



ICIDR colleagues attending the SIMR 2025



Prof. Qihua Liang, President of SIMR, presenting at the opening ceremony

International Conference on Global Collaboration Empowering Sustainable Development of Resources and Environment & The 25th Annual General Meeting of the UK China Association of Resources and Environment

The conference was chaired by Qihua Liang, Director of ICIDR and President of UK-CARE, and was supported by ICIDR colleagues. The event brought together nearly 200 experts and scholars from 20 countries, including the United Kingdom, the Netherlands, and Germany.



Qihua led the on-site visit to the Xiaolangdi Water Control Project and its Digital Twin initiative

Under the theme “Smart Resilience · Green Synergy: Global Collaboration Empowering Resources and Environmental Sustainability”, the conference provided an international platform for the exchange of cutting-edge research and practice in resources and environmental sustainability. The programme featured keynote addresses by leading academics, invited talks by senior experts, and presentations across ten parallel sessions, with more than 100 oral presentations delivered in total.

From 31 October to 3 November 2025, the International Conference on Global Collaboration Empowering Sustainable Development of Resources and Environment, together with the 25th Annual General Meeting of the UK China Association of Resources and Environment (UK-CARE), was held at Zhengzhou University, Henan, China.

During the conference, the China Committee of the UK China Association of Resources and Environment (UK-CARE) was formally established, marking an important milestone in strengthening institutional collaboration between the UK and China in the fields of resources and environmental science. This development further enhances the Association's capacity to promote international cooperation and knowledge exchange in support of sustainable development.

IMRR UNESCO Chair and SIMR Monthly Live Webinar Series continued successfully in 2025

The IMRR UNESCO Chair & SIMR Webinar Series is a monthly event organised by the [UNESCO Chair in Informatics and Multi-hazard Risk Reduction \(IMRR\)](#), in partnership with the Global Partnership for Smart Informatics and Multi-hazard Reduction (SIMR). It invites world-leading academics and researchers to share their work and vision in relevant fields, foster international and interdisciplinary collaboration, and inspire the younger generation to engage in cutting-edge research to address global challenges such as disaster risk and climate change.

In 2025, the webinar series continued to demonstrate strong global engagement, attracting researchers, practitioners, and students from around the world. Across the 2025 programme, the webinars attracted a total of 3,671 participants, highlighting the growing international visibility and influence of the IMRR UNESCO Chair and SIMR initiatives.

IMRR UNESCO Chair & SIMR Webinar Series – 2025 Programme

- **Are We Ready for the Storms Ahead?**
- Professor Hayley J. Fowler, Newcastle University, UK
- **Exploiting Global Variability to Anticipate Hydrologic Extremes**
- Professor Thorsten Wagener, University of Potsdam, Germany
- **Agentic AI and Immersive Digital Twins for Disaster Risk Management**
- Professor Ibrahim Demir, University of Iowa, USA
- **Climate Change Impacts on Extreme Natural Hazards**
- Professor Nobuhito Mori, Disaster Prevention Research Institute, Kyoto University, Japan
- **Integrating Nature-Based Solutions into Indicator-Based Risk Assessments**
- Professor Fabrice Renaud, School of Social and Environmental Sustainability, University of Glasgow, UK
- **Simulating Global 2D Hydrodynamics at 30 m Resolution**
- Professor Paul Bates, University of Bristol, UK
- **Navigating the Challenge of Sequential Hazards: Evolving Building Design for**

Earthquakes and Tsunamis

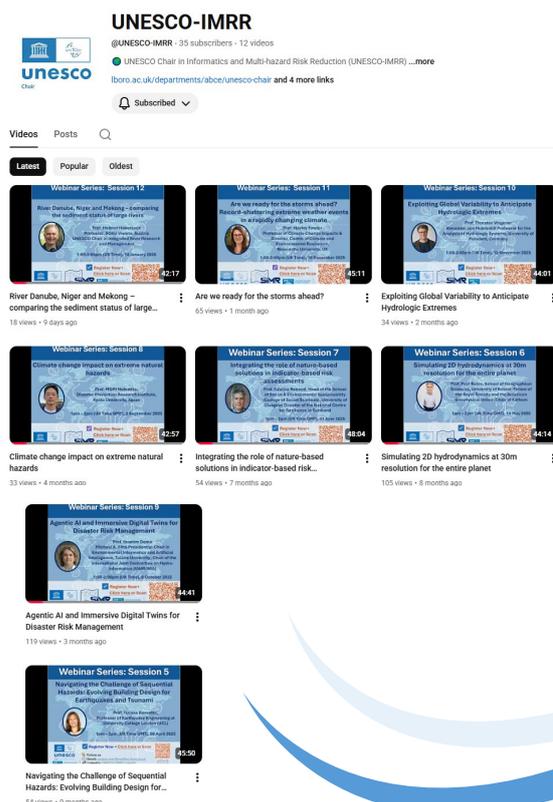
- Professor Tiziana Rossetto, University College London, UK
- **Quantifying the Coastal Defence Value of Coastal Ecosystems**
- Professor Heidi Nepf and Dr Ernie I. H. Lee, Massachusetts Institute of Technology (MIT), USA
- **Flash Floods: Challenges and Needs for Mitigation and Adaptation**
- Professor Philippe Gourbesville, Université Côte d'Azur, France, and Institute of Water Resources and Hydropower Research, China
- **Digital Twin–Empowered Urban Flood and Landslide Emergency Management**

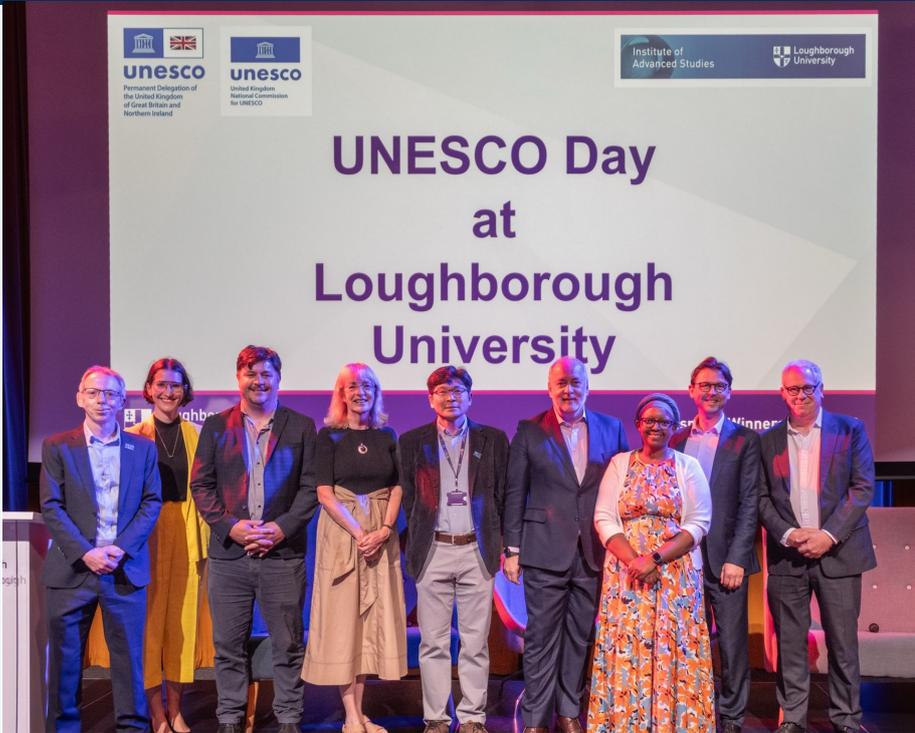
Professor Limin Zhang, Hong Kong University of Science and Technology, China

Further details of past and upcoming webinars are available on the webpage: <https://www.lboro.ac.uk/departments/abce/unesco-chair/events/webinar-series/>

Recordings of previous webinars can be accessed via the YouTube channel: <https://www.youtube.com/@UNESCO-IMRR>

To receive updates and announcements about future webinars, please contact the series organiser at: unesco.imrr@mailbox.lboro.ac.uk

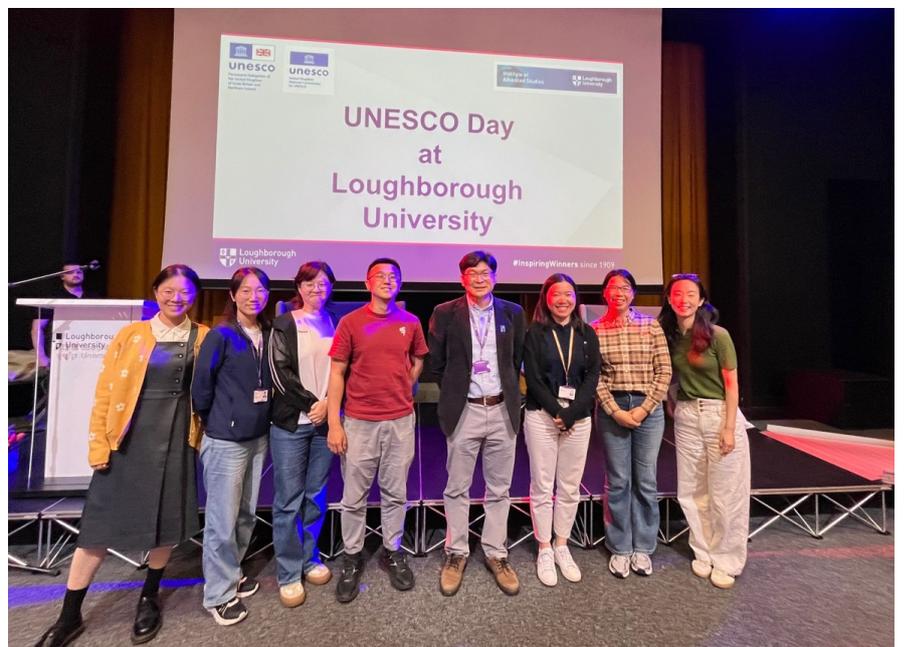




Professor Qihua Liang (fifth from the left) and Professor Ksenia Chmutina (second from the left) at UNESCO Day, Loughborough University



Professor Qihua Liang (second from the left) and Professor Ksenia Chmutina (first from the left) at UNESCO Day, Loughborough University



ICIDR colleagues at UNESCO Day, Loughborough University



Projects

i-Risk Doctoral Training Programme

PI: Professor Qihua Liang

Funder: Natural Environment Research Council (NERC)

Scale: 40+ PhD researchers

Overview: The i-Risk Doctoral Training Programme has been approved for funding by NERC and will train the next generation of research leaders in informatics-driven multi-hazard risk resilience. The programme addresses critical national and global challenges in climate adaptation, cascading infrastructure failures, and systemic risk assessment. i-Risk provides an interdisciplinary training environment that integrates data science, high-performance computing, systems analysis, and applied risk management. PhD projects within the programme deliver high-impact research across one or more of the following thematic areas: 1) Data and Observation – Deploying emerging technologies and intelligent monitoring approaches to generate rich data for understanding evolving and compounding hazards; 2) Modelling and Systems Analysis – Advancing high-performance computing and data analytics methods to model interconnected natural, social, and engineering systems and characterise multi-hazard systemic risks; 3) Prediction and Forecasting – Enhancing predictive capabilities to support timely early warning, effective risk mitigation, and improved community and infrastructure resilience; 4) Solutions, Practice, and Policy – Developing decision-support tools and policy-relevant solutions for sustainable multi-hazard risk management and improved usability of hazard and risk information.

