

Kaikoura Earthquake Social Science Research Workshop Report

May 2017

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Acknowledgements

This project was (partially) supported by QuakeCoRE, a New Zealand Tertiary Education Commission-funded Centre. This is QuakeCoRE publication number 0177. **The workshop was organised by Erica Seville, Tracy Hatton, and Bob Kipp from QuakeCoRE in collaboration with Julia Becker, Social Sciences Theme Leader for the Natural Hazards Research Platform, and Tom Wilson, Rural leader for the National Science Challenge.**

Introduction

Following any disaster event there is a desire by the social science research community to both inform recovery efforts and learn from the event. However, social science researchers may also be conscious of the need to keep their distance from communities and governance bodies who are under immense pressure to deal with immediate recovery needs. There is also a focusing effect of disaster, where there may be a greater likelihood of collaboration between scientists and policy makers, but also a chance that research may be duplicative due to escalating research effort (Beaven, Wilson, Johnston, Johnston, & Smith, 2016). When New Zealand was impacted by the 2016 Kaikoura earthquake, a group of New Zealand-based researchers decided to gather social scientists and practitioners for a workshop to ascertain both the immediate and ongoing research needs and identify applicable lessons learned from past events. The Kaikoura Earthquake Social Science Research Workshop was held on the 24th of February 2017 in Wellington (NZ) and provided a setting to explore and inspire collaborative and coordinated post-disaster research.

This report serves two purposes. First, we summarise the workshop process and lessons learned about research collaboration, coordination, and impact following major disruptive events. Second, we present the research and research coordination priorities for the Kaikoura earthquake and tsunami, that were identified during the workshop.

The Kaikoura Earthquake

The Kaikoura earthquake is the name given to a M7.8 earthquake that occurred on November 14, 2016. An initial rupture in Culverden triggered a 'domino effect' of fault ruptures stretching 150km north east (Balfour, 2016). As illustrated by Figure 1 the effects of this event were felt across a wide area of the upper South and lower North Island of New Zealand. The event became known as the 'Kaikoura' earthquake due to the severe damage experienced by the small tourist town of that name. The immediate impacts included road and rail closures throughout North Canterbury due to landslips and uplift which cut-off road and rail into Kaikoura. These closures stranded several hundred tourists and locals who were eventually evacuated by sea and air (Young, 2016). Two people in North Canterbury died and hundreds were injured, with extensive damage to many residential and commercial buildings¹.

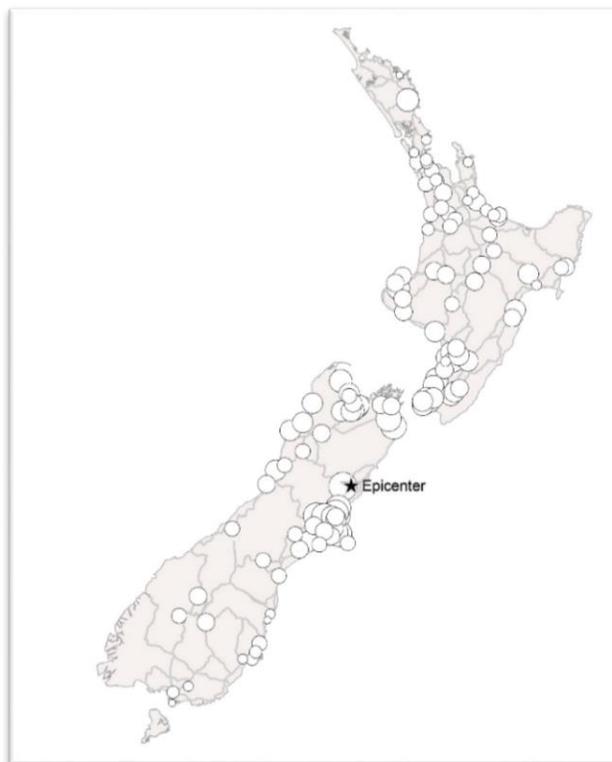


Figure 1 Shaking intensity reported by the public using GeoNet 'Felt' Reports following the Kaikoura earthquake (GeoNet, 2016)

¹ For an in-depth report on the impacts of the event, see www.eqclearinghouse.org/2016-11-13-kaikoura/2017/03/30/quakecore-geer-eeri-report

An estimated 4.1m tsunami wave was generated in Little Pigeon Bay on Banks Peninsula immediately south of Christchurch, destroying an unoccupied holiday home (Little, 2016). Although the damage caused by the tsunami was relatively contained, the inconsistent issuance of evacuation orders by local Civil Defence Emergency Management offices caused confusion among the public (Perry, 2016). Small communities across rural North Canterbury, most notably in Waiau and Cheviot, experienced damage to community and residential structures and infrastructure disruptions. In the North Island, structures in the Wellington city centre and Lower Hutt commercial centre were condemned and eventually demolished (Cook, 2016). Direct costs from the event were estimated to be NZ\$2-3 billion (The Treasury, 2016).

