Office of the
Inspector-General of
Emergency Management

2026 QUEENSLAND DISASTER MANAGEMENT RESEARCH FORUM

Research outside the norm

—challenging assumptions, methods and boundaries through disruptive thinking with real-world impact.

#QldDMResearchForum26

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The 2026 Queensland Disaster Management Forum program is brought to you thanks to the efforts of our Working Group members

2026 QUEENSLAND DISASTER MANAGEMENT RESEARCH FORUM

Office of the Inspector-General of **Emergency Management**

Program

8am	**ARRIVAL & REGISTRATIONS**
8.30–9.30am	**SESSION ONE**
8.30am	**Welcome and housekeeping** Kate Retzki, Director, Research and Communications Office of the Inspector-General of Emergency Management
8.40am	**Opening remarks** The Honourable Daniel Purdie MP Minister for Police and Emergency Services
8.50am	**Opening remarks** Alistair Dawson APM Inspector-General of Emergency Management
9am	**Opening keynote** **Close Encounters with Disasters** Dominique Hogan-Doran SC Board Chair, Natural Hazards Research Australia
9:30–10am	**MORNING TEA & POSTER PRESENTATIONS**
10am–12pm	**SESSION TWO**
10am	**Rethinking Bushfire Spread: Large-Scale Experiments on House-to-House Fire** Dr Sahani Hendawitharana (QUT), Acting Inspector Fiona Rose (QFD) and Inspector Leigh Grayson (QFD)
10.25am	**Research Outcomes on Design and Construction of Emergency Management Buildings** Dr David Henderson (JCU)
10.50am	**Imagining the Future of Recovery Operations for Emergency Services in a Climate-Challenged World** Natalie Oliver (QFD), Lillian Norris (UQ)
11.15am	**Vertical Living, Vertical Challenges: Policy and Practice Considerations for Flood-prone Strata** Dr Monica Taylor (QUT), Dr Fiona Crawford (QUT) and Professor Rowena Maguire
11.40am	**The Examination of Domestic Family Violence Planning by the Emergency Management Sector** Andrew Williams (CSU)
12–1pm	**LUNCH & POSTER PRESENTATIONS**





1–3pm — **SESSION THREE**

1pm

The Missing Level: Neighbourhood Disaster Plans on the Oxley Creek Floodplain

Dr Paula Hardie, Dr Deanna Borland-Sentinella
(Benarrawa Community Development Association)

1.25pm

Rethinking AEP: Towards Community-Centred Flood Risk Communication

Professor Amisha Mehta (QUT)

1.50pm

Unravelling the Earthquake History in Our Backyard: An Investigation into the Caboolture Scarp

Coralie Muddle (MBRC), Dr Jane Sexton (QFD)

2.15pm

Developing Adaptive Capability for Complex and Uncertain Environments

Associate Professor Julienne Senyard (Griffith), Dr Ellie Meissner (Griffith), Acting Inspector Robb Wann (QPS), Inspector George Shand APM (QPS) and Erin Cash (QPS)

2.40pm

Evaluating the Equitable Mobilisation of Homeowners in the QLD Resilient Homes Fund

Dr Rosie Gallagher (UQ), Dr Tyler Riordan (UQ)

3–3.30pm — **AFTERNOON TEA & POSTER PRESENTATIONS**

3.30–4pm — **SESSION FOUR**

3.30pm

Closing keynote

One Health, One Response, One Community: The Critical Role of Social Science in H5 Bird Flu Preparedness and Response

Dr Rachel Chay, Deputy Director-General and Chief Biosecurity Officer, Department of Primary Industries

Closing remarks

Kate Retzki, Director, Research and Communications
Office of the Inspector-General of Emergency Management

4pm — **EVENT CLOSURE**

Poster presentation catalogue

SEE PAGE 21 FOR FULL PRESENTATIONS

Sophie Walker, The Cairns Institute, James Cook University
The Intersection of Disaster and Domestic Violence in Far North Queensland

Pallav Pant, Griffith University
Co-Designing Accessible Emergency Communication: Emerging Insights from Deaf and Hard of Hearing Communities in Queensland

Meenal Nand, Griffith University
Evolving Inclusion: A Global Review of Disaster Risk Reduction (DRR) for Individuals with Chronic Illnesses (ICI) in Developing Countries

Meenal Nand, Griffith University
Healthcare Workers' (HCWs) Role in Inclusive Disaster Risk Reduction (IDRR) for Individuals with Chronic Illnesses (ICIs) in Fiji Islands: A Qualitative Study

Dr Adam Lo OAM, Metro South Health
When Everything Changes: Occupational Therapy as a Disruptive Force in Disaster Management

Dr Turgut Acikara, Queensland Police Service
Exploring the Integration of Artificial Technologies (AI) to Enhance Decision-Making Predictive Capabilities, and Operational Efficiency in Disaster Response and Recovery

Isabella Crebert, Queensland Police Service
Exploring the Technology Landscape Assessment in Disaster Response and Recovery

Associate Professor Shannon Rutherford, Griffith University
Advancing Heat Action in Australia: Where to from Here?

Elena Skoko, Queensland University of Technology
Maternal Populations in Disaster Governance: Australia vs. Indonesia

Masha Kondrasheva, University of Newcastle
Rethinking Prevention in Disaster Waste Management

Dr Dimity Miller, Queensland University of Technology
From URM Building Mapping to Emergency Response Intelligence: A Scenario-Based Framework for Earthquake Preparedness in Australia

Ifthaz Hameed Savul Hameed, Queensland University of Technology
Experimental Study of Outdoor Fire Exposure on a Building

Most Nilufa Khatun, Griffith University
Rethinking Resilience: The Role of Women's Earning Participation in Household Food Security Under Climate Stress

Madhushan Vijesundaram, Queensland University of Technology
Experimental Studies of Solar Panel-Installed Steel-Clad Roofs under Bushfire Conditions

Presenter abstracts and biographies

Opening keynote

Dominique Hogan-Doran SC, Board Chair, Natural Hazards Research Australia

Close Encounters with Disasters

Abstract

Disasters following natural hazards cost Australia about $38bn annually and are common enough to have left childhood or later memories in the minds of most people. Memories provide an unreliable record of events, much less lessons; it is only through carefully planned and methodically conducted research that we can identify drivers and improvement opportunities including capabilities and relevant innovations to inform policy and practice. Natural Hazards Research Australia invested $38m across 112 projects in its first five years and has successfully facilitated end-user driven research that has delivered real-world benefits, as well as build systems and workforce capability. Dominique Hogan-Doran SC draws on her experiences including as Board Chair of Natural Hazards Research Australia to champion the role of research, and to offer some insights based on her time as Senior Counsel Assisting the Royal Commission into National Natural Disaster Arrangements.