Housing-Related Health Disparities (ComDisp)

PI: Professor Ksenia Chmutina

Funder: Natural Environment Research Council (NERC)

Funding: £450,284

Period: 15 September 2025 – 14 September 2028

Overview: Climate change disproportionately affects marginalised populations worldwide, with climate-driven hazards such as extreme heat, storms, and flooding increasingly interacting with housing conditions to exacerbate risks to human health. Poor housing quality combined with environmental stressors contributes to chronic public health conditions, manifesting as disparities in respiratory and cardiovascular diseases. The ComDisp project

adopts a community-centred research approach to develop a collaborative and iterative framework for grassroots modelling of health disparities. The project will generate predictive capabilities across climate change scenarios in the USA, Vietnam, Turkey, and Ecuador, with broad relevance to societies shaped by historical and contemporary injustices in living environments. The primary end-users are populations living in high-risk housing conditions, with particular focus on elderly people, children, low-income communities, and individuals with pre-existing health conditions.

Nature-Based Solutions for Climate Adaptation and Resilience of Transport Infrastructure

PI: Dr Huili Chen

Funder: Engineering and Physical Sciences Research Council (EPSRC)

Funding: £157,835

Period: 1 July 2025 – 30 June 2026

Overview: Climate change is intensifying flood risks across UK transport networks, threatening infrastructure performance and long-term resilience. This project develops an integrated framework to quantify the multiple benefits of Nature-Based Solutions (NBS) for climate adaptation using established modelling and valuation tools. The project combines a high-resolution hydrodynamic modelling system with two complementary valuation approaches: one to assess reductions in flood damage and service disruption, and another to quantify ecosystem and wider social co-benefits. Using Newcastle as a case study, the project will co-develop and evaluate future NBS implementation scenarios under both current and projected climate conditions. The resulting spatially explicit and monetised outputs will provide robust evidence to inform NBS planning, prioritisation, and investment for transport resilience.



Disaster and Development Network (DDN) School of Geography and Natural Sciences, Northumbria University, United Kingdom

<https://www.northumbria.ac.uk/ddn>



Left to right: Hideyuki Shiroshita (Kansai), Mark Ashley Parry (Northumbria), Andrew Collins (Northumbria), Nibedita Ray-Bennett (Leicester) with awards received at 15th IDRiM, Samos, Greece.



The Disaster and Development Network (DDN) is an integration of research, enterprise and teaching expertise orientated by the disaster management and sustainable development nexus. Operating in various forms out of Northumbria University's recently re-renamed School of Geography and Natural Sciences, it brings together foundational work of the Disaster and Development Centre (DDC)(2004-2012), Disaster and Development Postgraduate Programme (2000-present), Disaster, Development and Resilience (DDR) research group (2012-2023), student led Disaster and Development Society (DDS)(2015-2024), and the inter-Faculty Geographies of Development and Disaster (DDG) Research Excellence Framework (REF 2014, 2021 and associated research impact). Currently the DDN sits alongside the Centre for Global Development.

The DDN focus is to progress knowledge and skills that engage hazards, disasters and complex emergencies from the perspective of intersecting disasters and development experiences spanning science, practice and policy environments. It is committed to delivering impacts that enable survivability and resilience of people and systems upon which the future relies, addressing critical risk engagement associated with environmental, economic, and political change.

Indicative activity during 2025:

Full time academic staff at the Northumbria base for DDN were engaged in a wide range of projects including those working in association with research groups of the Centre for Global Development and Human Geography Research Group. Their work included the following examples:

Katie Oven's work on the UKRI-NERC GCRF project "Sajag-Nepal" on planning and preparedness for the mountain hazard and risk chain in Nepal, which employs several researchers.



Prof. Andrew Collins

E-mail: andrew.collins@northumbria.ac.uk

Francis Massé, former MSc programme lead for disaster management and sustainable development research on risks associated with legal and sustainable wildlife trading in LMICs. Francis transferred to regional neighbour, University of Durham in August. North-East Universities are currently working on a collaborative sub-network for development studies..

Associated PhD researcher, Mridula Paul, successfully completed her Northumbria PhD this year within the allied risk engagement One Health field.

Becky Richardson's extensive work on child-centred approaches to health risk communication completed successfully this year with a successful PhD outcome. The final thesis is published as: "Children's engagement and communication with everyday hazards and risks in Nairobi's informal settlements".

Mark Ashley Parry, served as Northumbria Associate Lecturer and implemented several key roles with the Disaster and Development Network, including via his ongoing contributions to climate education in the north of the UK, with UKADR leadership of its Early Career Researcher (ECR) section and for the IDRiM Society Podcast Series and its ECR initiatives.

Richard Kotter's consolidated initiatives with UK and South Asia based Emergency Services, which has been particularly focused on collaborations with institutions in Pakistan. This was recently awarded International Best Practice, from the International Fire Magazine for Fire and Emergency Services.

Andrew work on the basis of a future action research approach for community owned strategic development of conservation, livelihoods and heritage that aims to serve as an example local resilience building in the Inner Hebrides of Scotland. This is based on a 20,000 acre area of historic collective ownership faced with negotiating risks associated with environmental, economic and social change in this region. He has reviewed and revisited previously research outcomes from former projects in southern Africa.

A range of further staff at Northumbria carried out internally and externally collaborative research relevant to the DDN focus.

The DDN participated in the 2025 Global Platform in Geneva 2nd – 6th June. Having been the first UK academic institution to gain accreditation to the process of United Nations DRR in the early 2000's there has been a Northumbria DDN engagement in all Global Platforms to date.

Andrew provided the Keynote presentation for the 10th Anniversary Celebrations of GADRI, preceding the 7th Global Summit of GADRI at Colorado State University, USA 20th July titled: "What has it meant to alliance disaster research, and what next?".

Northumbria inputs were well represented at the

UKADR annual conference "Pathways to Practice and Resilience: UK Interdisciplinary Hazard and Disaster Research on the National and Global Stage", hosted by Durham University 4th-5th September.

Mark Ashley Parry and Andrew contributed to the 15th Conference of IDRiM Society in Samos, Greece 28th Sept – 1st Oct. The DDN provides a board member to the IDRiM Board.

The IDRiM Society event Awards Ceremony in Samos was an exceptional moment for Northumbria in that four award receivers held in common their roles with DDN, years earlier or currently. Prof. Nibedita Ray-Bennett and Dr. Hideyuki Shiroshita for Avoidable Deaths Network, of Leicester and Kansai Universities respectively, jointly received the Norio Okada Implementation Science Award. Both served and met each other whilst in the DDC during several years leading to 2010. Nibedita had served with the DDC as a Research Fellow for the ESRC-DFID project on the Meaning of Health Security for Disaster Resilience in Bangladesh: a health security framework for disaster risk reduction. Hideyuki served as a Visiting Research Scholar as part of the Northumbria-Kyoto University led UK-Japan DRR study programme of that period. In addition to his doctoral work he was instrumental in the Japan-UK Disaster Risk Reduction Study Programme, a multi-institution collaborative development led by Northumbria and Kyoto Universities variously supported by grants from The Japan Foundation, Sasakawa Foundation, Japan Society for the Promotion of Science (JSPS) and Daiwa Foundation.

Meanwhile, a currently active researcher with DDN, Dr. Mark Ashley Parry received the IDRiM Aniello Amendola Service Award in recognition of his work for IDRiM young scientist programme, podcast series and other support to media and committees.

- Andrew received the IDRiM Distinguished Research Award.



Break out sessions at 25th anniversary of MSc DMDS

The 25th Anniversary of the Disaster Management and Sustainable Development postgraduate programme was marked on 5th December through an afternoon of seminar sessions and a social get together of alumni.

The seminar includes exploring how disaster management and sustainable development practices have changed, academic and practitioner collaboration, and emerging challenges and opportunities. Attended by current and past programme leaders, staff and visiting titles, this was also an occasion for networking, reconnecting with each other, and celebrating shared achievements in a relaxed context. There were 107 participants, and in association with the event it was possible to readily locate current information on 220 of the near 500 MSc registrants from these first 25 years. A survey of their current employment revealed alumni destinations with academia, as leaders in international organizations, state, NGO or private sector employees; this included multiple examples with the humanitarian, development, emergency planning, environmental, social and health fields. It has provided information to the university influencing a renewed commitment to continue

the programme. It was concluded that disaster studies has enabled careers, coping and personal development. Breakout sessions on “the role of academic, practitioner and other collaboration in improving disaster management and sustainable development” identified emerging challenges and opportunities for the current programme team to take forward. Healthy numbers of new recruits from multiple countries was again achieved in 2025.

DDN research contributed to Northumbria achieving its highest increase in Research Power across UK universities in the REF exercise of 2021, including through leading Research Impact Case Studies over two rounds of submission. A recent example, deemed world leading, and now being examined further, is situated in the ongoing people-centred disasters engagement theme, the impact being recorded in the summary at this link:

<https://www.northumbria.ac.uk/research/research-impact-at-northumbria/societal-impact/new-people-centred-global-policies-prepare-communities-better-for-diasasters/>

The wider array of University multidisciplinary research themes contributed to the achievement of Times Higher Education (THE) Award, ‘UK University of the Year’ in 2022. Northumbria University has also again been recognised through being awarded the title of ‘Modern University of the Year’ 2025 by The Times and The Sunday Times.

Northumbria University is a signatory of the [SDG Accord](#) and continued to develop its portfolio of sustainability initiatives. For example, Northumbria University has built upon its People & Planet (2023/24) strategy being a “[First Class university and top North East \[of England\] University for sustainability](#)”. It was ranked 10th in the UK for environmental and ethical performance in the People & Planet’s University League for 2024/25.