Following the 2010 and 2011 Canterbury earthquakes, the research community in New Zealand became familiar with the importance of triaging science priorities. The geotechnical research community was a notable 'first responder' following the Kaikoura events in 2016. Within two days of the Kaikoura earthquake a group of collaborators² had created a Google Drive to collate and share data, reconnaissance reports, and information sheets as they emerged. At the same time researchers and practitioners involved in this event had begun contributing to a geospatial web portal being hosted by the Earthquake Commission (EQC) and Tonkin & Taylor. Additionally, they had established the Kaikoura Earthquake Virtual Clearinghouse website for publishing information relevant to the public and international researchers (EERI, 2016). This effort met many of the immediate information needs of decision makers and practitioners attempting to understand the dynamic geophysical environment and its impact on the response and recovery plans in the area. It also allowed scientists to collect large amounts of perishable data that will inform research going forward.

Lessons from the Canterbury earthquakes also informed the decision among researchers within the four major funding structures for hazards research in New Zealand (i.e., GNS science, the New Zealand Centre of Research Excellence for Earthquake Resilience (QuakeCoRE), the Resilience to Nature's Challenge National Science Challenge, and the Natural Hazards Research Platform) to proactively attempt to coordinate research in the natural and social sciences. The focus of these early coordination efforts was to minimize the number of transactions with researchers and requests for information from affected communities and responding agencies, to identify perishable data collection needs, and to reduce research duplication.

² The collaborators included researchers and practitioners from GNS Science (a New Zealand Crown Research Institute), New Zealand universities working with QuakeCoRE, and the New Zealand Society for Earthquake Engineering (NZSEE) with support from the Earthquake Commission (EQC).

The Workshop Process

Organising Body

Although New Zealand has no single entity that organises natural hazards research, the Kaikoura Earthquake Social Science Workshop was enabled by the highly-networked researcher coordination within the four main funding structures. Funding for organisation, the venue, travel support and some logistical costs was provided by QuakeCoRE³. In-kind funding for organisers' time was provided by the Natural Hazards Research Platform⁴ and Resilience to Nature's Challenge⁵.

Workshop Aims

The workshop was designed to elicit and encourage collaborative social science research priorities related to the Kaikoura earthquakes. It also served as a platform to understand the information needs of practice and policy-oriented stakeholders and affected community members and coordinate the research interests of the science community. Ultimately, the workshop was a forum to begin building a collaborative Kaikoura Earthquake research community.

Recruitment of Attendees

Invitations to the workshop were sent to active New Zealand social science researchers with a known interest in disaster recovery. These individuals were then encouraged to forward widely to their networks. The event was also advertised on both the QuakeCoRE and Resilient Organisations websites and newsletters. In total, 40 researchers attended.

³ <http://www.quakecore.nz/>

⁴ <https://www.naturalhazards.org.nz/>

⁵ <https://resiliencechallenge.nz/>

Organisers also used their personal networks to reach out to response and recovery practitioners throughout the impacted area to encourage representation of potential research 'end-users' and practice-oriented stakeholders. Box 1 illustrates the formal approach made to practice and policy-oriented stakeholders.

Box 1: Email text sent to practice and policy-oriented stakeholders in relationship to the Kaikoura Earthquake Social Science Workshop

The New Zealand social science disaster research community wants to know what your needs are in relation to research following the Kaikoura earthquake.

We are holding a workshop in Wellington on Friday 24 February and would value both your opinions and potential participation on the day. We want to ensure that research plans are aligned with real needs as well as being co-ordinated to minimise time spent and maximise usability. We have over 35 social science researchers attending. This is a workforce that can be harnessed to work on getting answers to your questions.

We would like to invite you to attend the workshop and participate as a key research end user to discuss the current issues, problems and potential research needs are in your region/sector. The workshop will provide an opportunity to interact with active researchers and discuss in small groups what projects are complete, underway or proposed that are relevant to recovery, as well as elaborate on areas and issues that are a concern to you.

Practice-oriented stakeholders who were not able to attend were asked to please provide their input via a short three-question survey which asked:

1. What are your immediate knowledge needs?
2. What are your medium to longer term knowledge needs?
3. What research are you currently involved in, or being consulted about?

Of 11 practice and policy-oriented stakeholders who accepted the invite, eight attended on the day, a further nine completed the survey.