Dominique Hogan-Doran SC is the Board Chair of Natural Hazards Research Australia, the national centre for natural hazards resilience and disaster risk reduction research. An experienced Board Chair, Non-Executive Director and a leading silk of the Australian Bar, she brings deep expertise in governance, regulation, strategy and risk management. Dominique joined the Board following her role as Senior Counsel Assisting the 2020 Royal Commission into National Natural Disaster Arrangements.

As Board Chair, she helps guide investment in evidence-based research and the Centre's approach to collaboration across government, research, industry and communities to strengthen Australia's natural hazard preparedness and resilience. Her leadership includes roles with the International Bar Association's Climate Change Working Group and the Oxford University Climate Leadership Research Centre.

Dominique is a Fellow of the Australian Academy of Law, the Governance Institute of Australia and the Chartered Institute of Arbitrators and holds degrees in economics and law from the University of Sydney and the University of Oxford.

Presenters in order of appearance

PRESENTATION

Dr Sahani Hendawitharana, Acting Inspector Fiona Rose and Inspector Leigh Grayson

Rethinking Bushfire Spread: Large-Scale Experiments on House-to-House Fire

Abstract

The increasing frequency and intensity of bushfires are becoming challenging for suburban communities: once a house ignites from bushfire, the fire can rapidly spread to neighbouring buildings and escalate to urban conflagrations. Major bushfire events, including the 2003 Canberra fires, 2018 Tathra and California fires, the 2023 Hawaii fires, and more recently the 2025 LA fires, have shown the devastating consequences of cascading house-to-house fire spread. Yet, the behaviour of fire as it transitions from one building to another remains poorly understood and difficult to represent using conventional building-scale or component-based approaches. This research addresses this challenge through a program of large-scale experiments designed to reproduce house-to-house fire scenarios. The experiments investigate how building separation, configuration, combustible surroundings, radiant heat, flames and firebrands interact to drive secondary ignition. The resulting evidence aims to strengthen understanding of cascading fire behaviour and support more realistic disaster preparedness, risk assessment and mitigation strategies for vulnerable suburban communities.



Dr Sahani Hendawitharana is a Postdoctoral Research Associate at Queensland University of Technology (QUT), focusing on disaster resilience, structural engineering, and bushfire impacts on the built environment. Her research combines large-scale experimental testing, computational modelling, LiDAR and artificial intelligence to understand building vulnerability, investigate bushfire impacts and develop practical approaches to improving community resilience. She works across engineering and research sectors, with a strong interest in translating scientific evidence into practical solutions that inform building safety and disaster risk reduction.

Fiona Rose is an Acting Inspector in the Queensland Fire Department. With a thorough appreciation of the Disaster Management cycle through undertaking a Master in Disaster and Emergency Management in combination with 12 years of operational firefighting experience across a broad spectrum of environments, she focuses her efforts on maintaining a high level of firefighter safety, primarily in the preparation and mitigation phases. Combined with 14 years' experience in the Australian Army, her passion, skills and interest continue to be focussed on service to the community and providing practical support to improve community resilience.





Inspector Leigh Grayson is Area Commander for Gatton Command, Toowoomba Division, Queensland Fire Department, with 23 years of service, rising through the ranks from firefighter to Inspector. He now implements and supports policy to support crews while promoting community safety and resilience. As a Technical Rescue Technician, Leigh has supported numerous deployments during natural disasters in Queensland, primarily focusing on swift water rescue and flood response, and was a part of an incident management team to the 2023 Alberta wildfires in Canada. He contributes to disaster management initiatives in the Lockyer Valley and Gatton and brings extensive knowledge in electrical safety, building construction, and building codes.

PRESENTATION

Dr David Henderson

Research Outcomes on Design and Construction of Emergency Management Buildings

Abstract

Both wind damage and wind-driven rainwater ingress can compromise the functionality of buildings, even well below the design criteria. Understanding this vulnerability is especially important for buildings that house Emergency Management functions. These buildings are often designed at a higher importance level than the surrounding community, but other factors that are not covered in the National Construction Code may limit the ability of the building to function as expected after a severe wind event, even well below the design criteria. This paper examines several case studies and presents a list of items and features that need to be considered in a design brief for new emergency buildings or refits to existing buildings. It draws on CTS experience of high wind events in Queensland and elsewhere in Australia.



Dr David Henderson is the Research Director of the Cyclone Testing Station at James Cook University. David leads the CTS team of researchers, product testing engineers, and technicians, towards the Station's goals of improving the safety of communities to cyclones and severe storm events. He has over 30 years' experience as a research engineer breaking everything from screws to complete houses. David has conducted damage investigations following extreme wind and hail events and is a member of Australian Standards Committees for wind loads and cladding materials.

PRESENTATION

Natalie Oliver, Lillian Norris

Imagining the Future of Recovery Operations for Emergency Services in a Climate-Challenged World

Abstract

In a climate-challenged world, emergency service recovery must evolve to meet increasingly complex, interconnected and uncertain risks. This presentation explores how the Queensland Fire Department (QFD) used the Transformative Scenarios approach to examine the future of recovery operations and test whether current recovery models remain fit for purpose.

Drawing on a collaborative project with a University of Queensland researcher and informed by scenario planning developed through Natural Hazards Research Australia, the study considers four alternative futures to identify barriers, opportunities and emerging recovery needs.

Findings highlight three key themes: the need to broaden recovery beyond short-term post-event activities and better connect it to long-term resilience; the importance of embedding staff and volunteer wellbeing into recovery systems; and the value of stronger community partnerships and adaptive capability development. Together, these insights support a more adaptive, people-centred and resilience-focused approach to recovery in Queensland.



Natalie Oliver is a hazard and risk professional with experience across the Queensland Government, Australian Government and private sector, with expertise in disaster risk, resilience, climate policy and strategic planning.

She currently works in the Hazard and Risk Unit at the Queensland Fire Department, where her work focuses on risk analysis, strategy development, geospatial capability and supporting organisational planning in a complex and evolving risk environment.

Natalie has developed strong expertise in climate change, emergency management, resilience and cross-sector collaboration, supported by a Master of Climate Change and experience working with government, industry and community stakeholders.

Lillian Norris is a human geography researcher at the University of Queensland. She is interested in understanding the most effective ways of addressing climate-driven loss and damage. Her PhD looks at how people in Australia and Vanuatu experience and work through loss and damage to emotional wellbeing.

Lillian has worked as an academic tutor in the School of Environment and loves creating a positive and inspiring space for students to learn and engage with university. She currently works as a community liaison officer at UQ.