Indicative 2025 publications:

- Robson, E., McGowran, P., Ruszczyk, H., Malamud, B., Simpson, E., Densmore, A., Denton, N., Chapplow, N., Gurung, P., Hall, T., Harries, R., Jenkins, J., KC, A., **Kotter, R.**, Kumar, A., Limbu, B., Milledge, D., Porter, G., Rosser, N., Taylor, F., Toll, D., Winter, M., Woldearegay, K. (2025), ‘Interdisciplinary Perspectives on the Intersections

of Roads, Sustainable Development, and Disaster Resilience’, *International Journal of Disaster Risk Reduction*, 128. doi.org/10.1016/j.ijdr.2025.105691

- **Griffiths, S.**, King, H., Wilkinson, J., Kelly, F., Entwistle, J., Deary, M (2025) ‘Evaluating Public Exposure to Airborne Particulates from Major Incident Fires: A Back Trajectory Plume Modelling Approach’, *Journal of Hazardous Materials*, 490. doi.org/10.1016/j.jhazmat.2025.137455
- Sijapati, S., Robinson, T., Densmore, A., Awasthi, P., Dunant, A., Li, S., Rajbhandari, R., Rosser, N., Johnson, A., **Oven, K.**, de Vries, M., Heiselberg, S. (2025) ‘Needs and uses of scientific information for earthquake and monsoon contingency planning by humanitarian clusters in Nepal’, *International Journal of Disaster Risk Reduction*, 117. doi.org/10.1016/j.ijdr.2024.105166
- **Massé, F.** and Gladkova, E. (2025) ‘Spatializing zoonotic disease dynamics from a political ecology perspective: Reconceptualizing spillover as structure’, *Journal of Political Ecology* 32(1): 5810. doi.org/10.2458/jpe.5810

- **Parry, M.A.**, McGowran, P., Miller, R.E. and **Collins, A.E.** (2025) 'The Youth Voice and the Disaster and Development Society'. In: Tatano, H. and Kovacs, P. (eds.) *Proceedings of the 5th Global Summit of Disaster Research Institutes for Disaster Risk Reduction: Engaging Science with Action*. Springer. pp. 219-230. DOI: 10.1007/978-981-96-0479-1_16
- **Parry, M.A.** and **Collins, A.E.** (2025) 'Cognizance of Climate Change within the United Kingdom'. In: Tatano, H. and Kovacs, P. (eds.) *Proceedings of the 6th Global Summit of Disaster Research Institutes for Disaster Risk Reduction: Towards GADRI Objectives of Achieving a Sustainable Disaster-Resilient World*. Springer. pp. 292-326. DOI: 10.1007/978-981-96-6609-6_22
- **Collins, A.E.**, De Groeve, T., Sparf, J. and James, W. (2025) 'Report for the Proceedings of the 5th Global Summit of GADRI: Engaging Sciences with Action Europe with Africa and the Middle East: Exploring Solutions to Bridge the Gaps for Implementation of Science in Action', in Tatano, H. and Kovacs, P. (Eds) *Proceedings of The Fifth Global Summit of Disaster Research Institutes for Disaster Risk Reduction: Engaging Sciences with Action: GADRI Book Series*. Springer. Chapter 13. ISBN 978-981-96-0478-4
- Alam, E., Collins, A.E., Islam, Md. A.R.T., Paul, A. and Islam, Md. K. (2024) 'Change in cyclone disaster vulnerability and response in coastal Bangladesh', *Disasters*, 44:2., pp. doi.org/10.1111/disa.12608



Left to right: Komal Aryal, Eileen Baily, Mumtaz Ahmed, Rob Bell (first four entrants to MSc Disaster Management and Sustainable Development, 2000) with Andrew Collins (first programme leader) during the 25th anniversary of the programme.



ODI Global

Global Risks and Resilience Programme ODI Global, United Kingdom

<https://www.odi.org>

ODI Global Risks and Resilience Programme (<https://odi.org/en/about/our-work/global-risks-and-resilience/>) published a range of reports, briefings and working papers in 2025:

Briefs/Policy papers/Research report/Working papers

- Ten ways to create people-centred early warning systems in conflicts and recurrent crises - <https://odi.org/en/publications/ten-ways-to-create-people-centred-early-warning-systems-in-conflicts-and-recurrent-crises/>
- Ten ways to reduce disaster risk in conflicts and recurring crises - <https://odi.org/en/publications/ten-ways-to-reduce-disaster-risk-in-conflicts-and-recurring-crises/>
- Twelve ways to take anticipatory action to scale in conflicts and recurring crises - <https://odi.org/en/publications/twelve-ways-to-take-anticipatory-action-to-scale-in-conflicts-and-recurring-crises/>
- Five lessons for supporting resilience in conflicts and recurring crises: evidence from SPARC's retrospective studies of livelihood support - <https://odi.org/en/publications/five-lessons-for-supporting-resilience-in-conflicts-and-recurring-crises-evidence-from-sparcs-retrospective-studies-of-livelihood-support/>
- Do new permanent water supplies in the drylands help build resilience? The impacts of new boreholes on coping with drought in Ethiopia and Kenya - <https://odi.org/en/publications/do-new-permanent-water-supplies-in-the-drylands-help-build-resilience-the-impacts-of-new-boreholes-on-coping-with-drought-in-ethiopia-and-kenya/>
- Pathways to integrating adaptation and resilience into financial transition plans for climate-resilient development - <https://odi.org/en/publications/pathways-to-integrating-adaptation-and-resilience-into-financial-transition-plans-for-climate-resilient-development/>
- The inconvenient truths of water development in the drylands of the Horn of Africa: how to use new water sources to support resilience for pastoralists - <https://odi.org/en/publications/the-inconvenient-truths-of-water-development-in-the-drylands-of-the-horn-of-africa-how-to-use-new-water-sources-to-support-resilience-for-pastoralists/>
- What happened when resilience-building projects closed: Stories of change from Chad - <https://odi.org/en/publications/what-happened-when-resilience-building-projects-closed-stories-of-change-from-chad/>
- Bracing for impact: a Caribbean blueprint for government-led anticipatory action finance - <https://odi.org/en/publications/bracing-for-impact-a-caribbean-blueprint/>
- Fit for size: rethinking capacity strengthening in Small Island Developing States - <https://odi.org/en/publications/fit-for-size-rethinking-capacity-strengthening-in-small-island-developing-states/>
- Taking locally led climate and security actions seriously in Papua New Guinea - <https://odi.org/en/publications/taking-locally-led-climate-actions-seriously-in-papua-new-guinea/>
- Dynamic livelihoods in conflict and recurrent crises: stories of change from Ethiopia and South Sudan - <https://odi.org/en/publications/dynamic-livelihoods-in-conflict-and-recurrent-crises-stories-of-change-from-ethiopia-and-south-sudan/>
- Climate-responsive social protection: A primer for philanthropy - <https://odi.org/en/publications/primer-climate-responsive-social-protection-and-philanthropy/>
- Asia-Pacific climate report 2025: unlocking nature for development - <https://odi.org/en/publications/asia-pacific-climate-report-2025-unlocking-nature-for-development/>



Dr. Emma Gogerty
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Images from events where ODI Global Participated at COP29



ODI Global speaking at various events at the Global Platform for Disaster Risk Reduction 2025



GRR Rebecca Nadin and other participants at the COP30



- How satellite images are helping islands adapt to climate change - <https://odi.org/en/publications/how-satellite-images-are-helping-islands-adapt-to-climate-change/>
- Turning the tide: enhancing ocean equity for Small Island Developing States - <https://odi.org/en/publications/turning-the-tide-enhancing-ocean-equity-for-small-island-developing-states/>
- Tackling the 'cost of capital' crisis in small vulnerable nations - <https://odi.org/en/publications/tackling-the-cost-of-capital-crisis-in-small-vulnerable-nations/>
- Resilient and Sustainable Islands Initiative (RESI) - <https://odi.org/en/about/our-work/resilient-islands/>
- Coordinating the Technical Advisory Group of the Global Shield Against Climate Risks - <https://odi.org/en/about/our-work/global-shield-against-climate-risk/>
- CLEAN Helpdesk - <https://odi.org/en/about/our-work/clean-helpdesk/>
- The Climate, Conflict and Peace Bulletin - <https://odi.org/en/about/our-work/climate-conflict-peace-bulletin/>



Projects

- The programme has numerous multiyear projects/ Initiatives, including:
- Addressing loss and damage, disaster risk reduction and finance - <https://odi.org/en/about/our-work/loss-damage-disaster-risk-reduction-and-finance/>
- Addressing the global adaptation challenge - <https://odi.org/en/about/our-work/addressing-the-global-adaptation-challenge/>
- Building resilience in complex and conflict settings - <https://odi.org/en/about/our-work/building-resilience-in-complex-conflict-settings/>
- Ecosystem-based and locally led adaptation - <https://odi.org/en/about/our-work/ecosystem-based-and-nature-positive-climate-action/>
- Scaling climate finance access for countries facing conflict and severe humanitarian needs - <https://odi.org/en/about/our-work/scaling-climate-finance-access-for-countries-facing-conflict-and-severe-humanitarian-needs/>
- Supporting Pastoralism and Agriculture in Recurrent and Protracted Crises (SPARC) - <https://www.sparc-knowledge.org/>
- Tides of justice: how SIDS are redefining the fight against climate change - <https://odi.org/en/insights/tides-of-justice-how-sids-are-redefining-the-fight-against-climate-change/>
- Course correcting climate finance: why current readiness models are failing fragile states - <https://odi.org/en/insights/course-correcting-climate-finance/>
- Prioritising in uncertainty: targeting donor support for loss and damage finance - <https://odi.org/en/insights/prioritising-in-uncertainty-targeting-donor-support-for-loss-and-damage-finance/>
- Small change? Our projections for the conflict blind spot in climate finance by 2030 - <https://odi.org/en/insights/small-change-conflict-blind-spot/>
- Loss and Damage Fund – millions depend on us - <https://odi.org/en/insights/loss-and-damage-millions-depend-on-us/>
- Making climate insurance work: potential approaches to fund premium support - <https://odi.org/en/insights/making-climate-insurance-work-premium-support/>