Table 1: Practice and policy attendees’ organisational affiliations and their key interests in the Kaikoura earthquake research effort

Organisation	Interests
Ministry for Primary Industries	Impacts on primary industry – fisheries, viticulture and dairy
Ministry for Business, Innovation and Employment	Economic recovery and a key funder of research
Wellington Region Emergency Management Office (WREMO)	Recovery of impacted areas in Wellington and Lower Hutt
Kaikoura Runanga ⁶	Representing the Ngai Tahu iwi, the indigenous Maori people of the South Island, significant commercial interests in tourism
Christchurch City Council	Recovery of impacted areas in North Canterbury and sharing of knowledge from prior events
Beef and Lamb New Zealand Ltd	Impacts and support for impacted farm and primary industry organisations
EQC – Earthquake Commission	Natural disaster insurer and research funder

⁶ The governing council of the local Maori

Workshop Format

All registered participants were asked via email to reflect prior to the workshop, on the following question:

What do you think the number one social science research priority is for the Kaikoura earthquakes?

The purpose of this pre-work was to encourage researchers to think outside of their traditional specialist boundaries and approach research from a community needs perspective.

On arrival, participants wrote down their response to the pre-workshop question about research priorities. Participants shared these as part of a rapid-fire 'speed-dating' style icebreaker. The written responses were also collected by the organisers and are summarised in the next section (see Figure 2). The icebreaker, was followed by an overview of the key research programs and funders operating in this area and set out the key aims of the day.



The majority of the full-day workshop consisted of two panel discussions and two roundtable discussions. The first panel discussion focused on current issues, challenges, and knowledge gaps relating to impacts and recovery from Kaikoura earthquakes. The second panel focused on the question: what have we learned from past recovery processes that is relevant to this event? Each panel was followed by a question and answer session.



Following each panel, workshop participants separated into seven 'roundtable' groups, with seating pre-assigned by organisers to ensure a mix of researchers and research users. Each table was asked to discuss their reflections on the research needs, how those research needs fit with their own work and how researchers should engage with communities. After 20 minutes, participants were asked to move to pre-assigned tables to commence a further 20-minute discussion, on the same topic, but with a different group of attendees. This structure allowed participants

to engage with others with similar research interests and to gain exposure to a variety of research topics.

At the end of the workshop, a whole of the room discussion was facilitated by organisers focusing on the key takeaway messages and actions from the day. All respondents were asked to complete a brief feedback form.

Workshop Findings

The intention of the workshop began as an exercise to identify and coordinate the social science research interest following the Kaikoura earthquakes: both to inform the recovery and to advance our understanding of earthquake events and disaster recovery. The survey and discussion panels show clear themes emerging around research priorities and avenues for meaningful collaboration. The roundtable and open discussions, however, evolved the discussion toward research practice and the complexities of engagement with affected communities in post-disaster environments. This is not a novel issue, though the depth of the conversation revealed that there is increased sensitivity to the potentially disruptive role that research can play in affected communities, as well as emerging awareness of the ways in which researchers can mitigate disruptiveness and enhance co-creation processes with practitioners and communities.

Research Priorities

The majority of the research priorities identified by workshop participants and pre-workshop survey respondents fall under three themes, although there was interest in many other peripheral topics (Figure 2). The topics primarily relate to advancing our understanding of earthquakes events, rather than as needs to support real-time recovery.