PRESENTATION

Dr Monica Taylor, Dr Fiona Crawford and Professor Rowena Maguire

Vertical Living, Vertical Challenges: Policy and Practice Considerations for Flood-prone Strata

Abstract

As flooding increasingly affects higher-density housing, strata title and apartment living represent a growing but under-examined area of disaster research. This presentation draws on non-fiction storytelling, case studies, and Carol Bacchi's What's the Problem Represented to Be? (WPR) framework to explore how disaster management and community title law and policy conceptualise flood risk, responsibility, and resilience in strata communities located in flood-prone areas. Using case studies from Brisbane, a city primarily built on a floodplain and experiencing high growth in apartment construction and dwelling (especially in the lead up to the 2032 Olympic and Paralympic Games) we apply the WPR framework to uncover assumptions in disaster management, community title and climate adaptation policies in relation to flood risk management and disaster recovery for people living in apartments. This study includes interviews subject to a study run through the QUT Centre for Justice under Human Research Ethics Committee approval (HRE7056).



Dr Monica Taylor is a socio-legal scholar from the QUT School of Law whose work explores climate and disaster justice, adaptation and resilience, with a focus on people and communities disproportionately affected by climate harm. Monica's research critically examines the role of law in addressing inequality, and how law and governance can support fair and equitable responses to disasters and climate change.



Dr Fiona Crawford is a writer, editor, and researcher whose work spans social and environmental issues (including disaster management), the arts, and football. An Adjunct Lecturer at the QUT Centre for Justice, her current research focuses on shared responsibility and strata in flood-prone areas and the use of sport for social change

Professor Rowena Maguire is Director of the QUT Centre for Justice. Rowena is an active research leader and interdisciplinary scholar who undertakes research in collaboration with industry, community, and interdisciplinary university partners. She enjoys work that is connected to ground, and which has the potential to influence change.

PRESENTATION

Andrew Williams

The Examination of Domestic Family Violence Planning by the Emergency Management Sector

Abstract

Knowledge of increases of Family Violence (FV) has been reported for decades, yet little is known about if and how the disaster/emergency management sector has responded to this research. To address this gap in our knowledge a benchmarking exercise was undertaken to identify what, if any, planning for FV was undertaken by the local disaster/emergency management sector.

The findings are clear, FV planning for the sector occurs in 1.5% of all local disaster/emergency management plans across Australia. In Queensland 12 plans referred to FV, with no plans in Queensland demonstrating actual FV planning. No references to FV were made in any plans from NSW, SA, NT and WA despite Commonwealth Government expectations.

This presentation will identify the four common risks, articulated in a way that sector participants can plan and operationally implement in their standard risk assessment process. The risks are derived from the research and current FV planning practices.



Andrew Williams is a Lecturer/Researcher in Emergency Management (EM). Prior to this, Andrew has worked in EM roles in local government, health and the tertiary sector.

Andrew holds his Master of Emergency Management and has submitted his thesis for Doctor of Public Safety. Andrew research EM planning for family violence (FV). The research established the government expectations on the sector to plan for FV. This research has identified a significant practice gap demonstrating that only 1.5% of local government Disaster Management Plans in Australia planned for FV.

Andrew then examined the potential challenges to planning for FV. The research identified FV as a hazard and no clear risks had been defined. Using the research, government documents and the plans that had planned for FV, the risks were clarified and are now clearly documented.

PRESENTATION

Dr Paula Hardie and Dr Deanna Borland-Sentinella

The Missing Level: Neighbourhood Disaster Plans on the Oxley Creek Floodplain

Abstract

The Queensland Disaster Management Arrangements (QDMA) recognises three levels of managing disasters: local, district and state. In Brisbane, the 'local' level is represented by Australia's largest local Council with a population of 1.3 million residents spanning 26 wards of which 20 are flood prone. For residents living in high-risk flood zones, such as around Oxley Creek (Benarrawa), 'local' emergency information can be too general or too late. To coordinate faster, more locally relevant disaster responses, residents in Oxley and Corinda are connecting with their neighbours to develop formal and informal disaster plans and strategies in anticipation of future flood events. This presentation offers a descriptive case study of how Benarrawa Community Development Association workers have supported Oxley Creek residents to undertake this work using a community development methodology since the 2011 Brisbane Flood. It aims to share and recognise successful neighbourhood-level disaster management: the missing level in the QDMA.

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Dr Paula Hardie is the Neighbourhood Resilience Worker at Benarrawa Community Development Association in Graceville, Brisbane. She supports Oxley Creek residents to prepare and plan for floods and disasters by facilitating neighbourly connections, organising community events, trainings and meetings. As a member of Resilient Kurilpa, she also supports Brisbane apartment communities to develop disaster plans and communication strategies. Paula has a Bachelor of Design Futures (Visual Communication Design) and PhD in design for community resilience from Griffith University.

Dr Deanna Borland-Sentinella is a Community Development Coordinator at Benarrawa Community Development Association in Graceville, Brisbane. They develop relationships across the local community and wider disaster management sector to strengthen the resilience of Oxley Creek residents. Deanna also works within Metro South Health's disaster recovery team, applying creative approaches to community recovery and resilience. They hold a PhD in applied theatre and community development from the Queensland University of Technology.



PRESENTATION 6

Professor Amisha Mehta

Rethinking AEP: Towards Community-Centred Flood Risk Communication

Authors

Amisha Mehta, Clinton Weeks, Kate Delmo, Ellen Tyquin, Chris Symons, Manuela Taboada, Hannah Purser, William Prentice

Abstract

Technical flood risk management language such as annual exceedance probability, freeboard, and probable maximum flood are normative to specialists in flood risk management and land use planning. However, to most people, these terms are unfamiliar and require significant processing effort that can lead to inaccurate application or avoidance. Critically, these technical terms are important to support an understanding about flood risk, insurability, and decisions about home purchase or renovation.

Practitioners and academics recognise that these terms are historically challenging for community use. Through interviews with community members (n=40) and specialists (n=30), and a national survey (n=2,400), insights about how and where community members approximate meaning or misunderstanding and new approaches to practice are shared. These findings have important insights and may challenge the norms for flood risk management communication but can support community decision-making.

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Professor Amisha Mehta specialises in risk and crisis communication and trust at QUT. She leads several flood risk communication projects at NHRA and is the Program lead for Resilient Communities and Infrastructure in QUT's Centre for Environment and Society. Amisha has co-edited The Routledge Handbook or Risk, Crisis, and Disaster Communication and published in international journals. Her research has evidenced the Australian Warning System and supported policy and practice. In 2026, she was recognised for excellence in disaster management research by the Office of the IGEM Queensland's International Women's Day awards.