Blogs/Articles

- Ten years of Sendai: five big changes in disaster risk reduction and what comes next - <https://odi.org/en/insights/ten-years-of-sendai-five-big-changes-in-disaster-risk-reduction/>
- Explainer: what would be a strong outcome for the global goal on adaptation at COP30? - <https://odi.org/en/insights/explainer-gga-cop30/>
- What Pacific islands can teach COP30 about measuring resilience - <https://odi.org/en/insights/what-pacific-islands-can-teach-cop30-about-measuring-resilience/>
- Tides of justice: how SIDS are redefining the fight against climate change - <https://odi.org/en/insights/tides-of-justice-how-sids-are-redefining-the-fight-against-climate-change/>
- Course correcting climate finance: why current readiness models are failing fragile states - <https://odi.org/en/insights/course-correcting-climate-finance/>
- Prioritising in uncertainty: targeting donor support for loss and damage finance - <https://odi.org/en/insights/prioritising-in-uncertainty-targeting-donor-support-for-loss-and-damage-finance/>
- Small change? Our projections for the conflict blind spot in climate finance by 2030 - <https://odi.org/en/insights/small-change-conflict-blind-spot/>
- Loss and Damage Fund – millions depend on us - <https://odi.org/en/insights/loss-and-damage-millions-depend-on-us/>
- Making climate insurance work: potential approaches to fund premium support - <https://odi.org/en/insights/making-climate-insurance-work-premium-support/>



Media Highlights

- Emily Wilkinson was featured on the Context on discussing the innovative solutions to allow small island nations to manage debt and build climate resilience as global funding declines. <https://www.context.news/climate-risks/opinion/how-to-defuse-the-climate-debt-time-bomb-for-small-island-states>

Events

- ODI Global participated and hosted several events at the **Global Platform for Disaster Risk Reduction** (<https://globalplatform.undrr.org/>), including: Manisha Gulati spoke about 'Innovative Financing and Private Sector Leadership in Disaster Risk Reduction'; Emma Gogerty spoke at a 'Spotlight session on Early Warnings for All'; Emily Wilkinson spoke at the thematic session on "Accelerating Build Back Better"; and Emma Gogerty and Simon Levine joined a fishbowl style panel on 'A world in crisis: Building resilience in complex settings'.
- ODI Global participated and hosted several events at the **COP30** (<https://odi.org/en/events/climate-conflict-peace-and-security-at-cop30/>) from 10 November 2025 – 31 November 2025. ODI Global has worked for several years to resolve the conflict blind spot in climate finance: generating new research, convening key partners to build political momentum, and providing technical assistance to climate funds and governments. At COP30, we organised and participated in several Minister-level events on one of the most urgent climate issues at Belém and beyond.
- ODI Global participated in an event at **New York Climate Week** on 'Advancing climate-responsive social protection (CRSP): future challenges and entry points for philanthropy' (<https://odi.org/en/events/climate-responsive-social-protection-future-challenges-and-entry-points-for-philanthropy/>) organised by the Global Risks and Resilience Programme in collaboration with Climate Works Foundation and Laudes Foundation.
- During the **2025 WBG/IMF Spring Meetings**, ODI Global and the Inter-American Development Bank (IDB) hosted a livestreamed in-person roundtable discussion in Washington DC at the Dacor Bacon House to explore how to reduce cost of capital in small vulnerable states. The discussion featured representatives from the SIDS governments, development partners - <https://odi.org/en/events/reducing-the-cost-of-capital-in-small-vulnerable-states/>
- Simone Levine work on *The role of social protection in preventing and managing food crises: Urbanisation* was featured on the Social Protection website. <https://socialprotection.org/discover/blog/role-social-protection-preventing-and-managing-food-crises-urbanisation>
- Emily Wilkison, Courtney Lindsay and Vikrant Panwar's article on the *Climate disasters will send many countries into a debt spiral – but there's a way out* was featured by the The Conversation - <https://theconversation.com/climate-disasters-will-send-many-countries-into-a-debt-spiral-but-theres-a-way-out-269318>
- Mauri Vazquez was interviewed by the Independent on the difficulties that conflict-affected countries face accessing aid to address the devastating impacts of the climate crisis. <https://www.independent.co.uk/climate-change/cop30-climate-africa-somalia-chad-b2864734.html>
- Emily Wilkinson co-wrote an article for Climate Home News: *Hurricane Melissa's destruction shows need for climate resilience push* - <https://www.climatechangenews.com/2025/10/30/hurricane-melissas-devastation-highlights-need-for-climate-resilience-push/>
- Emily Wilkinson and Kira-Lee Gmeiner wrote an article in The Conversation: *Why small climate-vulnerable island states punch well above their weight in UN climate talks* - <https://theconversation.com/why-small-climate-vulnerable-island-states-punch-well-above-their-weight-in-un-climate-talks-269050>



University of
Salford
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Disaster Resilience Research Group University of Salford United Kingdom

<https://hub.salford.ac.uk/uprise-for-disaster-resilience/>



Inaugurating a New Era in Climate Resilience Research at the University of Salford

The Climate Resilience Research Group was officially inaugurated on 1 October 2025 at Thinklab, University of Salford, marking a significant milestone in the institution's commitment to addressing climate-induced challenges. Established as a cross-centre initiative between the Environmental Research and Innovation Centre (ERIC) and Built and Human Environments (BuHu) within the School of Science, Engineering and Environment, the group is led by Professor Terrence Fernando, Director of Thinklab, with Dr Giuseppe Forino as Deputy Lead. The inaugural meeting brought together researchers to define the group's vision, structure, and research priorities, fostering interdisciplinary collaboration across the built environment, natural ecosystems, and social systems. Three key knowledge clusters were identified: Digital Solutions, encompassing AI-based systems, modelling, and simulation for climate adaptation; Stakeholder and Community Engagement, promoting participatory approaches to co-design resilience strategies; and Risk-Sensitive Urban Planning, integrating disaster risk reduction into urban

design and land-use management. The meeting emphasised the importance of systems thinking and evidence-based policy in responding to hazards such as floods, droughts, heatwaves, and wildfires. Through regular meetings and engagement with external stakeholders, policymakers, and communities, the group aims to generate actionable knowledge and innovative solutions contributing to sustainable, adaptive, and resilient communities worldwide.

THINKlab's Early Warning System Goes Live in the Maldives

A landmark Impact-based Multi-Hazard Early Warning System (MHEWS) was officially launched in Fuvahmulah City, Maldives, representing a transformative step in protecting vulnerable communities from extreme weather and climate-related hazards. Developed by the University of Salford's THINKlab using its innovative MOBILISE solutions, the system empowers national and local authorities to anticipate potential impacts and issue timely, actionable warnings that reduce risks to lives, infrastructure, and livelihoods. The system was inaugurated by Dr Mohamed Kinaanath, Minister of State for Homeland Security and Technology, at a ceremony attended by over 70 senior officials from national and local agencies. Keynote speakers, including Fuvahmulah City Mayor Mr Ismail Rafeeq, Environmental Regulatory Authority Chief Executive Mr Mohamed Hassaan, and World Bank Country Economist Mr Erdem Atas, praised the initiative and called for nationwide expansion. Professor Terrence Fernando, Director of THINKlab, highlighted the significance of research translating into real-world impact through effective multi-agency collaboration. The project is led by the Ministry of Homeland Security and Technology, with funding from the World Bank's Digital Maldives for Adaptation, Decentralisation and Diversification (DMADD) Project, further demonstrating the global reach and impact of THINKlab's climate resilience research.



Prof. Kaushal Keraminiyage

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Building Resilient Futures: THINKlab & British Council Empower BiH Leaders

University of Salford's THINKlab hosted a dynamic two-day study tour and workshop in partnership with the British Council, supporting the UK–Bosnia and Herzegovina (BiH) Fellowship Programme on Spatial Planning and Disaster Management. A distinguished delegation from key BiH institutions, including the Ministry of Security, Federal Administration of Civil Protection, and cantonal-level advisors, participated in an immersive programme designed to strengthen leadership, governance, and urban policymaking capacity. The programme focused on two thematic areas: Sustainable Urban Development and Disaster Management and Resilience. Through expert-led workshops, interactive sessions, and field visits, including a tour of the Energy House, delegates explored climate-responsive planning, ecological urbanism and green infrastructure, digital tools for climate resilience, anticipatory action and systems thinking, and community engagement for resilience building. Professor Terrence Fernando, Director of THINKlab, emphasised the exceptional quality of knowledge exchange between Salford academics and BiH city practitioners, expressing commitment to building long-term partnerships. The programme was supported by contributions from twelve academic experts across the University of Salford, spanning disciplines including urban planning, disaster management, environmental science, and digital innovation, reinforcing the university's interdisciplinary approach to addressing global climate resilience challenges.

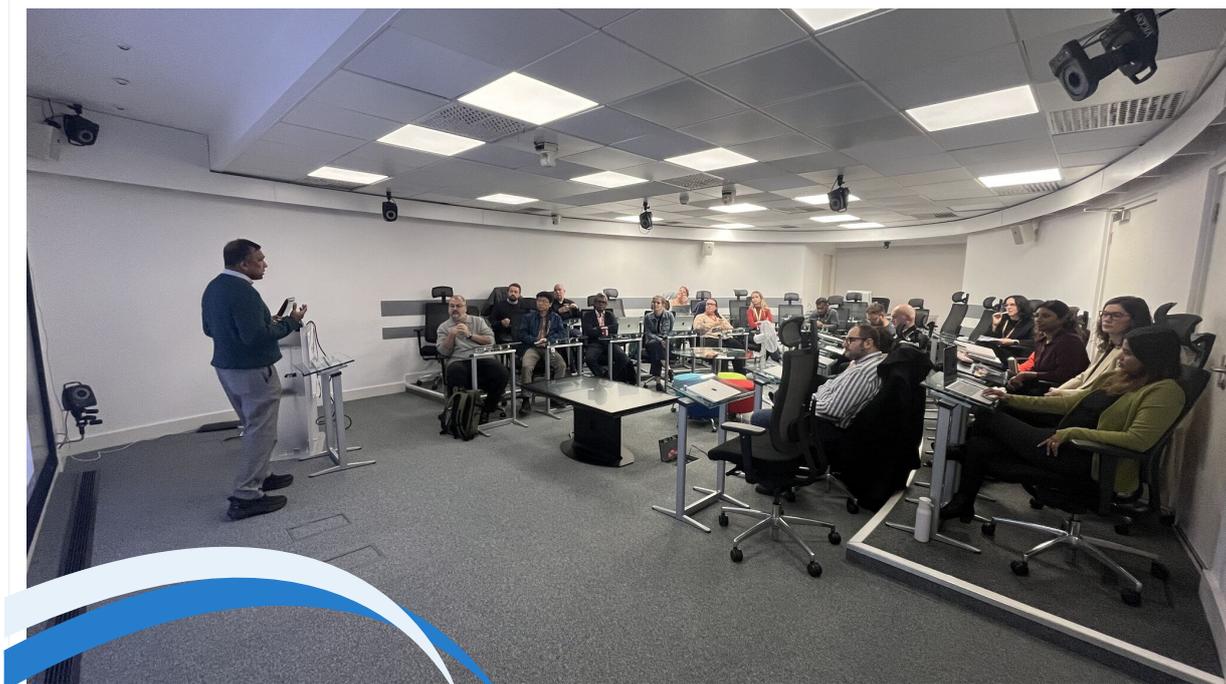
Shaping National Resettlement Policy: University of Salford Partners with Sri Lanka's NBRO