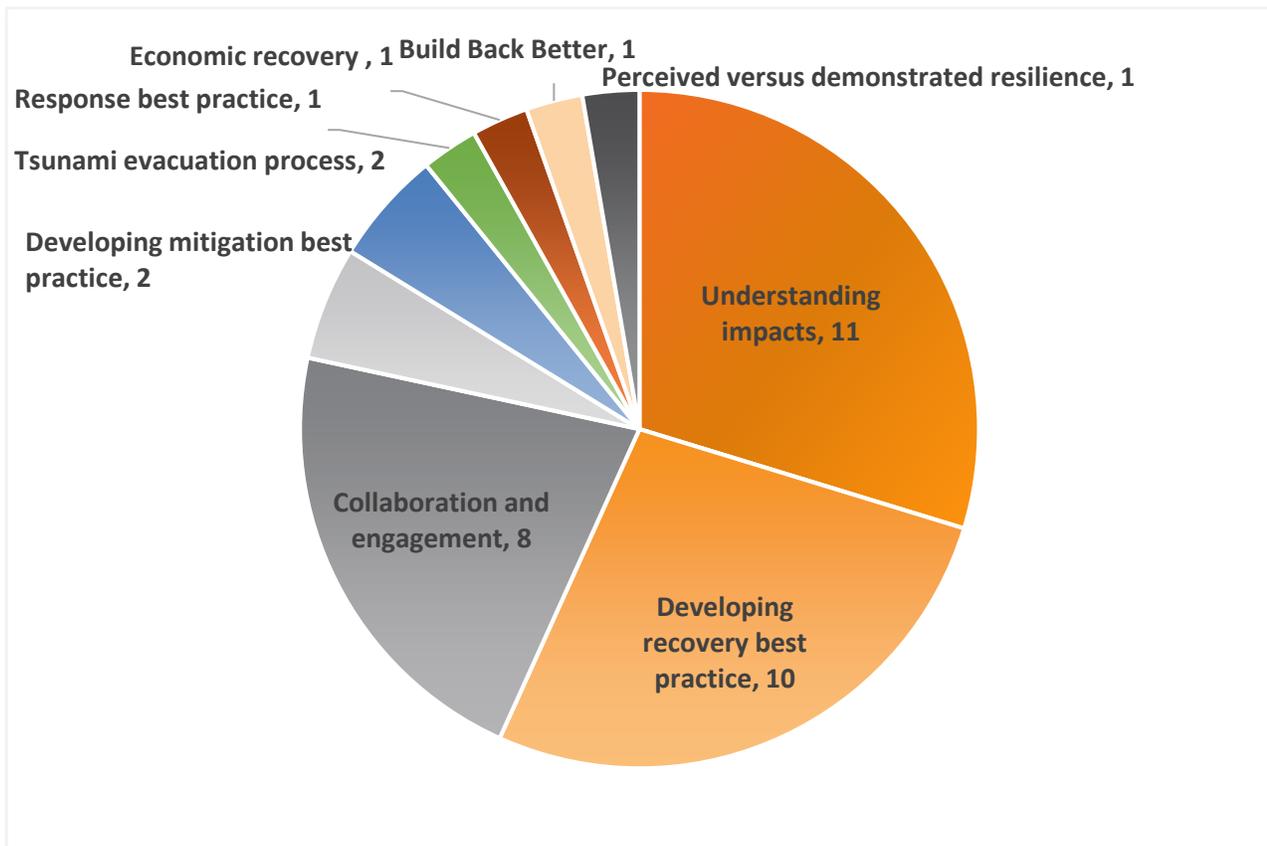


Figure 2: Themes of research interest and number of people reporting being interested in engaging in research on each theme

The largest theme, ‘understanding impacts’, includes work to describe and understand the physical and social impacts of the earthquake, tsunami, and landslides, including areas outside of the most severely impacted region. The second most common theme includes all those interested in elements of recovery ‘best practice’. The third most common theme covers work on the role of collaboration and engagement within and between communities, recovery agencies, and ‘experts’ to better support recovery and future preparedness. Table 2 provides examples of the responses categorised under the three main research themes.

Table 2: Examples of research interests reported by workshop attendees and survey respondents

Theme	Respondents’ research interests
Understanding impacts	<ul style="list-style-type: none"> • The social and economic impacts of naming a disaster after a place • How the Kaikoura earthquake affected the community in other [indirectly affected] areas in terms of economic cost? • What is the effect on property and rent prices, and what implications does this pose upon urban planning? • Understanding business disruption in Wellington and what this might mean for a large-scale Wellington event • Understanding flow on impacts and the distribution of these across different sectors of society or business community (e.g., freight transport impacts) • Spatial behaviour following physical disruption • Effect of the earthquake to livelihoods, how are the people coping (in terms of industries) with the effects • Looking at how people are coping from a mental health perspective
Developing recovery best practice	<ul style="list-style-type: none"> • Measuring effectiveness of recovery to inform current practice and future events • Creating and empowering locally led recovery initiatives • How effective and efficient has communication been between business, local authority and government during the recovery • How do we reconcile the imperatives of centralised and decentralised recovery governance? • To learn from the different recovery structures developed post-Kaikoura in comparison with the Canterbury model, with a view to improving long-term recovery structures in NZ • How can we achieve a policy that things will get fixed quickly? • How can recovery of the built environment help social recovery
Collaboration and engagement	<ul style="list-style-type: none"> • Shared community/agency planning for future disasters across the ‘4 Rs’ • Building on experience of recent events and existing social capital to mitigate and increase preparedness and resilience for future • Bringing expertise in alignment with community/organisation/business/cultural needs in Kaikoura to support understanding of resilience, what it means, how to achieve it so that it makes sense to Kaikoura people • Bespoke needs assessment in each community or industry – ask them what their priorities are

Becoming better post-disaster researchers

An unintended but vigorous line of discussion emerged during the workshop related to social science research best practice in post-disaster environments. Such work has been covered in depth in many forums, including Bevan et al. (2016); Collogan et al. (2004) and North, Pfefferbaum, and Tucker (2002). It is important for best practice to be reinforced through conversation and tailored to specific post-disaster contexts through conscious reflection and engagement. We have endeavoured to capture the main themes from the workshop relating to researcher's relationships with affected populations and those with whom they engage. We have reframed these themes into principles for social science research that can add to the body of work informing research practice following the Kaikoura earthquakes and future disaster events in New Zealand.

