

UR22 Wellington Satellite Session Overviews

Being a good ancestor - an indigenous perspective on risk, resilience and adaptation

Daniel Hikuroa (Ngāti Maniapoto, Waikato-Tainui/ Ngaati Whanaunga) (The University of Auckland)

Being a good ancestor is reflective of a Māori way of understanding risk and resilience. Underpinned by a worldview that sees people as interconnected with the land, this plenary will discuss some indigenous foundational concepts and how they manifest as indigenous perspectives of risk, resilience and adaptation.

Learning from Māori-led risk, resilience and adaptation projects

Shaun Awatere (Manaaki Whenua Landcare Research), Emily Campbell (Hutt City Council in Te Whanganui-a-Tara), Annie Huang (University of Canterbury), Tui Warmenhoven t

Like other Indigenous Peoples, Māori maintain a critical concern for Papatūānuku/Mother Earth and recognise the fragility of our ecologies and the disruption that humans can impose. Māori have had to adapt to these rapid transformations in their environment, such as heightened erosion and flooding risks that continue to degrade the mauri (life force) of their cultural resources (e.g., waterways, indigenous forests, housing). As our world comes to terms with the realities of climate change, and the extreme impacts that are enacted on our environments and livelihoods, questions concerning how these impacts affect hapū/iwi/Māori specifically and what processes/solutions should be applied to deliver positive mitigation and adaptation outcomes are paramount.

The presenters of this session make up the Vision Mātauranga research stream of the *Whakahura: Extreme Events and the Emergence of Climate Change* research programme which combines climate science, meteorology, economics, and mātauranga Māori. They will discuss two case study projects based in Te Tairāwhiti and Te Waipounamu that have explored the localised challenges that exist for iwi/hapū/Māori in these takiwā (areas), and touch on the development of policies and protocols that are grounded in te Ao Māori to support co-governance and decision-making bodies (both Māori and non-Māori) with regards to Terrestrial, Freshwater and Marine Ecosystem management and protection.

How to use climate change attribution to measure its economic impact

Ilan Noy (Te Herenga Waka – Victoria University of Wellington)

Climate change is already increasing the severity of some extreme weather events, such as with rainfall during tropical or extra-tropical cyclones. Extreme Weather Event Attribution, a branch of climate science, quantifies the extent to which anthropogenic climate change has modified the frequencies and intensities of specific extreme weather events that have already occurred. But little previous research has combined this information with socio-economic data to provide useful insights about the economic costs of extreme weather events that were caused by

climate change. We present two examples of such an approach. In the first, we use attribution science about Hurricane Harvey (in Texas, 2017) with hydrological flood models and detailed socio-economic data. We thus describe the micro-scale distributional implications of current climate change-induced impacts and assistance in the Harvey case. In the second example, using a meta-analysis of attribution studies, we aggregate the global current costs of climate change and show these are typically underestimated. We estimate that climate change-attributed extreme weather events have cost the world US\$2.9 trillion from 2000 to 2019. This is significantly higher than estimates from leading Integrated Assessment Models (IAM) such as DICE and FUND.

Community-based emergency welfare with a psychosocial support lens

Jackie Bubb (New Zealand Red Cross)

This session will explore the work of New Zealand Red Cross in supporting communities before, during and after an emergency. Red Cross works in partnership with a broad range of agencies as part of a coordinated approach to emergency management in Aotearoa. Red Cross has a national network of 19 volunteer teams with over 300 trained volunteers. In the past 12 months these volunteers have responded to 11 emergencies and recorded nearly 100,000 hours of work. This session will look at what they do and how they apply a psychosocial support lens across this broad spectrum of work. The presenter will draw upon real life examples of deployments and share some of the lessons and insights gained.

Dynamic pathways planning for climate change

Nicki Williams (Mitchell Daysh)

The effects and impacts of climate change on communities and land use planning are rapidly changing. Local governments are required to consider the effects of the changing climate on communities and support communities and business to improve their resilience and sustainability. One of the keys to improving community resilience and changing land uses is enabling communities and stakeholders to make informed decisions that may change over time. Understanding how the climate will change, the risks this poses and how communities will adapt are important steps to build resilience. Dynamic planning pathways enables communities to make decisions about their future and provide for our changing climate.

This session will focus on some practical examples on what is happening in local government to build community resilience through enabling communities to make informed decisions that may change over time.