PRESENTATION

Coralie Muddle and Dr Jane Sexton

Unravelling the Earthquake History in Our Backyard: An Investigation into the Caboolture Scarp

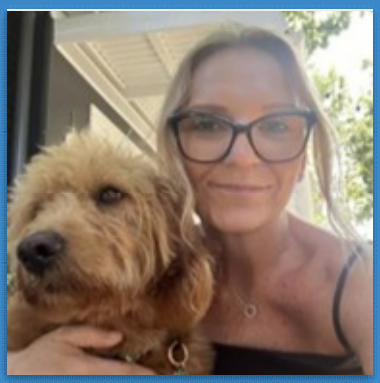
Abstract

What happens when evidence of a major earthquake is discovered beneath one of Australia's fastest-growing regions?

Recent investigations into the Caboolture Fault have revealed evidence of a significant prehistoric earthquake in the City of Moreton Bay, challenging long-held assumptions about earthquake risk in South East Queensland. This presentation explores the first detailed paleoseismic investigation of its kind undertaken in Queensland, bringing together researchers, emergency managers and government agencies to better understand the implications of a low-frequency, high-consequence hazard.

The session will share preliminary findings from the investigation and examine how geological research can be translated into practical disaster management outcomes. Beyond the science, it highlights the value of partnerships between researchers and practitioners in developing credible risk assessments, evidence-based scenarios and informed preparedness planning.

The goal is not to predict the next earthquake, but to ensure we are not seeing the consequences for the first time on the day it occurs.



Coralie Muddle is the Disaster Management Coordinator for the City of Moreton Bay, leading programs that strengthen disaster preparedness, response capability and community resilience across one of Australia's fastest-growing regions. She has experience across local, state and Commonwealth emergency management, with a background in disaster risk reduction, emergency planning, lessons management and policy development. Throughout her career, Coralie has worked to connect research, operational experience and strategic decision-making to improve outcomes for communities before, during and after disasters.

She is passionate about building resilient communities through evidence-based practice, continuous improvement and strong partnerships across government, emergency services and academia



Dr Jane Sexton joined the Queensland Fire Department (QFD) in 2022 after 20 years with the Australian Government delivering scientific products and advice to support the government's policies in disaster resilience, national security and science and innovation. Jane was responsible for delivering national natural hazard assessments, providing advice to national committees and forums, and collaborating with local and state government to translate national data for local application. Since joining QFD, Jane has been involved in a range of disaster risk management activities including local, state and national exercises, state-wide hazard and risk assessments and impact forecasting tools across multiple hazards. Jane is now responsible for the QFD State Intelligence, Predictions and Planning Branch which conducts research and analysis to provide foundational, evidence-based information and tools for decision making.

PRESENTATION

Associate Professor Julienne Senyard, Dr Ellie Meissner, Acting Inspector Robb Wann, Inspector George Shand APM and Erin Cash

Developing Adaptive Capability for Complex and Uncertain Environments

Abstract

Disaster management increasingly requires leaders to exercise judgement, adapt to uncertainty and coordinate across organisational boundaries. This presentation examines how adaptive capability can be deliberately developed through a research-informed partnership between Griffith University and the Queensland Police Service (QPS). Drawing on three years of co-designed pilot programs with data from two years (2025 –2026), we explore how experiential learning, scenario-based decision-making, reflection and cross-agency engagement strengthen individual, team and organisational capabilities. Evaluation findings indicate improvements in key adaptive capabilities, strong intentions to apply learning in disaster contexts, and the importance of relationships and shared understanding. We discuss lessons for translating research into operational practice and propose a sustainable pathway for developing adaptive capability across Queensland's disaster management system through continued learning, collaboration and communities of practice.



Associate Professor Julienne Senyard is the director of the Griffith Entrepreneurship Centre, and entrepreneurship and innovation academic at Griffith Business School, Griffith University. Her research explores how individuals, teams and organisations develop the capabilities to navigate uncertainty, exercise judgement, mobilise resources and adapt to complex environments.

Julienne works at the intersection of academic research and professional practice, with a particular interest in translating research into meaningful capability development. In a 3-year partnership with the Queensland Police Service (QPS) capability team, she has contributed to the co-design, delivery and evaluation of disaster management leadership programs focused on adaptive capability, decision-making under uncertainty, team effectiveness and cross-agency collaboration.

Her work seeks to strengthen individual and collective adaptive capability through experiential learning, reflection and evidence-informed practice.

Dr Ellie Meissner is a psychologist with extensive experience in academia, research, and industry, holding a PhD in Organisational Behaviour from the University of Queensland. she is a passionate advocate for wellbeing and employee voice. In her research she studies vulnerable populations and how we embed these voices in interventions. She has significant experience in co design and is passionate about ensuring all voices are heard.





Acting Inspector Robb Wann joined the Queensland Police Service (QPS) in 1991 and has more than 34 years of policing experience across operational, specialist and leadership roles. His career has included general duties policing, station and district leadership, counter-terrorism capability development, major operations and disaster management.

He is currently relieving as Inspector, Disaster Operations within the Emergency Management and Coordination area, supporting statewide disaster preparedness and operational coordination through the State Disaster Coordination Centre (SDCC). He has extensive experience working within the SDCC during activations in response to major severe weather and disaster events, supporting the coordination of statewide operations and Queensland's broader disaster management response. His broader QPS experience includes service as an Officer in Charge, District Duty Officer, Brisbane Region Executive Officer for Disasters, and leadership roles supporting Queensland's COVID-19 response.

Acting Inspector Wann has extensive experience in exercise design and management and maintains a strong interest in leadership, capability development and decision-making in complex environments. He is the creator and host of the QPS *Disaster Dialogues* podcast, exploring leadership experiences and lessons from across the disaster management sector, and has contributed to initiatives including the QPS and Griffith University *Decision Making in Contexts of Uncertainty* program.



Inspector George Shand APM joined the Queensland Police Service (QPS) in 1996, commencing his Queensland policing career at Mareeba following earlier policing experience in Scotland and London, England. He is currently an Inspector with the Emergency Management & Coordination Command, where he is responsible for supporting the development and assurance of disaster management capability across Queensland.

Since 2011, Inspector Shand has held significant operational and leadership roles within Queensland's disaster management arrangements. He has served as both Commander and Deputy Commander and has managed the State Disaster Coordination Centre (SDCC) during more than 30 major disaster events. During the COVID-19 pandemic, he performed a key leadership role in Queensland's whole-of-government response, including planning and coordination with the Australian Defence Force.

His broader emergency management experience includes secondments with the Queensland Reconstruction Authority as Deputy Recovery Coordinator following the 2022 Brisbane floods and the 2024 Gold Coast Hinterland storms. In 2023, he also led the practitioner review of the Queensland Disaster Management Arrangements in collaboration with the Inspector-General of Emergency Management. Inspector Shand has been recognised for his service with the National Emergency Medal and the Australian Police Medal. He is based at the State Disaster Coordination Centre in Kedron, Brisbane.