Table 3: Social science research principles and best practice discussed at the workshop

Principle	Discussion point	Suggested Best Practice
Endeavour to minimize social disruptions caused by your research	An influx of people interested in doing research, particularly in the smaller rural communities, can often put further strain on local resources, capacities, and wellbeing.	Researchers should network and coordinate similar projects and share data, when appropriate, to make the most use of resources and of respondents' time.
Capture the heterogeneity of impacts, responses, and recovery trajectories	There are diverse needs and experiences of geographically and demographically unique communities. For example, Maori cultural impacts and values, especially in recovery management, have not been well recognised to this point.	Conduct bespoke needs assessments, support inclusiveness at all stages of research, and identify meaningful ways to co-create and share research outcomes with the community.
Clarify the role of the researcher	Researchers often want to understand immediate needs, but may not be equipped to help resolve those needs.	Researchers need to be clear with themselves and with communities about their limitations and intentions.
	Researchers are often drawn into processes of response and recovery.	Where appropriate, researchers can engage with communities as experts providing deep insights into disasters who can serve as a resource in a trusted advisor role. Relationships should be built with recovery authorities prior to the event, where possible.
Manage expectations	Some research outputs will be provided back to affected communities, while in other cases research outputs will be distributed more generally through research reports.	Researchers should be clear with participants about how the outcomes will be used and distributed. And, where possible, make outputs accessible to research participants.
Not all research needs to be done "now"	Engineers and geophysical researchers were directly engaged immediately following the Kaikoura event as a matter of life safety and access to affected areas. Social scientists with established connections to affected communities or responders were engaged to estimate economic impacts or help run community needs' assessments in the early phases of disaster response. In cases, where an immediate request was not made, social scientists were asked to delay research until the situation stabilised.	Research that will inform future mitigation, planning, and recovery actions is important, but should be considered secondary to the immediate needs and wellbeing of affected communities. Researchers should avoid "chasing ambulances" and be realistic about where and when their work will be most useful.

Table 3 (continued): Social science research principles and best practice discussed at the workshop

Principles	Discussion Points	Suggested best practice
Develop communication strategies that are appropriate for the intended audience	As a way to make science accessible to the public, a strategy can include describing the impacts of an earthquake on something tangible, e.g. crockery rather than probabilities and magnitude which can be too abstract. In this case, an earthquake's effects would be described in terms of how much the dishes in someone's cupboard might rattle or fall for a given intensity.	When communicating with the public at large, science messaging should be clear and related to people's everyday experiences.
Be aware of the psycho-social strain faced by researchers	Many in New Zealand have been working on active disasters consistently since at least the beginning of the Canterbury earthquakes in 2010. Some are expected to respond immediately as each new disaster unfolds, as a result the strain within the research community has become a pervasive issue.	Researchers and their colleagues and collaborators should monitor the psycho-social wellbeing of those doing research on disasters, and practice self-care or raise the issue with colleagues you are concerned about.
All disasters and communities are different	While a considerable body of knowledge has been accumulated in New Zealand and abroad on disasters, acceptable practice, risk tolerance, and social and policy environments change over time and between places. This means "lessons learned" from previous experience are not always applicable in the current context.	Situational awareness, foresight, and local expertise have a role to play alongside lessons learned and subject-matter expertise.
Your research outputs might not be received the way you hoped	Despite several suggestions for policy-oriented and "impactful" research, a lesson from the research following the Canterbury earthquakes is that some research outputs are not politically palatable, regardless of the quality and validity of the findings. Similarly, some research outputs will not have clear immediate implications or benefits but may be insightful later.	Socialise your research early and often with the groups you hope to reach. Not all work needs to impact policy or catalyse immediate action. Some work will incrementally advance understanding in a particular field and that is an acceptable outcome.

The discussions also generated a large number of concepts on which workshop participants felt more attention could be paid. These points are summarised below.

Improvements

- Capture stories and data that can be shared with other researchers to reduce overlapping research.
- Support the community, not just investigate them.
- Be collaborative and output oriented by asking what does your research give back?
- Engage early, late, and often.
- Have a clear plan to embed research outputs into something useful upfront instead of tagging it on at the end.
- Manage expectations and improve how we 'sell' our research – both when approaching participants and with outputs, and emphasize that research cannot answer everything.
- Identify how to best work with rural communities where people wear many 'hats' - farmer/councillor, retiree/tourist, youth/entrepreneur etc.
- Develop capacity to more effectively communicate research to affected communities, as research expertise and deep knowledge does not necessarily mean communication ability.
- Utilise participatory processes that co-produce knowledge using feedback loops, continuity of process, and balance top-down and bottom-up - without overburdening participants.
- Act as researchers but also appreciate our role as trusted advisors, critics and a conscience of society.