Professor Kaushal Keraminiyage has been collaborating with Sri Lanka's National Building Research Organisation (NBRO) to develop national resettlement policy and guidelines, drawing on his extensive research in post-disaster resettlement, host community integration, community engagement, and stakeholder collaboration. Initiated in March 2025, this partnership addresses critical gaps in existing policies, particularly around legislative shortcomings and inter-organisational collaboration structures. Sri Lanka faces recurring challenges from floods and landslides, making both pre- and post-disaster resettlement a critical national priority, with persistent issues surrounding land selection, beneficiary satisfaction, inter-agency coordination, and community resilience remaining significant hurdles. A key component of this work involves reviewing NBRO's proposal for the Plantation Human Development Trust (PHDT) to construct 4,700 houses for plantation sector workers,

including disaster-affected communities. Professor Keraminiyage's research has directly informed recommendations on beneficiary selection, land acquisition, participatory methods, and host community integration, addressing challenges in financial sustainability and community resilience-building. The collaboration has progressed to developing draft land subdivision guidelines incorporating research findings on host community integration, while advancing field data collection processes for land selection and beneficiary participation. Significantly, NBRO and the University of Salford have agreed to jointly pilot the new policy guidelines at the Poonagala resettlement site, providing a valuable opportunity to translate academic research into real-world impact and contribute to building disaster-resilient communities across Sri Lanka.

7th GADRI Summit at Colorado State University: Advancing Global Disaster Resilience

The 7th Global Alliance of Disaster Research Institutes (GAdRI) Summit, held at Colorado State University, brought together leading international researchers, practitioners, and policymakers to advance global dialogue on disaster risk reduction and resilience. The summit featured thematic sessions aligned with the UNDRR Sendai Framework for Disaster Risk Reduction and the UNFCCC Paris Agreement, addressing critical challenges in building resilient communities worldwide. A key session focused on Priority 4 of the Sendai Framework, addressing enhanced disaster preparedness for effective response and "Building Back Better" in recovery, rehabilitation, and reconstruction. Themed "From Every Day Counts to Lasting Resilience," the session explored strategies for ensuring recovery processes contribute to long-term community resilience rather than merely restoring pre-disaster conditions. A second thematic session examined the relationship between science and technology, policy, and community engagement within the context of both the Sendai Framework and the Paris Agreement. Themed "Strengthening Societal Resilience for Disasters," discussions centred on partnerships, communication, and policies that bridge scientific knowledge with community-level action. Professor Kaushal Keraminiyage represented the University of Salford at the summit, chairing both sessions and contributing to strengthening international collaboration in disaster risk reduction research and policy development.





PhD Completion: Risk Propagation Simulator for Assessing Urban Resilience

Dr Dayan Munasinghe successfully completed his PhD under the supervision of Professor Terrence Fernando and Professor Kaushal Keraminiyage, with the thesis titled "Risk Propagation Simulator for Assessing Urban Resilience." This research addresses significant gaps in existing risk assessment frameworks, such as ISO 31000 and the Sendai Framework for Disaster Risk Reduction, which often overlook complex risk interdependencies and cascading impacts within communities. Employing a design science approach guided by seven design science principles, the study develops a comprehensive System Dynamics (SD) model to capture socio-technical risk interdependencies and simulate risk propagation at the community level. The model, operationalised through AnyLogic software, identifies fourteen distinct risk reduction pathways and four pivotal risk propagation principles, enabling decision-makers to conduct "what-if" scenarios to explore how local climate risks can be reduced by addressing community characteristics such as risk perception, knowledge, understanding, and communication. The SD model was evaluated by twelve experts using two proposed development programmes in Kalutara, Sri Lanka — one focused on risk communication improvement and the other on drainage improvement. All experts validated the model as effective for comprehending interventions' impacts on community resilience, recognising its significant utility in planning processes for building resilient environments.

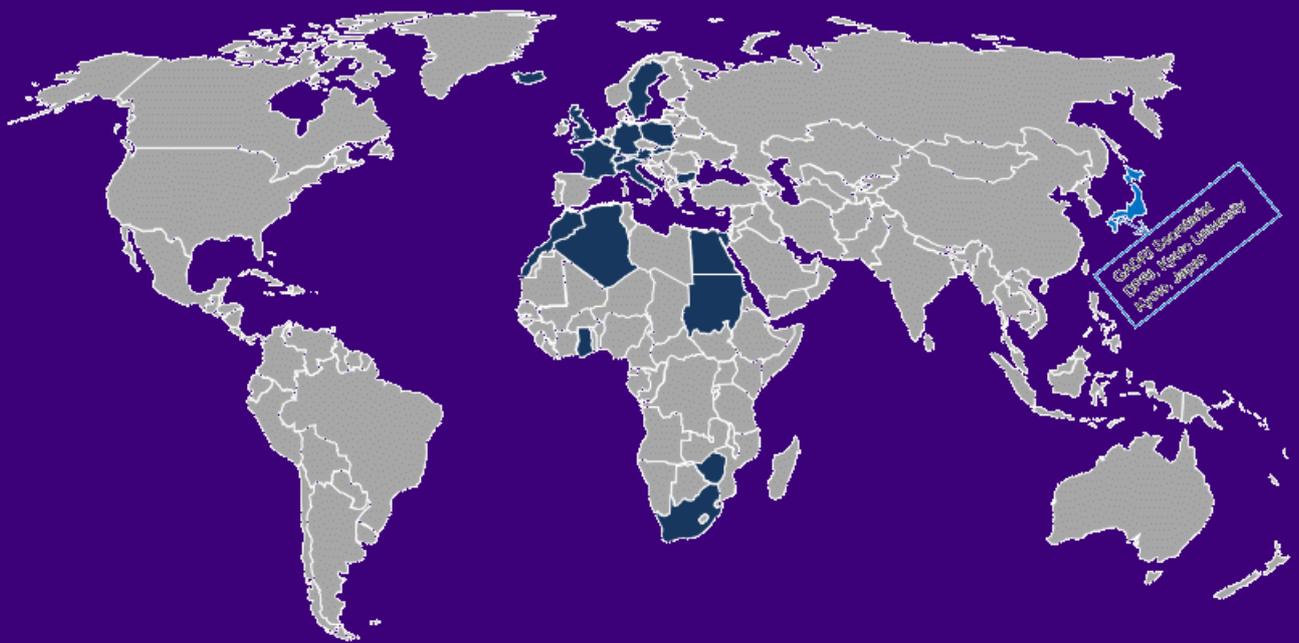
The following publications represent a selection of research outputs from the University of Salford's disaster resilience and built environment research during the current reporting period. These works reflect the breadth and depth of ongoing research across the group, spanning disaster recovery, community engagement, risk-sensitive urban planning, and sustainable retrofit practices, demonstrating continued contributions to advancing knowledge in these critical areas.

- Fernando, L. S., Kulatunga, U., Ranadewa, T., & Keraminiyage, K. P. (2025). Accelerating disaster recovery: An agile approach to enhancing community disaster resilience. *International Journal of Disaster Resilience in the Built Environment*, Advance online publication. <https://doi.org/10.1108/IJDRBE-03-2025-0033>
- Geekiyanage, D., Fernando, T., & Keraminiyage, K. (2025). Mobilising community engagement in disaster risk-sensitive urban planning: Insights from grounded theory and two-mode social network analysis. *Sustainable Development*, Advance online publication. <https://doi.org/10.1002/sd.70241>
- Gunasekara, I., Keraminiyage, K., & Akoh, S. (2025). Challenges of accelerating domestic building retrofit for energy transition in the UK. In C. Tsang, C. Whitman, L. Jankovic, R. Fieldson, J. Zhao, & O. Duran (Eds.), *Innovative approaches to retrofit: Proceedings of the International Retrofit Conference 2025* (p.

Key Publications

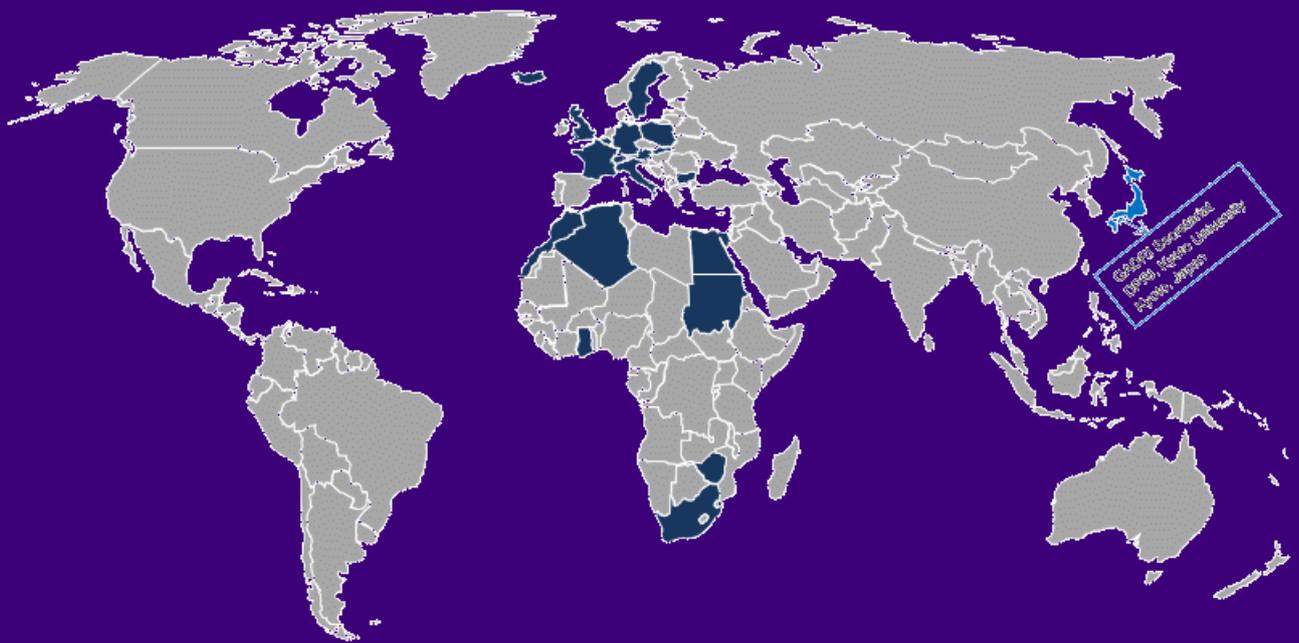


Africa





Africa



Africa

Algeria	Faculty of Civil Engineering, Built Environment Research Laboratory (LBE), University of Science & Technology Houari Boumediene (USTHB)
Egypt	Faculty of Engineering, Alexandria University
Egypt	Geology Department, Faculty of Science, Assiut University
Egypt	German University in Cairo (GUC)
Egypt	Water Resources Research Institute (WRRI), National Water Research Center (NWRC), Ministry of Water Resources and Irrigation
Ghana	University for Development Studies (UDS)
Ghana	Department of Geography & Resource Development, University of Ghana
Ghana	Hydrology and Water Resource Engineering, Water Research Institute, Council for Scientific and Industrial Research (CSIR)
Morocco	Faculty of Sciences and Technics of Mohammedia, University of Hassan II of Casablanca
South Africa	Disaster Management Training and Education Centre for Africa (DIMTEC), University of the Free State
Sudan	UNESCO Chair in Water Resources
Zimbabwe	Geography Department, Bindura University of Science Education African Alliance of Disaster Research Institutes (AADRI)