Erin Cash is a Principal Program Officer with the Queensland Police Service, specialising in disaster management education and bringing multi-agency experience in change management, capability development and stakeholder engagement. She has over 30 years' experience in QPS law enforcement, adult education, investigations, public safety and crisis management, as well as operational experience in the State Disaster Coordination Centre.

Erin holds qualifications in Public Administration and Communications, adult education, criminal and workplace investigations, public safety and human performance.

PRESENTATION

Dr Rosie Gallagher and Dr Tyler Riordan

Evaluating the Equitable Mobilisation of Homeowners in the QLD Resilient Homes Fund

Abstract

This presentation focuses on Section 5 of our evaluation of the Queensland Resilient Homes Fund (RHF), a $741 million program established in response to the 2021-2022 Southern Queensland floods. The RHF offered eligible homeowners three interventions: *Voluntary Home Buy-Back, House Raising,* and *Resilient Retrofit*. We examined how program delivery accounted for variation in homeowners' capacity to access information, make decisions, coordinate works, and sustain engagement. Our findings demonstrate that the RHF successfully supported participation by providing multiple forms of standardised, specialised, and tailored assistance. These supports were delivered by program staff and via Industry and Community Education (ICE) activities, in collaboration with stakeholders including Service Navigators and builders. By directly providing support and facilitating connections to additional sources of assistance, the program helped address equity barriers faced by registered homeowners with complex needs, enabling more participants to progress.



Dr Rosie Gallagher is a Postdoctoral Research Fellow at the University of Queensland whose research examines institutional disruption, community resilience, and recovery and adaptation processes in extreme contexts. Her work draws on qualitative and mixed methods approaches to examine how communities, governments, and other stakeholders navigate uncertainty, vulnerability, and change after disruptive events. She is currently researching disaster recovery, resilience, and planned relocation initiatives across Australia.

Dr Tyler Riordan is a Postdoctoral Research Fellow in Strategic Management at the University of Queensland. Tyler's research sits at the intersection of ethical challenges in business and society, extreme contexts, and precarious work. Tyler is a practitioner of immersive ethnography in varied contexts including government agencies, the 'gig' economy, |and training programs. In his current role, he is evaluating post-disaster reconstruction programs in Queensland and New South Wales against physical, financial, social, and emotional dimensions of resilience.



Closing keynote

Dr Rachel Chay

One Health, One Response, One Community

Abstract

Since H5 bird flu reached Australia in June 2026, more than 700 events have been confirmed in wildlife nationally, including 2 in Queensland. While the virus is biological, the response is human: it relies on people reporting, poultry producers ensuring strong biosecurity measures, wildlife carers protecting themselves, and communities trusting the actions governments take.

In this closing keynote, Queensland's Chief Biosecurity Officer Dr Rachel Chay explores how applying social science is essential to contemporary biosecurity responses.

Drawing on research into social licence, community attitudes towards H5 bird flu, and the psychosocial impacts of prolonged emergencies, Dr Chay discusses the risks of community disillusionment during lengthy responses and highlights the importance of communication, engagement and collaboration in sustaining public confidence.

The presentation offers practical insights into strengthening resilience, supporting recovery, and fostering a shared One Health approach to protecting animal, human and environmental health.



Dr Rachel Chay, Deputy Director-General and Chief Biosecurity Officer, Department of Primary Industries

Dr Rachel Chay was appointed as Deputy Director-General and Chief Biosecurity Officer of Biosecurity Queensland in early 2023.

In 2025, she was named Co-Chair of the National Biosecurity Committee (NBC), which provides strategic leadership on biosecurity policy across jurisdictions and sectors, and oversees the national biosecurity system and intergovernmental relationships.

Rachel has 25 years of experience in animal health, regulatory affairs and government leadership. She holds an undergraduate qualification in veterinary science, along with master's degrees in both human resources and organisational development, and public administration.

Rachel's primary focus lies in effective public sector leadership, building organisational capability, and fostering strong, collaborative partnerships with stakeholders.

Rachel is dedicated to ensuring Biosecurity Queensland continues to protect the ecosystems, industries and way of life in Queensland. She is committed to maintaining our reputation for product safety and integrity, while securing ongoing market access for its commodities and ensuring high standards of animal welfare that represent community expectation.

Poster author abstracts and biographies

POSTER AUTHOR

Sophie Walker, The Cairns Institute, James Cook University

The Intersection of Disaster and Domestic Violence in Far North Queensland

Abstract

International research indicates that domestic and family violence (DFV) increases after a natural disaster. However, there is limited Australian-based research on the topic and none that includes the complexity and unique context of Far North Queensland. This poster will present the launch of a 2-year funded project investigating the impacts of natural disaster on DFV in the region.

Using insights gathered through surveys and stakeholder interviews conducted with community support groups, DFV services and experiences of emergency services. The ultimate goal of this research is to work with emergency management agencies, local governments and service providers to co-design an action plan and regional strategy aimed at better supporting people experiencing DFV. As the most disaster-prone state this has the potential to increase understanding of potential issues affecting communities in Far North Queensland and build capacity and capability to support them in times of crisis.



Sophie Walker is an environmental social scientist and research officer at James Cook University's Cairns Institute. Her current work focuses on the impact of natural disasters on family and domestic violence in far North Queensland.

Sophie's previous work has been varied, for example examining gender equity in higher education and evaluating climate resilience programs for agriculture. Her PhD was on barriers to adoption of technology by smaller conservation organisations in Queensland. She is deeply committed to connecting research, policy and practice

POSTER AUTHOR

Pallav Pant, Griffith University

Co-Designing Accessible Emergency Communication: Emerging Insights from Deaf and Hard of Hearing Communities in Queensland

Abstract

This study examines accessible emergency communication for Deaf and Hard-of-Hearing (DHH) communities in Queensland through a multi-method, participatory approach. It integrates an ongoing scoping review, completed key informant interviews, and three completed co-design workshops to identify barriers and inform contextually relevant digital solutions. The workshops brought together DHH participants, first responders, and other stakeholders to shape communication strategies grounded in their experiences and priorities.

Preliminary insights highlight the importance of multimodal communication, two-way real-time information exchange, and integration with existing emergency-service systems. They also suggest that sustainable implementation depends on sustained funding, workforce training, organisational commitment to accessibility, and continued DHH community involvement in design, implementation, and evaluation. The research contributes to disability-inclusive disaster risk reduction by highlighting the potential of co-design to align digital solutions with community needs and service-delivery requirements. It emphasises embedding accessibility from the outset to support inclusive emergency communication that leaves no one behind.



Pallav Pant is a PhD candidate at Griffith University and a recipient of the Disability Scholars Research Scholarship. His research, "Advancing Accessible Emergency Communication: Co-Designing Digital Solutions for Deaf and Hard of Hearing (DHH) Communities in Queensland", explores how digital solutions can support more inclusive real-time emergency communication. He recently completed **three co-design workshops as part of his PhD**, marking an important milestone in this research.