Practical Advice

- Take advantage of the window of opportunity when a disaster occurs, as the government is most open to new ideas when they are confronted with a major unexpected challenge
- Connect with researchers who have already networked well with policy-makers and local community
- Maintain a willingness to be bold and produce publications that are meaningful even if they are not politically acceptable
- Set research as a dynamic process rather than one-off event
- Improve the quality of local data, especially social indicators. Researchers can support local authorities with this as they know methodologies and the types of data that would be useful post-disaster.
- Connect with NGOs as they tend to be well-networked and able to apply research findings rapidly. They are also often a good source of research data and outputs and are well-connected to local communities. This might be the most effective way for academics to connect with local communities that they do not already have a connection with.
- Run workshops on research outputs for consultants, government departments, and local authorities. Be more proactive with sharing research outputs.

- Connect academia and government with secondments to develop understanding of how each side works – capacity development projects where government officials do a graduate degree or diploma to gain knowledge but also exposure to the various “lifecycles” with the academic research community, and vice versa.
- Recognise that how research engagement processes may change as the disaster transitions from response to recovery, and will depend on the target participant group.
- Recognise that how you frame an event can affect people’s perceptions and engagement. For example, referring to the crisis period as a ‘transition’ or ‘recovery’ can have an impact.

Discussion

The workshop achieved its key aim to provide a forum for connections to be made between existing research programmes, individual researchers, iwi representatives, and research end-users. An unintended, but useful emergent outcome of the workshop was a robust discussion about the processes of research following the Kaikoura, and other, disaster events. Many the issues raised also emerged during the research response to the 2010-11 Canterbury earthquakes. Researchers are still grappling with the challenge of conducting robust, ethically sound, timely and impactful research in the wake of a disaster. Researchers with an interest in improving future preparedness, response or recovery may need to consider how their outputs can convert to best practice for practitioners, a framing which may not naturally occur without significant engagement with those practitioners

This workshop provided considerable insight into the challenges and issues faced in increasing collaboration and engagement between research and potential research-end users, and a start towards promoting that engagement. One of the key themes from the day, is the need to work in a “joined up way” by engaging with each other, individuals, government, and communities. In particular, for disasters that impact mainly on small rural communities, it was felt that the top-down tendency from government and even researchers continues to prevail in crisis and recovery. This meant not only engagement with those in disaster areas but within the research community to help reduce saturating the research field by collaborating and sharing data where appropriate.

One way of achieving this is to re-frame the role of a researcher away from a person simply entering a community and leaving with data and publishing in a journal. Instead, it was suggested that researchers could be trusted advisors co-creating bespoke solutions together with government, civil society, and locals.

Conclusions

From an initial premise for the day of what do we need to know, and what have we learnt in the past that should be applied, much of the discussion focused on the processes that are needed to ensure that we can answer the first question and effectively communicate the second. This workshop contributed to starting that process of engagement. Although there is clearly a long road to travel to achieve ‘joined-up’ working between researchers, communities and governance organisations, this workshop was a useful event to promote discussion, highlight some of the challenges and move towards solutions.

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Appendices

Appendix 1: Kaikoura Earthquake Social Science Research Workshop Participants

First name	Last name	Organisation/institution	Email address	Key research interests
Abi	Beatson	Joint Centre for Disaster Research	a.beatson@massey.ac.nz	Social Media Research
Andrea	Grant	Scion	andrea.grant@scionresearch.com	Community resilience planning in a multi-hazard environment with a focus on volunteering and drawing lessons from wildfire resilience
Barnaby	Pace	Hamilton City Council	barnaby.pace@hcc.govt.nz	About to undertake PhD research into natural hazards communication in a local government context
Bob	Kipp	Resilient Organisations	robert.kipp@resorgs.org.nz	The viability of establishing a multi-disciplinary "rapid deployment" research team for disaster research. And, the palatability of a "best practice guide" for disaster research in New Zealand including ethics and expectations for researchers.
Bridgette	Sullivan-Taylor	University of Auckland	b.sullivan-taylor@auckland.ac.nz	Organisational resilience, strategic decision making, public-private partnership in the face of extreme events.
Bruce	Glavovic	Massey University	b.glavovic@massey.ac.nz	To understand the factors shaping the initial design and institutionalisation of the Kaikoura recovery process.
Caroline	Orchiston	University of Otago	caroline.orchiston@otago.ac.nz	Rural resilience - tourism - natural hazards
Cassie	Kenney	Joint Centre for Disaster Research	c.kenney@massey.ac.nz	indigenous disaster response
Charlotte	Brown	Resilient Organisations	charlotte.brown@resorgs.org.nz	Organisational resilience, economic impacts of disasters, decision-making, insurance
Cuong	Nguyen Nhu	Victoria University of Wellington	cuong.nguyen@vuw.ac.nz	Recovery, insurance