Africa Alliance for Disaster Risk Institutions (AADRI), Bindura University, Zimbabwe

<https://www.aadri.org.zw/>

Executive Summary:

The Africa Alliance for Disaster Research Institute (AADRI) conducted a comprehensive assessment of disaster risks and preparedness across Africa in 2024. This report reveals the escalating impact of climate-induced disasters, exacerbated by rapid urbanization and socioeconomic vulnerabilities. While significant progress has been made in implementing the Sendai Framework, particularly showcased at the 21st session of the Africa Working Group on Disaster Risk Reduction (AWGDRR), persistent challenges in funding, coordination, and data management hinder effective resilience-building. This report provides key findings, highlights notable progress, identifies critical challenges, and offers actionable recommendations to enhance disaster preparedness and mitigate the devastating impacts on African communities.

Introduction:

Africa faces a complex and evolving landscape of disaster risks, driven by climate change, demographic shifts, and socioeconomic inequalities. This report, based on AADRI's 2024 assessment, aims to provide a comprehensive overview of the current state of disaster risk reduction (DRR) and preparedness across the continent. It also acknowledges and celebrates the achievements demonstrated at the 21st AWGDRR, while emphasizing the urgent need for accelerated action.

1. 2025 Disaster Landscape: Sub-Saharan Africa AADRI's Overview

The year 2025 was characterised by extreme hydrometeorological shifts, driven by La Niña conditions and long-term climate change, that intensified rainfall and drought cycles.

- **Southeastern Africa Floods (Late 2025–Early 2026):** Exceptionally heavy rainfall—exceeding annual averages in just 10 days—caused devastating flooding across Mozambique, Zimbabwe, South Africa, and Eswatini. This "once in a generation" event resulted in over 280 fatalities, displaced 150,000 people, and destroyed more than 105,000 hectares of crops.
- **Cyclone Gezani (February 2025):** Striking Madagascar and the southeastern coast, this system underscored the increasing intensity of tropical storms in the region.
- **West and Central Africa Flooding:** Severe floods impacted nearly 4 million people in West Africa, with significant displacement in countries like Nigeria and the Democratic Republic of Congo (DRC).
- **Regional Droughts:** While some regions flooded, Somalia, Malawi, and Zambia endured persistent droughts, with cereal harvests in Zimbabwe and Zambia falling 50% and 43% below average, respectively.



Prof. Desmond Manatsa

Interim President, AADRI

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2. Reflections on the 7th Global Summit (Fort Collins, July 2025)

- AADRI's contributions to the summit and the 10th Anniversary of GADRI emphasized "African-led solutions for African challenges". Our inputs on the theme "Converging Disaster Research and Stakeholder-Engagement for Resilience" focused on:
 - Bridging Science with Practice: Translating complex climate data into actionable policy and local-level implementation.
 - Multi-Hazard Early Warning Systems (MHEWS): Advocating for the scale-up of the Africa Multi-Hazard Early Warning and Early Action System (AMHEWAS) to reach the last mile.
 - Sendai Framework Targets: Aligning African research with the Windhoek Declaration (2025) to reduce damage to critical infrastructure and disruption of basic services.
- The 7th Global Summit and the 10th Anniversary

of GADRI served as a catalytic turning point for our regional alliance. Representing AADRI, I also presented on the theme "Integrating Climate Science into Building Back Better," emphasising the following pillars:

- African-Led Solutions for African Challenges
- We advocated for a paradigm shift where local expertise drives the resilience agenda. AADRI presentations focused on:
 - *Transdisciplinary Action*: Bridging global excellence with local realities by integrating academic research with community-led policy development.
 - *Equitable Technology*: Promoting the use of "easy-to-use but hard-to-reach" technologies to ensure scientific insights reach the most vulnerable.
 - *Science-Policy Brokerage*: Turning high-level research into actionable roadmaps for the Sendai Framework.



Participation of Prof. Desmond Manatsa (AADRI president at the 7th GADRI Summit). Prof Manatsa is wearing a brown jersey in the left panel and holding the mic in the right panel.



3. Anticipatory Action Community of Practice (CoP).

The Bindura University of Science Education is in the Anticipatory Action Community of Practice (CoP) in Zimbabwe. The CoP functions as a national collaborative platform for practitioners, policymakers, researchers, and organisations involved in anticipatory action initiatives. Its main objective is to share knowledge, experiences, and best practices related to anticipatory action in the context of disaster risk reduction and response. The CoP is coordinated by the government through the Department of Civil Protection and chaired by humanitarian actors on a rotational basis. During 2025, the CoP held a series of meetings and assessed the country's readiness to extend the hazards being covered under the AA from drought to floods, cholera and road traffic accidents.

4. 'Anticipatory Action in Humanitarian Interventions – Impacts, Challenges, and Trade-Offs in Uncertain Times'

- A round table was organised with funding from the Start Network to discuss the AA interventions in

Zimbabwe. Forewarn Experts, relevant Government ministries, and the Anticipation Action Community of Practice attended the roundtable. The workshop actually:

- Facilitated knowledge sharing among Start Network members, relevant government stakeholders, and the AA actors.
- Critically discussed the findings of the rapid evidence assessment regarding the social and economic impacts of anticipatory action, and grounded these in practical and operational experience.
- Collectively identified practical challenges and trade-offs in AA policy and practice, including institutional, financial, and implementation challenges in Zimbabwe.
- Strengthened collaboration and provided a platform for key stakeholders to align on shared priorities and evidence needs.



5. National Multi-Hazard Contingency Planning Workshop

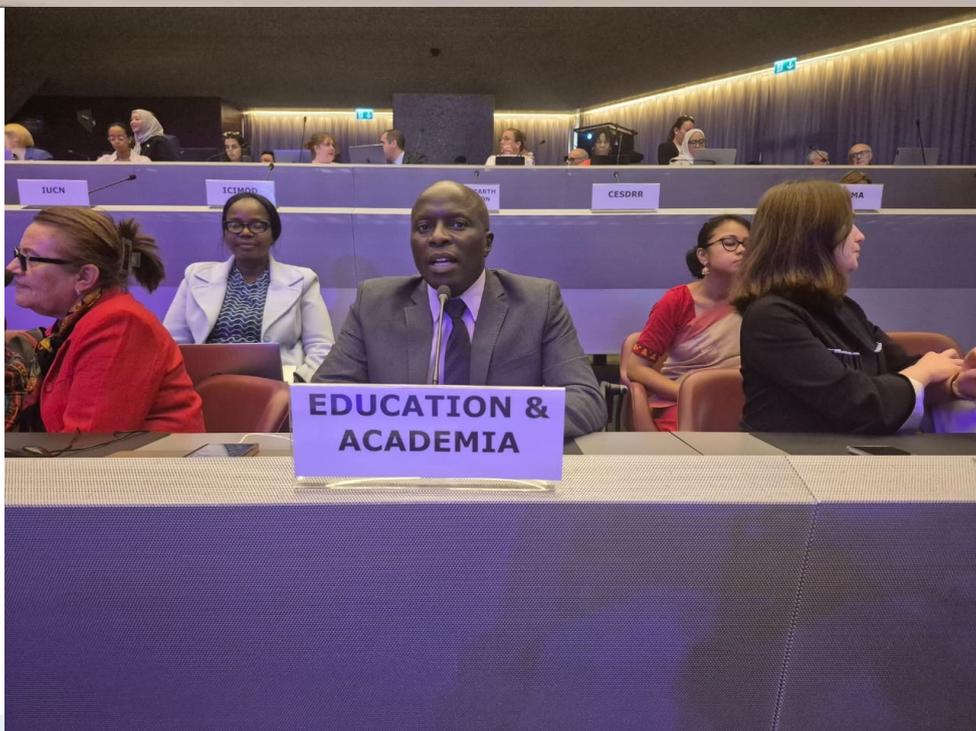
Zimbabwe reviewed its National Multi-hazard Contingency Plan for the 2025/26 season, led by the Department of Civil Protection as per the dictates of Section 9(1) of the Civil Protection Act (Chapter 10:06) to prepare for hazards such as tropical cyclones, floods, flash floods, dry spells, epidemics, zoonotics, road and mine accidents, among a plethora of other hazards. The planning process drew 90 participants from line Ministries, Government Departments and Agencies, Office of the UN Resident and Humanitarian Coordinator, UN Agencies, NGOs, academia, Traditional Leaders, among others, signifying a

collaborative, multi-sectoral approach. The plan was largely informed by the 2025/26 rainfall seasonal forecast and aims to improve preparedness and response at all levels, cognizant of the direct and indirect impacts of anticipated hazards. The planning process emphasised the importance of inclusive participation to ensure that vulnerable groups, including women, children, older people, and persons with disabilities, are not overlooked in the planning and response efforts.