Perspectives on National Adaptation Plans (NZ and Pacific)

Patrina Dumaru (GNS Science), Ms. Faatupu Simeti (Department of Climate Change and Disaster, Government of Tuvalu), Mr. Kirata Tekiera Mwemwenikeaki (National Climate Change Coordinator, Office of Te Beretitenti (President), Government of Kiribati), Mr. Viliami Takau (JNAP Secretariat, Department of Climate Change, Government of Tonga), Bruce Glavovic (Massey University)

The objective of this session is to share perspectives, experiences and lessons on NAP process in Pacific SIDS and New Zealand. A Pacific regional perspective on NAPs will be introduced followed by a more in-depth 'talanoa' of NAP journeys in Tuvalu, Kiribati and Tonga and looking at community engagement and cross-sector coordination. The session will conclude with an overview of what Pacific SIDS and Aotearoa New Zealand can learn from each other to advance NAP processes.

Innovative financial solutions in Southeast Asia: Addressing the financial impacts from climate shocks and disasters

Sumati Rajput (World Bank)

Greg Fowler (World Bank), Soo Hoon (SEADRIF), Shannen Chua (Bureau of the Treasury)

The session will present a carousel of technical talks focused on innovations in disaster risk finance in the southeast Asia. Southeast Asia is prone to a wide range of natural disasters and different solutions at different levels are

needed to offer governments to be financially prepared against these events that impose large financial, fiscal, and socioeconomic costs on governments and their budgets. This includes a 101 in disaster risk finance, and feature three examples of different solutions currently in place in the region: i) cat bond in the Philippines that offers protection from typhoons, winds, and precipitation; ii) the first parametric sovereign flood product offered to Laos; and iii) a fast-growing indemnity insurance program protecting public assets in Indonesia. The session will focus on the different risk information needs countries have to make policy level decisions on what instruments to put in place, and also the kind of data that is needed to design and implement financial solutions. The session will offer opportunity for moderated Q&A on the different country and instrument experiences shared during the session.

Smarter planning for natural hazard risk reduction

Wendy Saunders (Toka Tū Ake EQC)

Internationally land use planning may be the most proactive and effective way to reduce the level of natural hazard risk. But it is also a challenging policy area that must balance a range of (sometimes competing priorities), including managing natural hazard risk. Despite the increasing knowledge and modelling decision makers have access to, development is still occurring in locations that are at high risk of natural hazards and climate change impacts. To contribute to improving land use decision making, Toka Tū Ake EQC is taking a national approach to reduce our current and future risks by providing leadership; promoting and supporting risk-based planning solutions; and building capability and capacity in the planning profession. The 'Smarter land use action plan for risk reduction' outlines actions to achieve our goal of smarter land use that reduces our exposure to natural hazard risks. The action plan aims to encourage better land use planning and decision-making for existing and future developments, across central, regional and local government, and the private sector. Many of these actions may be translatable into other international contexts.

This session will outline the planning challenges that are increasing our existing and future risks, and the actions Toka Tū Ake EQC are progressing to improve planning outcomes.

Governing Disasters: Lessons from Canterbury to COVID

John Hopkins (University of Canterbury)

Disasters, as everyone in the DRR field knows, are the consequences not of natural hazards but of the human response to such hazards. Disasters are thus human not natural events. It should, therefore, come as a no surprise that law and governance, as social phenomena, are crucial to effective hazard resilience. Perhaps less understood, however, is the extent to which poor legal frameworks and weak governance models can exacerbate the impact of hazards. In most cases such problems of governance precede the disaster event itself, with the ensuing crisis merely exposing existing legal and constitutional fault lines. In extreme cases, such legal weakness can even cause the disaster itself, independent of the natural hazard that may have underpinned the event.

This paper, using examples from Aotearoa New Zealand, the Pacific region and around the globe, explores some key issues that have emerged from the study of disaster governance over the past decade. It further considers what lessons can be learnt from recent disaster events and considers how improved governance models and legal frameworks can build resilience and provide for more effective response and recovery.

End to end disaster risk management for critical infrastructure: Vietnam - New Zealand Dam Safety project

MFAT, Nicolas Pondard (GNS), Nguyen Canh Thai (Thuyloi University), Peter Amos (Damwatch)

Viet Nam has one of the largest networks of dams and hydraulic structures in the world, with over 7,000 dams of different sizes and types. Many dams have not been designed to withstand more than moderate floods and are in deteriorating condition. The magnitude and frequency of storm events and associated landslides and flooding is expected to significantly increase over the next 50 years. The Government of Viet Nam recognises that rapid development of dams for hydropower, irrigation and water supply has not always taken account of increased risk to

public safety and economic damage if problems occur. The Government also recognises that climate change will impact future water security and has placed a high priority on improving dam safety to mitigate these effects.