His work spans disability-inclusive disaster risk reduction (DIDRR), accessible emergency communication, policy advocacy, and inclusive project delivery across Asia and Australia. He led the development of Nepal's first Disability-Inclusive Get Ready Guidebook, owned by the Ministry of Home Affairs, as well as the BACHAU SOS app and a DIDRR resource book.

His experience includes coordinating multi-stakeholder conferences and advising international networks. He was shortlisted for the Sasakawa Award and won the QUT Impact Stories Award. With advanced qualifications in crisis management, mass communication, and journalism, he brings an interdisciplinary approach to research and practice. He is committed to working alongside marginalised communities to strengthen inclusion through co-design, technology, policy, and collaboration.

POSTER AUTHOR
Meenal Nand, Griffith University

Evolving Inclusion: A Global Review of Disaster Risk Reduction (DRR) for Individuals with Chronic Illnesses (ICI) in Developing Countries.

Abstract

Background: Disasters disproportionately affect individuals with chronic illnesses (ICIs) in developing countries, where fragmented health systems can limit continuity of care. This review examined progress in addressing ICI health needs and participation in disaster risk reduction (DRR), focusing on primary healthcare (PHC), barriers, and facilitators.

Methods: Six databases were searched for English-language peer-reviewed studies published from 2000–2024. Seventeen studies meeting PCCO criteria were included using PRISMA guidelines and appraised with the Mixed Methods Appraisal Tool.

Results: Evidence remained largely focused on post-disaster response, with limited preparedness and mitigation. PHC was essential for continuity of care, yet gaps persisted in preparedness, integration, equity, access, and system capacity. Facilitators included social support, community outreach, innovative PHC models, partnerships, and inclusive policies.

Conclusion: Meaningful ICI inclusion remains limited. Strengthening PHC, community-centred planning, and ICI participation across all disaster management phases is essential for equitable disaster resilience and ensuring no one is left behind.

POSTER AUTHOR
Meenal Nand, Griffith University

Healthcare Workers' (HCWs) Role in Inclusive Disaster Risk Reduction (IDRR) for Individuals with Chronic Illnesses (ICIs) in Fiji Islands: A qualitative study

Abstract

Background: Fiji frequently experiences climate-induced disasters that disrupt health services, placing individuals with chronic illnesses (ICIs) at heightened risk because of their dependence on continuous care and medicines. This study explored how healthcare workers (HCWs) can strengthen ICI inclusion and participation in disaster risk reduction (DRR).

Methods: A qualitative phenomenological study was conducted from January to March 2025 with 17 HCWs from urban, peri-urban, rural, and maritime areas of Fiji's Western Division. Four focus group discussions used a semi-structured guide, with data analysed thematically in NVivo.

Results: Six themes highlighted continuity of chronic care, access barriers, community-embedded primary healthcare, collaborative planning, workforce capacity, and health literacy, language, and cultural practices as key influences on inclusive DRR.

Conclusions: HCWs emphasised that inclusive DRR requires sustained chronic care, safe access, culturally responsive communication, and strong PHC-community collaboration. A coordinated continuity-of-care pathway could strengthen ICI participation, preparedness, and resilience across all disaster phases.



Meenal Yaashna Nand is a higher education academic with the School of Dentistry and Oral Health (SDOH), Fiji National University, and a PhD candidate at Griffith University, Australia. Her professional experience ranges from local government hospitals to academia and her research interests span dentistry and oral health, primary healthcare, disaster risk reduction, health equity, chronic illness, community resilience and health-system strengthening, with a particular focus on Fiji and the wider Pacific region.

Alongside her academic role, Meenal currently works as a Research Project Manager at The University of Queensland's School of Dentistry, facilitating an NHMRC-funded national research project focused on improving equitable access to oral healthcare for culturally and linguistically diverse (CALD) communities.

Throughout her PhD candidature, Meenal has presented her research at a range of national and international conferences and academic forums, contributing Pacific perspectives to broader conversations on inclusive healthcare and disaster resilience. Her PhD research has also received recognition through research and conference awards. She is passionate about translating research into practical policy, service improvement and meaningful community impact across Fiji, Australia and the Pacific.

POSTER AUTHOR
Dr Adam Lo OAM, Metro South Health

When Everything Changes: Occupational Therapy as a Disruptive Force in Disaster Management

Abstract

Disasters disrupt more than homes, infrastructure, and livelihoods. They affect the occupations, routines, roles, relationships, and identities that give meaning to everyday life. Despite this, disaster management has traditionally focused on immediate survival, emergency response, and physical reconstruction, often overlooking the significance of participation, belonging, and engagement in meaningful occupations as essential components of recovery and wellbeing.

Occupational therapy offers a unique contribution across the disaster management cycle of prevention, preparedness, response, and recovery. Occupational therapists support individuals and communities to build resilience, identify occupational vulnerabilities, develop person-centred emergency preparedness strategies, maintain participation during displacement, and re-establish meaningful occupations following disaster events. Their role also extends to promoting accessibility, inclusion, advocacy, and occupational justice throughout recovery processes.

Drawing on the Occupational Therapy and Disaster Management Position Statement (2024), occupational therapists are well placed to bridge the gap between survival and participation. Using occupational approaches such as the Person-Environment-Occupation-Performance (PEOP) model, interventions support people to rebuild routines, reconnect with meaningful occupations, strengthen community participation, and adapt to post-disaster challenges. The multidisciplinary MSAMHS Disaster Recovery Flood Team (DRFT), within which the author practises, demonstrates this approach through person-centred mental health care, family support, community engagement, and interagency collaboration. Recognising occupation as a central component of disaster recovery positions occupational therapy as an important contributor across the disaster management cycle.



Dr Adam Lo OAM is an Occupational Therapist, Senior Mental Health Clinician, educator, and community advocate with over 25 years of experience in mental health and psychosocial recovery. He currently works within the Metro South Health Disaster Recovery Flood Team, supporting communities affected by disasters. Adam has held national and international leadership positions with Occupational Therapy Australia and the World Federation of Occupational Therapists. He is the founder of the Positive Mindset Creative Arts Festival, which promotes mental wellbeing and social inclusion through the arts. His professional interests include disaster recovery, resilience, occupational justice, community participation, and creative approaches to mental health. Adam is a reservist officer in the Royal Australian Air Force and is also a community volunteer across various arts, youth, health and veterans' organisations.

