

# Engaging stakeholders in pre-event recovery planning: using a recovery capitals framework

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## Introduction

The Wellington Region Emergency Management Office (WREMO) is the Civil Defence and Emergency Management office serving the Wellington Region. WREMO's role is to lead and coordinate the effective delivery of civil defence and emergency management across the 4R's of comprehensive emergency management (Reduction, Readiness, Response and Recovery).

Following a disaster, communities undergo a stage of immediate response followed by a period of recovery. Recovery can be broken down into phases of short-term (restoring critical services and infrastructure) and long-term (either returning communities to their pre-disaster conditions (Schwab *et al.* 1998) or improving to build back better). Recovery in the short and long term is a complex process and involves a multi-faceted approach to communication and coordination (Becker, Saunders & Kerr 2006). Smith and Wenger (2007, p.237) define disaster recovery as 'the differential process of restoring, rebuilding and reshaping the physical, social, economic and natural environment through pre-event planning and post-event actions'.

In Australia, Beyond Bushfires has conducted significant research addressing the recovery of communities following major disasters (Block *et al.* 2019, Bryant *et al.* 2017, Gibbs *et al.* 2016). Pre-event recovery planning is important because it allows for time to build partnerships, identify opportunities to improve resilience and create shared expectations of post-disaster actions and priorities (Vallance 2011a, 2011b; Ward, Becker & Johnston 2008). WREMO identified a need to improve pre-disaster recovery planning by increasing stakeholder engagement as well as to better understand stakeholders' priorities following a significant event.

1 Iwi are extended kinship groups often a large group of people descended from a common ancestor and associated with a distinct territory in New Zealand.

## Abstract

In 2018–2019, the Wellington Region Emergency Management Office in New Zealand, in partnership with Te Hiranga Rū QuakeCoRE, ran a series of workshops on the five recovery environments (built, cultural, economic, natural and social) to develop the region's recovery framework. To get balanced and diverse perspectives, workshop attendees included representatives from central and local governments, iwi<sup>1</sup>, community groups, businesses, not-for-profits and academia. This paper uses a case study to highlight the challenges and opportunities of a collective partnership approach to pre-event planning. The workshop outputs are used to develop a regional recovery framework and to improve emergency management engagement before and after an emergency event. This paper demonstrates and evaluates a novel approach for engaging stakeholders about pre-event recovery planning. This can guide similar efforts for Civil Defence and Emergency Management agencies in other locations in New Zealand as well as elsewhere.

Te Hiranga Rū QuakeCoRE encompasses four technology platforms and six flagship programs of multi-disciplinary research undertaken to improve how communities recover from and thrive after major earthquakes. As part of the QuakeCoRE Flagship 5 Programme, Resilience in Practice, it was decided that the Wellington Region could be a case study to understand the perceived roles and responsibilities of agencies and organisations in a recovery context.

To this end, the WREMO and Te Hiranga Rū QuakeCoRE Flagship 5 developed five three-hour workshops on post-disaster recovery across the five recovery environments of built, economic, cultural, natural and social environments. These workshops were held between November 2018 and June 2019 in Wellington, Aotearoa-New Zealand. In total, 208 people attended the workshops from sectors including planning and policy, health and social services, central government, regional and local authorities, utilities and insurance as well as some private organisations. Each workshop averaged 42 participants.

The key objectives of the workshops were to:

- build relationships among future recovery partners
- create a shared understanding of the recovery context
- prioritise potential activities in short-term and intermediate recovery
- identify future partners and capabilities
- explore potential cross-environment partnerships.

## Methodology

A ‘capitals framework’ was adopted for the analysis of the workshop feedback. Initial thinking on a capitals framework was developed by Flora and Flora (1993) who explored the concept

of resource mobilisation through different infrastructures such as social and physical. This was adapted in later literature to concentrate on how to mobilise resources throughout the cycle of a disaster. The capitals construct originated from the economics discipline (Miles 2015) and has broadened to include community capitals (Emery & Flora 2006, Aldrich 2012, Cutter *et al.* 2014, Gilbert 2011). While the core idea of recovery capitals is used in some emergency management frameworks in New Zealand, capitals are framed as ‘environments’. This project adopted the resilience capitals definitions developed for the Ministry of Civil Defence and Emergency Management (2019) *National Disaster Resilience Strategy* that uses the five environments as a model for a resilient nation (p.20), see Figure 1.