First name	Last name	Organisation/institution	Email address	Key research interests
David	Simmons	Lincoln University	dsimmons@lincoln.ac.nz	Tourism sector risk, resilience and recovery (already commissioned by MBIE).
David	Johnston	Joint Centre for Disaster Research	david.johnston@gns.cri.nz	Behavioural responses to hazards
Denise	Blake	Joint Centre for Disaster Research	d.blake@massey.ac.nz	Vulnerable populations, behavioural response to hazards
Donald	Matheson	University of Canterbury	donald.matheson@canterbury.ac.nz	I'm co-director of the Arts Digital Lab at Canterbury that set up the CEISMIC archive and a number of other quake-related humanities and social science projects.
Donna	Wilson	Wellington City Council	donna.wilson@wcc.govt.nz	
Duncan	Joiner	Ministry of Business, Innovation and Employment	duncan.joiner@mbie.govt.nz	The temporary and permanent changes in socio-spatial behaviour following a major disruption, particularly in relation to commercial and public facilities. I decided to come to the Workshop because our agency is developing strong knowledge in geotechnical and structural engineering around earthquakes, but we have little complementary information about what this means for behaviour.
Erica	Seville	Resilient Organisations	erica.seville@resorgs.org.nz	Business recovery and recovery tipping points
Hanna	Masoumeh	Victoria University of Wellington	hbb.masoumeh@gmail.com	In a nutshell, my PhD research focuses on two main topics. First, a composite index that assesses the severity of natural and non-natural disasters from an economic perspective. Second, assessing the impact of post-disaster psychological and behavioural changes on the macroeconomy using machine learning and big data analysis. These objectives are intended to be researched in a manner generalizable on other countries, while using only New Zealand as a case study.
Hayley	Squance	Massey University	h.squance@massey.ac.nz	Assessing the effectiveness of the regional animal welfare emergency management framework. MPI is lead agency for AWEM at a national and regional level and this earthquake

First name	Last name	Organisation/institution	Email address	Key research interests
				sequence is the first significant event which has activated the response framework.
Henare	Manawatu	Kaikoura Runanga	henare.manawatu@ngaitahu.iwi.nz	
Jacob	Pastor	Victoria University	jacob.pastor.paz@gmail.com	Relevant to my work with Ilan Noy on disaster insurance in NZ
Jenny	Rains	Wellington City Council	jenny.rains@wcc.govt.nz	
Jo	Fountain	Lincoln University	jo.fountain@lincoln.ac.nz	I am specifically interested in the wine industry, and in particular developing and applying tools for enhancing the resilience of NZ's wine producers and stakeholders to earthquakes and other hazard events. The goal is to begin research with a case study based in Marlborough, but in time to extend this to other wine regions in New Zealand.
John	Hopkins	University of Canterbury	john.hopkins@canterbury.ac.nz	The use of emergency powers and exceptional legislation.
Kelvin	Whall	Beef and Lamb New Zealand	kelvin.whall@beeflambnz.com	
Lisa	Langer	Scion	lisa.langer@scionresearch.com	I am an active participant in the rural resilience case study which was underway in the Kaikōura district preceding the earthquakes). My particular research interest is shared community/agency planning across the 4 Rs across all natural hazards, including wildfires.
Lisa	McLaren	WREMO/JCDR	lisa.mclaren@gw.govt.nz	Citizen science
Lucy	Carter	Joint Centre for Disaster Research	l.h.carter@massey.ac.nz	Indigenous disaster response
Marion	Tan	Massey/JCRD	m.l.tan@massey.ac.nz	How technology and society interact during the course of a disaster. My doctoral project is on the 'usability of mobile apps for disasters'. I am also part of a research group that is looking