POSTER AUTHOR
Dr Turgut Acikara, Queensland Police Service

Exploring the Integration of Artificial Technologies (AI) to Enhance Decision-Making Predictive Capabilities, and Operational Efficiency in Disaster Response and Recovery

Abstract

Artificial intelligence (AI) is increasingly being explored as a capability to enhance disaster and emergency management operations and support more effective response and recovery outcomes. However, implementation raises important considerations regarding system reliability, governance, and human oversight. This research, undertaken through the Queensland Disaster Management Arrangements (QDMA) Research Capability Project in collaboration with the Queensland Police Service (QPS), investigates the potential benefits of AI technologies for QPS personnel and frontline emergency responders across Queensland involved in disaster response and recovery. Employing a systematic literature review informed by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework, together with an examination of Australian and international use cases, the study focuses on four operational themes: prediction and forecasting, real-time situational awareness, decision support, and consequence management. The research seeks to inform responsible AI adoption within Queensland's disaster management arrangements and guide future capability development towards more effective, evidence-based disaster response and recovery operations.



Dr. Turgut Acikara is an AI Integration Researcher working across the Queensland Police Service (QPS) and the Office of the Inspector-General of Emergency Management (IGEM) through the Queensland Disaster Management Arrangements (QDMA) Research Capability Project. His work focuses on examining how current and emerging artificial intelligence (AI) technologies can support disaster and emergency management through improved decision support, situational awareness, and operational effectiveness.

He completed a PhD at Queensland University of Technology (QUT), where he developed and evaluated AI-supported decision systems using crowdsourced data from the 2022 South East Queensland floods. His doctoral research applied Natural Language Processing (NLP), machine-learning, and AI-enabled decision-support techniques to extract decision-relevant information for near-real-time situational awareness and infrastructure resilience assessment. He also investigated model uncertainty, error, and overconfidence, examining their implications for operational decision-making and the need for appropriate human oversight.

Turgut's broader experience includes research and analytical projects delivered for public-sector organisations, with interests spanning AI governance, risk-based AI evaluation, human-AI collaboration, and the responsible adoption of AI technologies in disaster and emergency management settings.

POSTER AUTHOR
Isabella Crebert, Queensland Police Service

Exploring the Technology Landscape Assessment in Disaster Response and Recovery

Abstract

The use of various technologies for managing and responding to disaster scenarios has proven to be beneficial for multiple global disaster response initiatives. This project is being completed with the Queensland Disaster Management Arrangements Research Capability Project, and the Queensland Police Service (QPS). The aim of this project is to identify, compare, and assess various technology types that can assist with the prevention, preparation, and response to the various natural disaster types endured throughout Queensland. By reviewing relevant literature and case studies, each of the identified technologies will be assessed against a framework to determine their suitability. The framework consists of; cost, accessibility, and learning requirements in terms of operation of the technology and interpretation of the subsequent data. The intended outcome of this research is to produce recommendations for technologies that can be adopted by QPS to maximise responses, workflow, and aid during disasters.



Isabella Crebert is an intern with IGEM and QPS on the project titled *Exploring the Technology Landscape Assessment in Disaster Response and Recovery*. In addition to holding a Bachelor of Criminology with Distinction, Isabella recently submitted her PhD in Forensic Anthropology which investigated the use of 3D imaging technologies to enhance processes for documenting and assessing human remains in humanitarian disaster scenarios. Isabella has also been appointed as a lecturer of criminology at University of Technology Sydney commencing in 2027.

POSTER AUTHOR
Associate Professor Shannon Rutherford, Griffith University

Advancing Heat Action in Australia: Where to from Here?

Abstract

Extreme heat and heatwaves present a growing public health challenge in Australia, requiring stronger connections between research, policy and practice. The HEAL-funded *Heat Health Action in Australia* project used diverse approaches to understand the Australian heat-health research and policy landscape and identify priorities for future action. Activities included a mapping review of Australian heat-health research, systems visualisation workshop to explore the interconnected factors shaping heat-health risks and responses, including compounding and cascading impacts, and a national policy-research workshop involving government, research and NGO participants across emergency management, health, climate adaptation and built environment sectors. The policy-research workshop identified the need for improved data access and more localised heat-health data, stronger cross-sectoral leadership and governance, upstream action on housing and the built environment, expanded health system preparedness, clearer, action-oriented public communication and improved evaluation and community interventions.



Associate Professor Shannon Rutherford is a public health researcher at Griffith University specialising in climate change, disasters and health. Her research focuses on understanding and responding to climate related health risks, with particular expertise in heat and health adaptation. She leads transdisciplinary research connecting evidence, policy and practice to strengthen community resilience and currently co-leads heat-health research and translation initiatives, including the Queensland Heat-Health Community of Practice and the DRF funded Hi-Mac project.

POSTER AUTHOR
Elena Skoko, Queensland University of Technology

Maternal Populations in Disaster Governance: Australia vs. Indonesia

Abstract

Recognising the primary needs of mothers and infants is essential for effective and equitable disaster risk reduction. Despite elevated risks during disasters, these populations can become invisible in disaster governance. We compared how Queensland and Indonesia recognise maternal populations during disasters and how their disaster governance models influence service delivery and equity. This research was framed by the *Sendai Framework*, adopting an international all-hazard approach. Under the *Sendai Framework*, disaster risk reduction is a state responsibility, and Australia and Indonesia cooperate to strengthen disaster preparedness. Through fieldwork in Queensland and Indonesia we used grounded theory methods, a maternal standpoint and pragmatic reasoning to identify key analytical issues to inform policy and practice. Our findings suggest that the lack of explicit prioritisation of maternal populations in Queensland can undermine accountability, exacerbate gender inequities, and increase disaster risks for mothers and babies. In Indonesia, specific acknowledgment of maternal populations and a whole-of-society approach have limited success without accountable decision-making and resource allocation. Sharing lessons would benefit both countries.



Elena Skoko is a PhD researcher in the School of Public Health and Social Work at the Queensland University of Technology (QUT). Her doctoral research focuses on maternity care in disasters and bridges the gap between health and disaster research. She conducted fieldwork in Queensland and Indonesia, integrating pragmatic qualitative inquiry with risk and policy analysis and cultural immersion. Her international, all-hazards approach has generated grounded, context-sensitive insights that can be translated across sectors. Her work aims to inform data-driven policies that enhance disaster preparedness and response for communities and groups at heightened risk. Her research is funded through postgraduate scholarships from QUT and Natural Hazards Research Australia.

POSTER AUTHOR
Masha Kondrasheva, University of Newcastle

Rethinking prevention in disaster waste management

Abstract

Disaster waste management after natural hazard events is dominated by response and recovery, while prevention remains its least developed stage. Yet many capabilities that prevention requires, such as separating hazardous items or redistributing and repairing goods, are already practised every day in community waste reuse and recycling organisations. Drawing on social capital theory and research on informal household preparedness, this poster argues that everyday circular economy practice is an unrecognised form of disaster preparedness. A policy review for an Australian coastal council shows the gap: the council values volunteer networks as adaptive capacity and funds local organisations to run repair cafés yet leaves disaster waste to a forthcoming regional plan and community reuse networks out of preparedness. The poster outlines planned doctoral research on how this existing capacity could be recognised and safely mobilised.