The Viet Nam-New Zealand Dam Safety Project (VNZDSP) was launched in 2012 as a collaboration between the Governments of Viet Nam and New Zealand with the aim of providing the Government of Viet Nam with a methodology to deliver evidence-based decision making for dam safety management, upgrading dams and improving community-based disaster risk management (CBDRM). The Project is being delivered by a partnership of Thuy Loi University of Hanoi and Damwatch Engineering and GNS Science from New Zealand. Funding for the project is made available under the New Zealand Government's Bi-lateral Aid Programme. The Vietnamese Ministry of Agriculture and Rural Development (MARD) is the sponsoring Government agency for this project, with the Ministry of Industry and Trade (MOIT) a key stakeholder for hydro-electric dams.

Migrants and refugees in disaster risk reduction

Smrithi Talwar (GNS Science), Nadia Charania (Migrant and Refugee Health Research Centre at AUT), Loïc Le De (Auckland University of Technology), Jay Marlowe (The University of Auckland)

Migration to Aotearoa New Zealand has steadily increased, with migrants and refugees now representing almost a quarter of the total population. These recent settlers can be disproportionately impacted by hazards due to challenges related to language, culture, limited knowledge of local hazards and a lack of familiarity with how to navigate systems in the country. On the other hand, migrants and refugees are resourceful and display various coping mechanisms to overcome the effects of a disaster. It is critically important for policy makers to consider a culturally relevant perspective in their planning, and for decision makers at all levels to include migrants and refugees in disaster risk reduction efforts in a way that leverages their strengths in the resilience building process. This session will explore both culturally-influenced risk perceptions as well as resilience to natural hazards, from the perspective of migrants and refugees in Aotearoa New Zealand.

Tools for disaster risk management

Nick Horspool (GNS Science / RiskScape), Garry McDonald (MERResearch / MERIT)

One of the four key priorities in the Sendai Framework is to understand disaster risk. Risk tools, that model the impact of natural hazards, can be used to quantify risk from disaster events and inform risk management strategies.

This plenary will provide an overview of two risk tools that have been developed in Aotearoa-New Zealand; RiskScape and MERIT and highlight through case-study examples how they have been used to inform disaster risk management. The plenary discussion will then provide an opportunity to discuss the suitability of such models to inform risk and resilience decision making.

World Bank in the Pacific: Strengthening Disaster and Climate Resilience

Jolanta Kryspin-Watson (World Bank), Mr. Henry Vira (Director General, Ministry of Lands and Natural Resources, Republic of Vanuatu), Ms. Kilisitina Tuamei'api (Chief Executive Officer, Ministry of Finance, Kingdom of Tonga)

Pacific Island Countries are on the front line of climate change and natural hazards. The challenge of responding to these risks stems not only from the PIC's extreme remoteness, small size, geographic dispersion, and environmental fragility but also from limited natural resources, high costs of production, increasing rates of urbanization and poor urban and land use planning and development. The World Bank provides extensive support and investments in the Pacific that aim to boost resilience. Over US\$450 million has been mobilized for climate change adaptation and on strengthening institutions to improve disaster risk management in the region. Projects run the gamut from urban resilience to coastal protection, and from strengthening public facilities to enhancing impact-based early warning systems. During this session, the World Bank will share its future strategy of support for the Pacific and two of its

client representatives will share their perspectives on how these strategic priorities have helped to shape national-level development goals for climate and disaster resilience.

How our world leading natural hazards insurance scheme continues to grow and innovate

Scott McHardy and Sarah-Jayne McCurrach (Toka Tū Ake EQC)

New Zealand's natural hazard insurance scheme is almost 80 years old. Over this time, we've used the past to look forward and have developed and evolved our policies and approaches to ensure New Zealanders are supported after a natural hazard event. In July 2024, the next phase in our evolution will see the EQC Act become the Natural Hazards Insurance Act and Toka Tu Ake EQC, become Toka Tu Ake, Natural Hazards Commission. This change will not only ensure the future durability and flexibility of our legislation but allow us to continue to grow and innovate how we serve the people of Aotearoa New Zealand, to build community resilience and increase the financial resilience of the scheme. Join us to learn and explore the evolution of the scheme, how we are striding into the future to enhance financial protection against natural hazard risks, and how our strategic objectives and innovation are supporting the reduction of risk across Aotearoa.