First name	Last name	Organisation/institution	Email address	Key research interests
				into sociotechnical aspects of disaster research (citizen science, social media, mobile apps).
Mike	Gillooly	CCC	mike.gillooly@ccc.govt.nz	
Miles	Crawford	Joint Centre for Disaster Research	m.crawford1@massey.ac.nz	1. how risk modelling has been used by local government to respond and recover from the earthquakes 2. whether risk modelling has been used as a communication tool for local government to better develop policy and procedure to reduce the consequences of future earthquakes
Morag	Ayers	Market Economics Ltd	morag@me.co.nz	Coastal shipping - economic impacts and resilience in the transport network, changes in central government productivity following an earthquake in Wellington
Nancy	Brown	Joint Centre for Disaster Research, Massey University	n.brown1@massey.ac.nz	Building disaster resilience in the hotel sector. I am keen to have an opportunity to learn more about how the hotels fared in Kaikoura and what they consider to be their lessons learned.
Nicholas	Whittaker	Hamilton City Council	nicholas.whittaker@hcc.govt.nz	
Nick	Cradock-Henry	Landcare Research	cradockhenryn@landcareresearch.co.nz	Co-lead Rural Program, Resilience to Nature's Challenges and lead the Kaikoura Case Study, 'Resilience Solutions for Rural New Zealand', which is focused on knowledge brokering, and social learning for rural resilience.
Olivia	Wills	Victoria University of Wellington	oliviawills@outlook.com	PhD in the Economics of Disasters: Currently studying the education impacts of the Kaikoura earthquake.
Paul	Bruere	MBIE	paul.bruere@mbie.govt.nz	Collecting information on critical research needs and helping government assess whether further support is needed to achieve them
Regan	Potangaroa	Victoria University of Wellington	regan.potangaroa@vuw.ac.nz	The Maori response in Kaikoura to the earthquake and we are working on 2-3 projects currently; Maori resilience, Maori business preparedness and Quality of Life.

First name	Last name	Organisation/institution	Email address	Key research interests
Richard	Le Heron	Auckland University	r.leheron@auckland.ac.nz	
Richard	Smith	EQC	rsmith@eqc.govt.nz	
Sabrina	Daddar	University of Canterbury	sabrina.daddar@pg.canterbury.ac.nz	My PhD research is looking at Maori organisational resilience from the 2010/2011 Christchurch earthquakes. This would be an amazing learning opportunity to work with the Ngai Tahu community at large from the November 2016 earthquake.
Sam	Ripley	Wellington Region Emergency Management Office (WREMO)	sam.ripley@gw.govt.nz	
Sara	McBride	GNS Science	s.mcbride@gns.cri.nz	
Sarah	Beaven	University of Canterbury	sarah.beaven@canterbury.ac.nz	My own research interests concern cross-sector collaboration post-disaster, particularly involving the science domain. I would like to attend the workshop, however, as part of the Rural NSC research team (which will have an NSC coordinating role in Kaikoura, due in part to a rural resilience case study underway in the district preceding the earthquakes).
Susan	Keenan	MPI	susan.kennan@mpi.govt.nz	MPI is coordinating primary sector recovery (farmers, producers, fishers) from the Kaikoura/Hurunui Earthquake Event in accordance with its Primary Sector Recovery Policy. We coordinate and fund, while others (e.g. Rural Support Trusts, rural recovery coordinators) do most of the on the ground delivery and are interested in long term support options, including research.
Temitope	Egbelakin	School of Engineer	t.egbelakin@massey.ac.nz	
Tom	Wilson	University of Canterbury/Resilience to Natures Challenge (Rural)	thomas.wilson@canterbury.ac.nz	Rural resilience, critical infrastructure, natural hazard risk assessment

First name	Last name	Organisation/institution	Email address	Key research interests
Toni	Collins	University of Canterbury	toni.collins@canterbury.ac.nz	My key research interests relate to the legal issues faced by commercial landlords and tenants after the earthquakes. In Kaikoura businesses were affected by lack of access to the township. In Wellington businesses were excluded from buildings caught within the cordon set up for dangerous buildings.
Tracy	Hatton	Resilient Organisations	tracy.hatton@resorgs.org.nz	Business recovery, resilience, and role of NGOs in recovery.
Tyler	Barton	University of Canterbury	tyler.barton@pg.canterbury.ac.nz	Helping organizations and businesses in the Hurunui and Kaikōura districts better prepare themselves against the impacts of natural disasters. My research explores what is needed to do this, and particularly what sort of information is wanted / asked for, which would enable local communities to help themselves.
Vivienne	Ivory	Opus Research	vivienne.ivory@opus.co.nz	Decision making and governance processes for transportation. Mobility of businesses in rural areas affected by quakes compared to the high mobility shown by displaced businesses in Christchurch.
Wendy	Saunders	GNS Science	w.saunders@gns.cri.nz	Multi hazard occurrence in the Hutt - EQ, tsunami warning, high winds, flood, storm surge. Post recovery land use planning.

Appendix 2: Kaikoura Earthquake Social Science Research Travel Support Summary

Name	Travel Support Provided
Barnaby Pace, Hamilton City Council	\$300.00
Charlotte Brown, Resilient Organisations	\$300.00
David Simmons, Lincoln University	\$300.00
Hayley Squance, Massey University	\$300.00
Nicholas Whittaker, Hamilton City Council	\$300.00
Sabrina Daddar, University of Canterbury	\$300.00