## Activity design

This research investigated stakeholder input in the recovery planning. Data were collected from five workshops and from an online survey of attendees after the workshops. Survey questions explored levels of participation, what attributes of the workshops were useful to participants and what potential actions could be taken by individuals and groups.

This research received approval from Massey University; Ethics Notification Number: 4000020312.

## Engagement

Each recovery environment encapsulates specialist knowledge, perspectives and relationships. To generate an effective workshop outcome, a range of participants was required to stimulate discussions and provide adequate context and expectations. To facilitate this, a working group was assembled

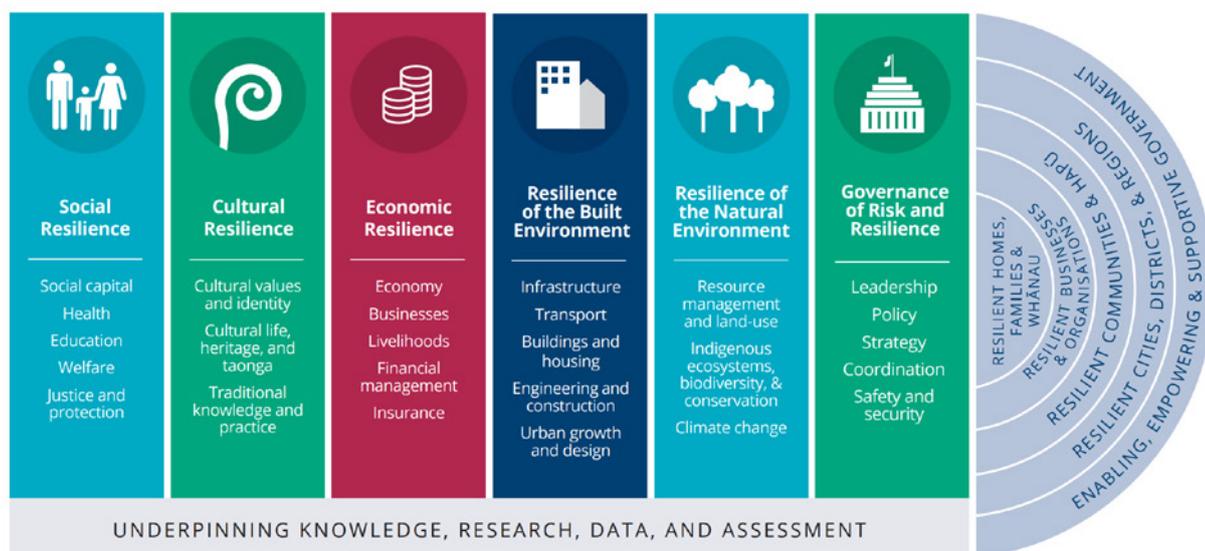


Figure 1: *National Disaster Resilience Strategy* model of a resilient nation.

Source: Ministry of Civil Defence and Emergency Management

before the first workshop (the cultural environment) to identify pre-workshop tasks and to leverage networks and knowledge. Working group members included WREMO, QuakeCoRE researchers and stakeholders from the cultural environment.

To create a breakdown of each recovery environment and the potential stakeholder engagement, each environment was split into possible groupings. For example, the built environment was split into 'transportation, land use and planning, utilities and buildings'. Using this information, a first wave of invitations was sent with subsequent invitations sent as more potential invitees were identified via the working group or by potential participants.

### Workshop

Each workshop used the same base scenario to help participants imagine the disruption and damage they might face after a disaster. WREMO opted to use the magnitude 7.5 Wellington fault earthquake scenario outlined in the Wellington Region Earthquake Plan as it is used throughout the region and is consistent with national response planning. WREMO used staff knowledge, previous hazard and risk modelling and examples from other earthquakes to develop conditions for this scenario. Scenarios were projected to 30 days and 9 months after the event to align with the existing short- and intermediate-term recovery planning framework.