Impact based forecasting for early action

Sally Potter (GNS)

Impact-based warnings are becoming increasingly popular worldwide, particularly for hydrometeorological hazards. This session will provide the opportunity to learn more about what they are, how effective they are in influencing responses, what some of the benefits and challenges are of using impact-based warnings, and how agencies can go about implementing them. There will also be the opportunity to ask questions and share your own experiences and thoughts on impact-based warnings.

Public-private partnerships (PPP) for risk analytics and disaster risk financing in New Zealand and Asia Pacific

Karl Jones and Apoorv Dabral (Guy Carpenter), Tim Grafton (Insurance Council of New Zealand)

The first part of the session by Guy Carpenter will provide an overview on how the modelling and analytics can be applied to various components of public private partnership with specific focus on risk mitigation and financing.

The elements of Public Private Partnership for disaster risk management include strategic and policy advisory, modelling, pre-disaster risk mitigation, risk transfer and post disaster risk recovery. Case studies and possible example will be shown to how risk analytics has or can be used in these areas.

The second part of the session by ICNZ will focus on New Zealand, and disaster risk financing under the EQC - Private Insurer model. This case study shows how a PPP disaster risk financing model can support high uptake of insurance and reduce protection gaps for specified hazards.

Climate change adaptation and associated financial disclosures

Belinda Storey (Climate Sigma), Amelia Sharman (XRB), Ilan Noy (Te Herenga Waka – Victoria University of Wellington)

This panel will discuss the opportunities and challenges presented by financial disclosures to better adapt to climate change, showcasing how disclosures are to be addressed in New-Zealand. The New-Zealand Government has passed legislation making climate-related disclosures mandatory for some organisations. The requirement will apply to large publicly listed companies, insurers, banks, non-bank deposit takers and investment managers.

The majority of large New Zealand financial organisations provide limited to no information on what climate change might mean for them or are reporting in inconsistent ways. This lack of information causes what the Productivity Commission termed in their Low Emissions Economy report “an ongoing and systemic overvaluation of emissions-intensive activities”.

The goal of mandatory climate-related disclosures is to:

- a. ensure that the effects of climate change are routinely considered in business, investment, lending and insurance underwriting decisions.
- b. help climate reporting entities better demonstrate responsibility and foresight in their consideration of climate issues
- c. lead to more efficient allocation of capital, and help smooth the transition to a more sustainable, low emissions economy.

Mandatory climate-related disclosures will help New Zealand meet its international obligations and achieve its target of net zero carbon by 2050. By improving transparency and revealing climate-related information within financial markets, our financial system will become more resilient and climate change risks outlined in the National Climate Change Risk Assessment will be addressed.

Climate change adaptation and risk assessment in the Pacific

Patrick Pringle, Richard Reinen-Hamill and Ben Sims (Tonkin + Taylor), and Filomena Nelson (Secretariat of the Pacific Regional Environment Programme)

With Pacific Island countries among the world’s most at risk to climate change, the completion of climate risk assessments and national adaptation plans (NAPs) are recognised as being crucial for identifying, managing and monitoring climate risks. Our presentation will give an overview of the recently published Pacific NAP Guidelines, which were developed by SPREP and Tonkin + Taylor, and the current status of risk assessments and NAPs across the region. To implement NAPs and reduce climate and disaster risk, coordinated action needs to take place in communities and at the sectoral level. We will provide case studies, based on our recent work, on how coastal nature-based solutions, disaster waste management, and health adaptation planning are critical for strengthening adaptation outcomes.

Reflections on Recovery: A tale about “the tail”

Suzy Paisley (NEMA)

In disaster research and practice we often refer to ‘the long tail’ of recovery as a means of differentiating the nature of the phase following an emergency, from that of initial response. In this session we will reflect on examples of extreme events over the past 18 months with less focus on the hazard events and more on differences across recovery experiences within New Zealand. Drivers of vulnerability are highlighted and demonstrate why, despite being a contentious term, they are critical considerations for risk reduction. Key questions gleaned from the experiences of the past 18 months will be presented to the audience.

Future needs for disaster risk science

Gill Jolly (GNS Science), Sarah-Jayne McCurrach (Toka Tū Ake EQC), David Johnston (Massey University), Liam Wotherspoon (The University of Auckland)

In the Sendai Framework, it is noted that Disaster Risk Reduction requires a multi-hazard approach guided by science-based information to support decision-making. **But what are the priorities for disaster risk science over the next 10 years?** In this session we will hear from science providers, science funders and decision-makers about what they consider to be the key gaps in our knowledge that would support the greatest improvements to DRR. The panel will discuss how we might prioritise the work that will make the most difference in a range of contexts.