Masha Kondrasheva works at the intersection of climate, disasters and the circular economy. She holds a Master of Disaster Resilience and Sustainable Development from the University of Newcastle, where her capstone project analysed local and state disaster waste policy, and she is now a casual academic at the University. Masha is Waste & Reuse Programs Manager at The Full Circle Collective, a Newcastle circular economy charity, where she leads Heavy Matters - a community-led approach to rehoming bulky kerbside waste, which was a finalist in the 2025 Circular Economy Grand Challenge and received a Rising Star Award. She is developing doctoral research on community reuse as a form of disaster preparedness.

POSTER AUTHOR
Dr Dimity Miller, Queensland University of Technology

Title: From URM Building Mapping to Emergency Response Intelligence: A Scenario-Based Framework for Earthquake Preparedness in Australia

Abstract

Unreinforced masonry (URM) buildings pose significant earthquake-related life safety risks to Australian communities. Their concentration in older urban centres can create areas of heightened vulnerability, complicating emergency response and post-earthquake recovery. Emergency management stakeholders have identified the need for a nationally consistent database of URM building locations and vulnerability classifications to support preparedness and planning. However, traditional field surveys are costly and impractical at national scale.

This project develops an AI-enabled geospatial framework that integrates building footprints, street-level imagery and computer vision to automatically identify, classify and map URM buildings. Buildings are categorised into vulnerability-related groups based on structural and visual characteristics. Key challenges include collecting representative training data across diverse Australian building styles, training AI models with data imbalance and managing visual occlusions.

The resulting database aims to support evidence-based emergency planning, resource allocation and assessment of potential earthquake impacts on communities.



Dr Dimity Miller is a Chief Investigator with the QUT Centre for Robotics, and a Senior Lecturer with the QUT School of Electrical Engineering and Robotics. Her research expertise is in computer vision and AI, where she creates new AI algorithms that withstand the challenges of real-world deployment to be more reliable and trustworthy. Dimity is passionate about translating her research into high-impact applications through collaboration with industry and government, including the use of AI to support the management of Australia's critical infrastructure, such as bridges, buildings or marine assets.

POSTER AUTHOR

Ifthaz Hameed Savul Hameed, Queensland University of Technology

Experimental Study of Outdoor Fire Exposure on a Building

Abstract

Outdoor fires pose an increasing threat to residential buildings worldwide. These fires may originate from bushfires at the bushland-urban interface (BUI), vehicles, sheds, vegetation, other combustible materials, or urban fires spreading to adjacent buildings. Understanding their effects on residential buildings requires systematic experimental investigation. Although previous studies have examined individual building elements exposed to fire, they provide limited insight into the behaviour of entire residential buildings under outdoor fire conditions. Furthermore, full-scale experimental data on interactions between outdoor fires and residential buildings remain limited. This study investigates the performance of a residential building as a whole structure under outdoor fire exposure. Two full-scale outdoor fire experiments were conducted using an ISO 9705 sized compartment representing a residential building. The findings are expected to contribute to improving residential fire resilience, informing building design and protection strategies, and providing experimental evidence to support future fire safety standards and numerical modelling approaches.



Ifthaz Hameed is a Mechanical and Manufacturing Engineer who graduated from the University of Ruhuna, Sri Lanka. Before commencing his PhD, he worked as a Lecturer, Assistant Lecturer, and Demonstrator at the University of Jaffna, Sri Lanka, for nearly four years. He is currently a PhD candidate at the Wind and Fire Lab, Queensland University of Technology (QUT). His research focuses on the experimental and numerical investigation of outdoor fire exposure on buildings.

POSTER AUTHOR
Most Nilufa Khatun, Griffith University

Rethinking Resilience: The Role of Women's Earning Participation in Household Food Security Under Climate Stress

Abstract

Resilience in climate-vulnerable communities depends not only on physical adaptation measures but also on social and economic capacities. This study examines the relationship between women's earning participation and household food security in rural Bangladesh, and whether this relationship varies across areas with different levels of climatic vulnerability. Using three rounds of panel data from the Bangladesh Integrated Household Survey (BIHS), the study measures household food security with the Household Dietary Diversity Score (HDDS) and Food Consumption Score (FCS). Household fixed-effects results show that women's earning participation is positively associated with both food security indicators, with stronger associations in drought-prone regions. The findings suggest that women's economic engagement serves as an important household-level resource for safeguarding food security under climatic stress. The findings also highlight the importance of regionally targeted, gender-responsive development strategies that expand women's access to income-generating opportunities, thereby improving food security and building household resilience in climate-vulnerable settings.



Nilufa is an international PhD candidate in the Department of Accounting, Finance and Economics at Griffith University. She has been a faculty member of Gazipur Agricultural University in Bangladesh since 2015. She is an agricultural economist and has a strong record of research publications in high-impact journals. Her research domains are agricultural and environmental economics, climate finance, adaptation, food security and gender issues.

POSTER AUTHOR
Madhushan Vijesundaram, Queensland University of Technology

Experimental Studies of Solar Panel-Installed Steel-Clad Roofs under Bushfire Conditions

Abstract

Bushfires pose significant risks to buildings in Australia, particularly through radiant heat, flame contact, and firebrand attack. The increasing installation of rooftop solar panel systems introduces additional fire hazards due to their combustible components. This study investigates the performance of steel-clad roofs with rooftop solar panel installations under bushfire conditions through experimental testing. Roof assemblies with and without solar panels were subjected to radiant heat, direct flame contact, and glowing firebrand exposure. Results demonstrated that solar panels significantly influenced roof temperatures and fire behaviour. Under BAL-29 radiant heat exposure, the maximum roof temperature increased from 388°C without solar panels to 589°C with solar panels. Furthermore, glowing firebrand exposure caused solar panel ignition, increasing roof temperatures from 189.1°C to 643.7°C. These findings highlight the increased vulnerability of solar panel installed steel-clad roofs during bushfires and provide a basis for developing improved installation guidelines and bushfire-resilient roof designs.



Madhushan Vijesundaram is a PhD researcher in the School of Civil and Environmental Engineering at Queensland University of Technology (QUT), Australia. His research focuses on the bushfire performance of steel-clad roof systems with rooftop solar panel installations. Through experimental fire testing and numerical modelling, he investigates the effects of radiant heat, flame contact, and firebrand attack on roof structures. His research aims to identify potential vulnerabilities and develop practical design recommendations to improve the bushfire resilience and fire safety of buildings in Australia.

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