At most workshops (except for the natural environment workshop) guest speakers presented on work or topics relevant to that environment. Speakers generally made connections to the workshop and expanded on specific examples of their work or experiences in recovery.

Each workshop included an introduction, guest speaker presentation and an explanation of the scenario for that workshop. Three activities were facilitated with the participants and were in the same format for each of the five environments.

Activity one, identify potential activities, had two goals:

- To facilitate collaboration and networking among table groupings.
- To capture examples of short- and intermediate-term priorities for inform the recovery framework.

The activity was run in two parts. The first was to identify short-term priorities and activities and separate these into 'must do' and 'should do' activities. After discussion, the second half of the activity examined the 'must do' and 'should do' lists for intermediate-term recovery. Each part took approximately 20 minutes and the activity ended with a discussion.

For activity two, recognising future sector partners, participants were given handouts and asked to record the names and contact details of agencies and individuals who would be important to include in recovery planning and initiatives. Participants could also record why they considered these agencies and individuals important and what they might contribute.

For activity three, explore cross-environment collaborations, participants were asked to design collaborative recovery activities that included roles under each of the five environments. The purpose was to widen their thinking beyond their specific role. Participants were asked to present their ideas. These were then voted on by attendees to identify the most successful ideas.



Workshop participants identified short-term priorities and activities and categorised these into 'must do' (pink post-it notes) and 'should do' (yellow post-it notes).

Image: Lucy Kaiser



The Hon. Grant Robertson, Minister of Finance, Arts, Culture and Heritage and Sports and Recreation participated in group activities.

Image: Lucy Kaiser

## Workshop analysis

Participants could take notes during activities and used post-it notes and printed forms. These different forms of data were drawn on to describe some of the key themes and concepts that arose.

## Limitations

A limitation of the workshops was the different levels of familiarity and existing partnerships between the emergency sector and other environments. As WREMO had existing programs addressing infrastructure resilience and urban planning, staff had particularly good knowledge of the built environment relative to the other four. For environments where WREMO had less familiarity, they used small groups and one-on-one conversations with subject-matter experts. The primary purpose of these groups and conversations was to break down different focus areas within a recovery environment and identify agencies to invite to a workshop. The cultural environment working group was the most formalised, while the other four environment groups were largely conceptualised by WREMO with input from subject-matter experts.

As the cultural environment was one of the least familiar environments to WREMO and as it was the first workshop, it was beneficial to have a formal working group for planning. The other workshops had informal expert input largely through one-on-one conversations, rather than intensive working groups. As such, the understanding of components and potential invitees were not as robust as it was for the cultural environment workshop.

There may have been benefit in including other representatives as part of the data analysis team, such as working group members. While the outputs of the data review process chosen for this project seem adequate, it is acknowledged that other reviewers, particularly those imbedded in their sectors, would have different interpretations.

A final limitation was that only a small number of responses were received to the survey that was circulated to participants at the conclusion of each workshop. Survey responses are included for exploratory reasons and reflection as opposed to providing quantitative rigour to the evaluation process.

## Activity results

A total of 208 participants attended the five workshops. The social and built workshops had the highest attendance rates (63 and 58, respectively), while 50 individuals attended the cultural workshop and the economic and natural workshops had the least number of attendees (26 and 31, respectively). The number of attendees is illustrated in Figure 2.

The difference in attendance could be due to multiple factors. Organisers relied on their knowledge of each environment and their relationships with organisations and individuals within these environments to compose the attendee lists. As organisers were most familiar with the cultural, social and built environments, it was easier to compose the attendee lists for these workshops. Additionally, the final workshop (economic) was held close to the

end of the financial year and individuals who may have otherwise participated might have been too busy to attend.