6. Eighth Session of The Global Platform for Disaster Risk Reduction

The United Nations Office for Disaster Risk Reduction convened the Global Platform for Disaster Risk Reduction (Global Platform) in June 2025 in Geneva, which prof Emmanuel Mavhura attended. The Global Platform is the forum for assessing and discussing progress in implementing the Sendai Framework for Disaster Risk Reduction and advancing concerted implementation of disaster risk reduction, sustainable development, and climate change mitigation and adaptation. The United Nations General Assembly and the United Nations Economic and Social Council

recognise its outcomes. Embodying an all-of-society approach, the Global Platform was an accessible, inclusive, multi-stakeholder platform. The Global Platform played a crucial role in mobilising and fostering collaboration among governments, stakeholders and the United Nations system to accelerate the implementation of disaster risk reduction. The Global Platform advanced progress toward achieving the goals and related targets and indicators of the Sendai Framework for Disaster Risk Reduction, as well as relevant Sustainable Development Goals targets, by sharing good practices and lessons learned, energising the global disaster risk reduction community around new initiatives, identifying gaps, and making recommendations.



Global Platform for DRR (Geneva, 2025): Associate Prof. Emmanuel Mavhura represented AADRI's interests at the UN's primary forum, focusing on disaster risk financing and linkages to climate adaptation.

Disaster Management Training and Education Centre for Africa, University, University of Free State, South Africa

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(DiMTEC) at the University of the Free State continued to strengthen its leadership in disaster risk reduction, climate change adaptation, and resilience-building across Africa. Through impactful research projects, international collaborations, high-level policy engagements, conferences, and capacity-building initiatives, the Centre contributed to advancing knowledge and practice in disaster risk management while supporting vulnerable communities and strengthening partnerships with governments, continental organisations, and global institutions.

Key Research Projects and Community Engagement

One of the most significant projects undertaken by UFS-DiMTEC during 2025 was the disaster risk assessment initiative conducted in the Alfred Nzo District Municipality. The project involved extensive community engagement across the municipalities of Matatiele, Umzimvubu, Winnie Madikizela-Mandela, and Ntabankulu. Following two weeks of intensive field engagement with local communities and stakeholders, the DiMTEC team returned to the district to facilitate a validation workshop held from 5–6 February 2025.

The risk assessment project is particularly important as it provides the scientific and community-informed foundation for the district's fire and flood contingency plans. The project demonstrates DiMTEC's commitment to combining academic expertise with local knowledge to support practical disaster preparedness solutions at the municipal level. The initiative was made possible with the support of the Old Mutual Foundation.

Another important research initiative involving DiMTEC researchers was the Resilience Rewired project, which forms part of the Southern African Resilience Academy (SARA). Prof Alice Ncube and Dr Lum participated in the academy workshop held from 8–11 April 2025. The academy is coordinated by the Centre for Sustainability Transitions at Stellenbosch University in partnership with the Global Resilience Partnership.



Prof. A.A. Ogundeji

Academic Head of Dept

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The Resilience Rewired project focuses on transforming resilience strategies in humanitarian aid programmes across Southern Africa. Anchored in CARE's resilience programmes in Malawi, Zambia, Zimbabwe, and Mozambique, the project examines the effectiveness of current resilience-building interventions and explores ways to improve them. The research incorporates CARE's existing programme data, participatory methods such as Group Concept Mapping, and engagement with stakeholders to co-produce knowledge that bridges the gap between academic research and humanitarian practice.

The project will produce several outputs, including peer-reviewed publications, policy briefs, practitioner guidelines, and frameworks that aim to strengthen service delivery and influence policy development. This initiative reflects DiMTEC's growing role in contributing to global resilience knowledge networks and advancing transformative approaches to climate adaptation.

Capacity Development and Training Initiatives

Capacity building remained a core component of DiMTEC's work in 2025. Prof Alice Ncube participated in the Network of Excellence (NoE 111) training on Trigger Development for Anticipatory Action, held at the University of Cape Town from 26–30 May 2025. The Network of Excellence initiative aims to strengthen collaboration among African research and academic institutions working in disaster risk reduction.

The training workshop focused on supporting experts from Ghana, Uganda, and Mozambique in developing quantitative and qualitative triggers for anticipatory action systems. These triggers help governments and humanitarian organisations take early action before disasters occur by using climate forecasts, environmental data, and social vulnerability indicators. The workshop also emphasised the integration of gender considerations, social inclusion, and indigenous knowledge systems in anticipatory action frameworks, highlighting the importance of inclusive and context-specific approaches to disaster preparedness.

Eliana Seviyanu and Prof Ramona Balc from Babes-Bolyai University in Cluj-Napoca, Romania. The exchange took place from 13–17 April 2025 and provided an opportunity for knowledge sharing and collaboration across disciplines.

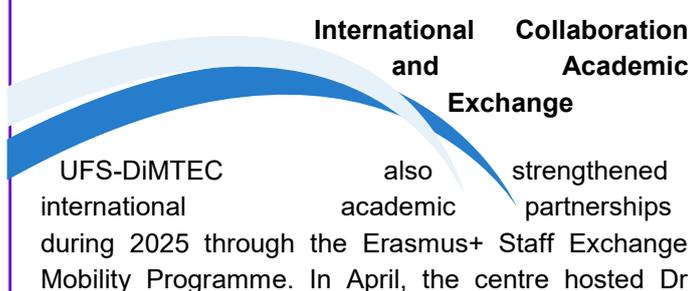
During their visit, the scholars engaged with colleagues on research related to geology and zoology and participated in academic discussions and cultural exchange activities. The visit further strengthened institutional collaboration between the University of the Free State and Babes-Bolyai University while providing opportunities for future joint research and academic engagement.

Participation in Global and Continental Platforms

DiMTEC researchers continued to contribute to global and continental policy dialogues in disaster risk reduction and climate resilience. Prof Johanes Belle and Prof Abiodun Ogundeji represented the University of the Free State at the 8th Global Platform for Disaster Risk Reduction (GP2025) held in Geneva, Switzerland, from 2–6 June 2025.

The Global Platform is the world's leading international forum dedicated to disaster risk reduction and brings together governments, UN agencies, academics, and civil society organisations. Prof Belle served on the organising committee for a thematic session focusing on leveraging the value of nature for resilience building and preventing future risks. He also participated as a panellist discussing locally led good practices for scaling up nature-based solutions to address disaster and climate risks.

Prof Alice Ncube was also invited to participate in the African Union Multi-Hazard Early Warning System and Early Action (AMHEWAS) Technical Working Group workshop, held in Accra, Ghana, from 23–24 July 2025 - <https://www.undrr.org/news/africa-unites-annual-africa-multi-hazard-early-warning-system-and-early-action-programme>. The AMHEWAS programme is the African Union's flagship initiative aimed at strengthening disaster preparedness and early warning systems across the continent. In addition, Prof Ncube joined the Zimbabwe FOREWARN Group of Experts <https://startnetwork.org/learn-change/resources/library/forewarn-2025-newsletter> which provides scientific and technical guidance for forecast-based early warning and anticipatory humanitarian action. The group supports the Start Network, a global consortium of more than 130 humanitarian organisations working to improve early action and rapid crisis response mechanisms.



Conferences, Workshops, and Leadership Engagements

DiMTEC staff and researchers actively contributed to conferences and professional forums during 2025. Dr Tlou Raphela-Masuku was invited as a speaker at the 4th Annual Women in Emergency Management System, Disaster, and Fire Services Leadership Conference, held in Sandton, Gauteng, from 7–8 August 2025 https://www.frimedia.org/uploads/1/2/2/7/122743954/main_womeninems4-min.pdf. Her presentation focused on the intersection of climate change and disaster management and highlighted the importance of women's leadership in strengthening resilience and disaster preparedness.

Prof Alice Ncube also participated in the Africa Urban Resilience Programme (AURP) Technical Working Group workshop held in Cape Town from 14–16 August 2025. The workshop brought together experts from across Africa to provide technical guidance on urban resilience strategies and support the implementation of climate adaptation initiatives aligned with African Union priorities.

At the provincial level, DiMTEC researchers participated in the inaugural meeting of the Free State Provincial Climate Change Adaptation Technical Team held on 26 September 2025 in Bloemfontein. The meeting brought together representatives from government, academia, and the agricultural sector to discuss strategies for climate change adaptation and mitigation within the province.

Publications and Knowledge Dissemination

DiMTEC researchers also contributed to important knowledge products during the year. Dr Tlou Raphela-Masuku contributed to the Free State Climate-Smart

Agriculture Guide, a collaborative publication designed to strengthen the adaptive capacity of smallholder farmers in the province. She authored Chapter 4: Agricultural Water Management, which highlights practical strategies for improving water use efficiency and strengthening agricultural resilience in semi-arid environments. The chapter outlines accessible and low-cost practices such as rainwater harvesting, mulching, soil moisture conservation, and the use of drought-tolerant crops.

In addition to these contributions, DiMTEC academics and postgraduate students participated in research conferences addressing climate change, disaster risk reduction, and resilience. Dr Olivia Kunguma delivered a keynote presentation on risk communication in the climate change era, while several postgraduate students presented research on disaster risk communication, climate adaptation strategies, and municipal resilience.

Conclusion

The achievements of UFS-DiMTEC in 2025 demonstrate the Centre's continued commitment to advancing disaster risk reduction, climate resilience, and sustainable development in Africa. Through impactful research projects, international partnerships, training initiatives, and policy engagement, the Centre continues to bridge the gap between academic research and practical solutions that support communities, governments, and organisations in building resilient futures.

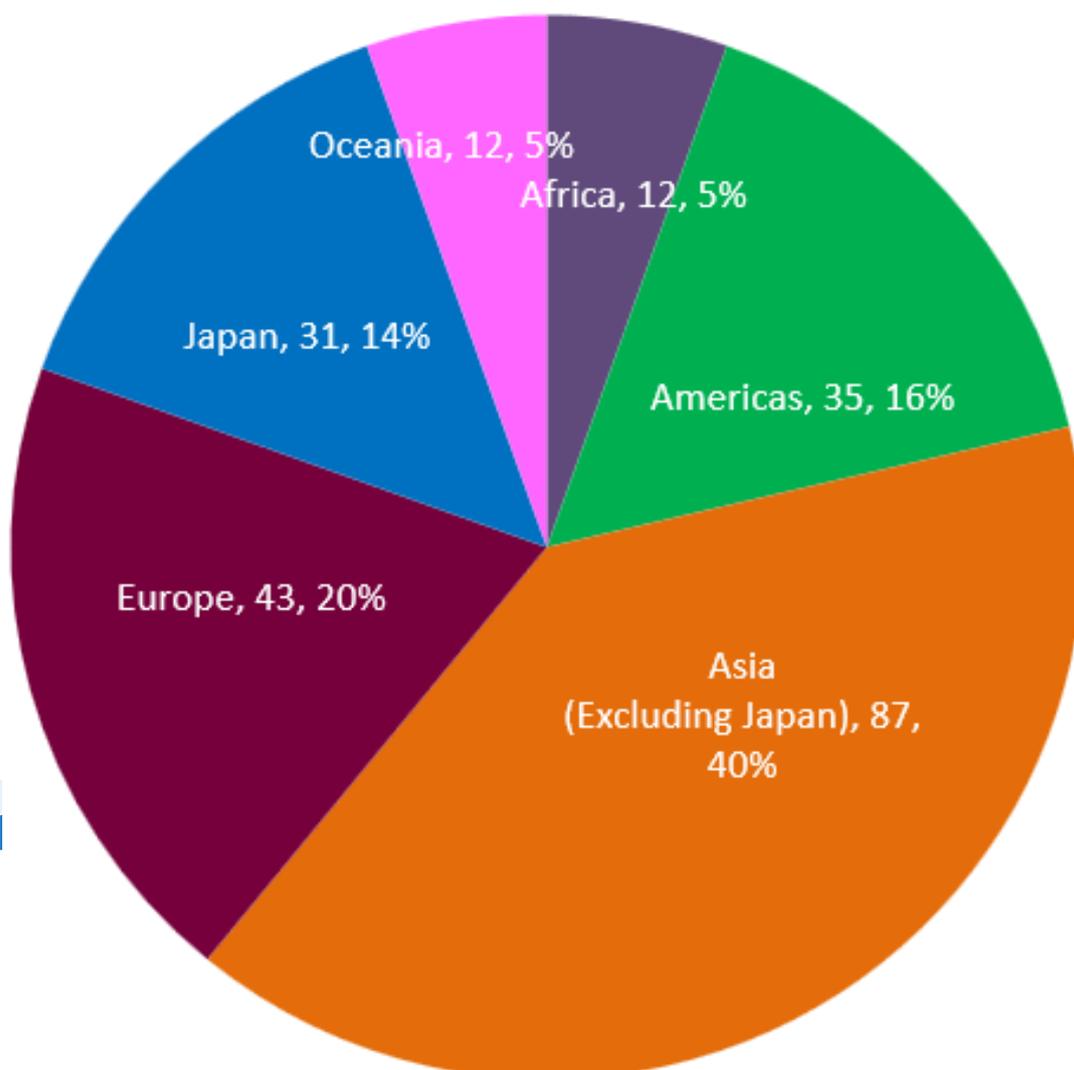
See attached newsletter- <https://www.ufs.ac.za/natagri/departments-and-divisions/disaster-management-training-and-education-centre-for-africa-home/news-and-events/newsletters>



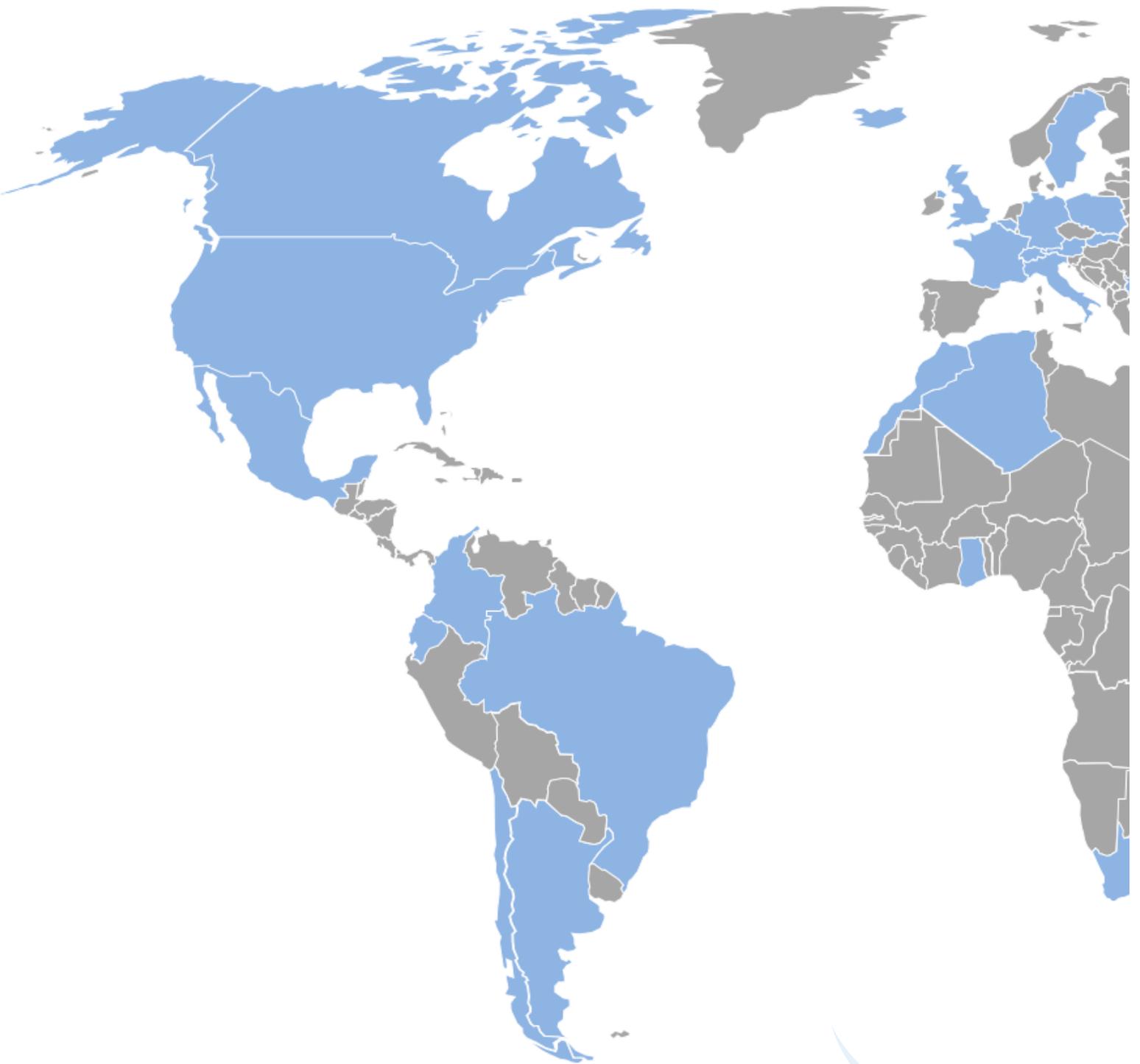
Prof. Alice Ncube

Members of GADRI as of 31 December 2025

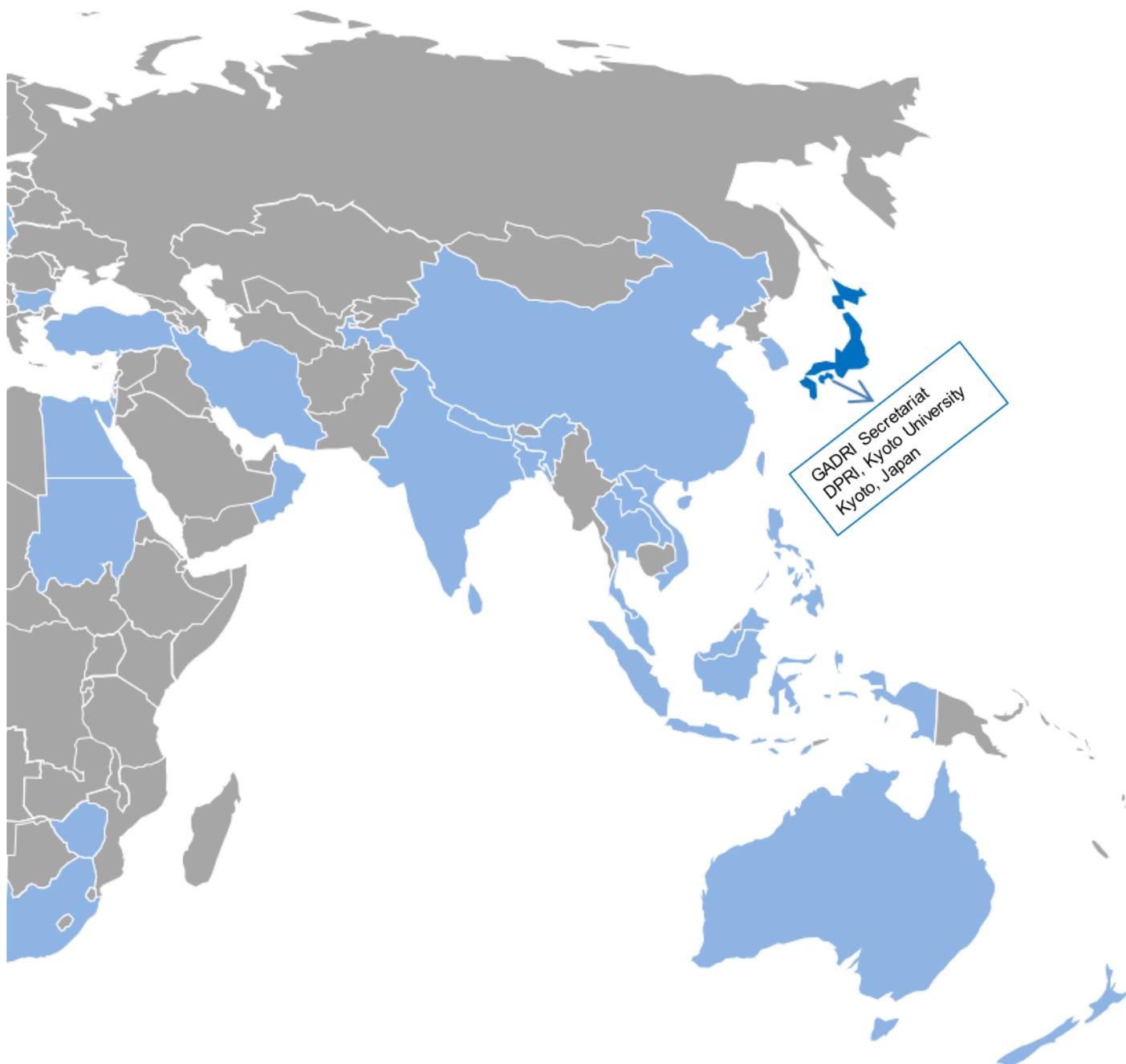
Area	Members	Economies
Africa	12	7
Americas	35	8
Asia (Excluding Japan)	87	24
Europe	43	15
Japan	31	1
Oceania	12	2
Total Institutes	220	57
	57 economies	



Geographical Distribution of



Members of GADRI as of 31 December 2025





GADRI Secretariat, Disaster Prevention Research
Institute (DPRI), Kyoto University, Japan



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