### Attendees for each environment

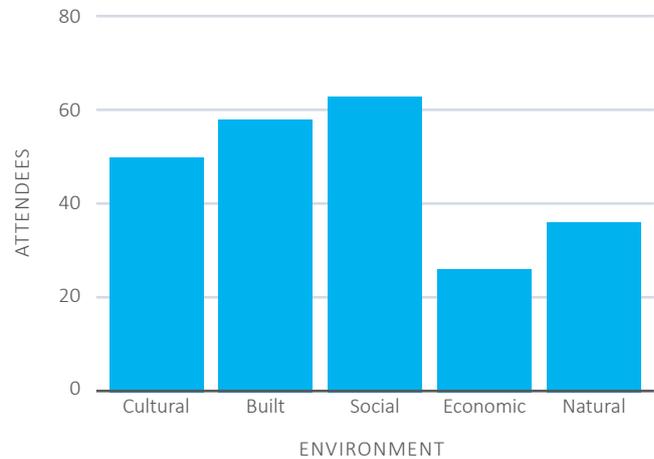


Figure 2: Total attendees across the five environment workshops.

Representatives from a broad range of stakeholder organisations were invited to improve the diversity of perspectives. However, participants tended to associate with individuals from the same agency. Organisers ensured a good range of different agencies made up each thematic table. Ultimately, 129 agencies were represented across the five workshops.

## Activity 1: Identify potential activities

Activity one identified the short- and medium-term ‘must do’ and ‘should do’ activities in a disaster-recovery context. A comparative summary of activity one data outputs for each of the environment workshops is illustrated in Figure 3(A).

Participants produced 1272 unique data outputs (in post-it-note form) across the five environment workshops. The social and built environment participants produced the most outputs (379 and 308, respectively) and the economic and natural participants produced the least (139 and 160, respectively). However, the number of outputs per person for each workshop was fairly even with an average of six outputs produced per person across all five environments.

## Observations

Participants took two approaches to the activity. They either discussed the prompts as a group and produced collective post-it notes representing these ideas or they took a more conversational approach on the prompts and produced individual thoughts on post-it notes. Both approaches were effective at getting people to think collectively about their sectors.

Several themes of discussion occurred universally across all of the five sectors. These were communications, business continuity planning, collaboration, community wellbeing, governance and legislation as well as planning and welfare. Perspectives on short- and intermediate-term planning were separated into:

- inwardly focused agency and organisational issues for returning to operations
- outwardly (and more holistic) focus around collectively catering to the interests and needs of communities and collaboratively assisting in the recovery of the Wellington Region.

### Activity 2: Recognise future sector partners

Activity two identified future sector partners for disaster recovery, particularly those who were not at the workshop. A comparative summary of activity one data outputs for each of the environment workshops is illustrated in Figure 3(B).

A total of 554 organisations and agencies were named by workshop participants (repeats included). Natural and economic environment workshop participants generated particularly high outputs per attendee (approximately four outputs per participant). This may have been a reflection of the fewer attendees at the workshop or, potentially, there was less knowledge of these two environments.

#### Observations

There was minimal repetition in listing potential partners (e.g. of 116 suggestions from the cultural workshop, 109 were unique agencies and organisations). Suggestions ranged from very specific (a particular person with contact details) to more broad recommendations ('local marae' and 'oil companies'). This was primarily an individual activity and generated little discussion.

### Activity 3: Explore cross-environment collaboration

The third activity facilitated collaborative thinking across all five of the environments. Participants compiled a recovery activity idea that included the cultural, built, social, economic and natural environments. A comparative summary of activity one data outputs for each of the environment workshops is illustrated in Figure 3(C).

There were 99 individual activity sheets created across all five workshops, varying in detail. Suggested activities ranged significantly and included community fun events aimed at raising morale to ideas looking at the long-term such as using the regional park network to house displaced people by creating mobile communities.

#### Observations

Participants seemed responsive to the competitive element of this activity; clapping and cheering loudly for their own ideas. There appeared a strong sense of pride from many participants related to their designed activities and a few participants requested to retain their activities to share with colleagues. It was also a useful mechanism for getting people to continue talking through lunch. Several tables of participants delayed handing in their designs at the conclusion of the activity so they could continue to talk further with others on the ideas. This was encouraging and is an indication that conversations and connections may be maintained.

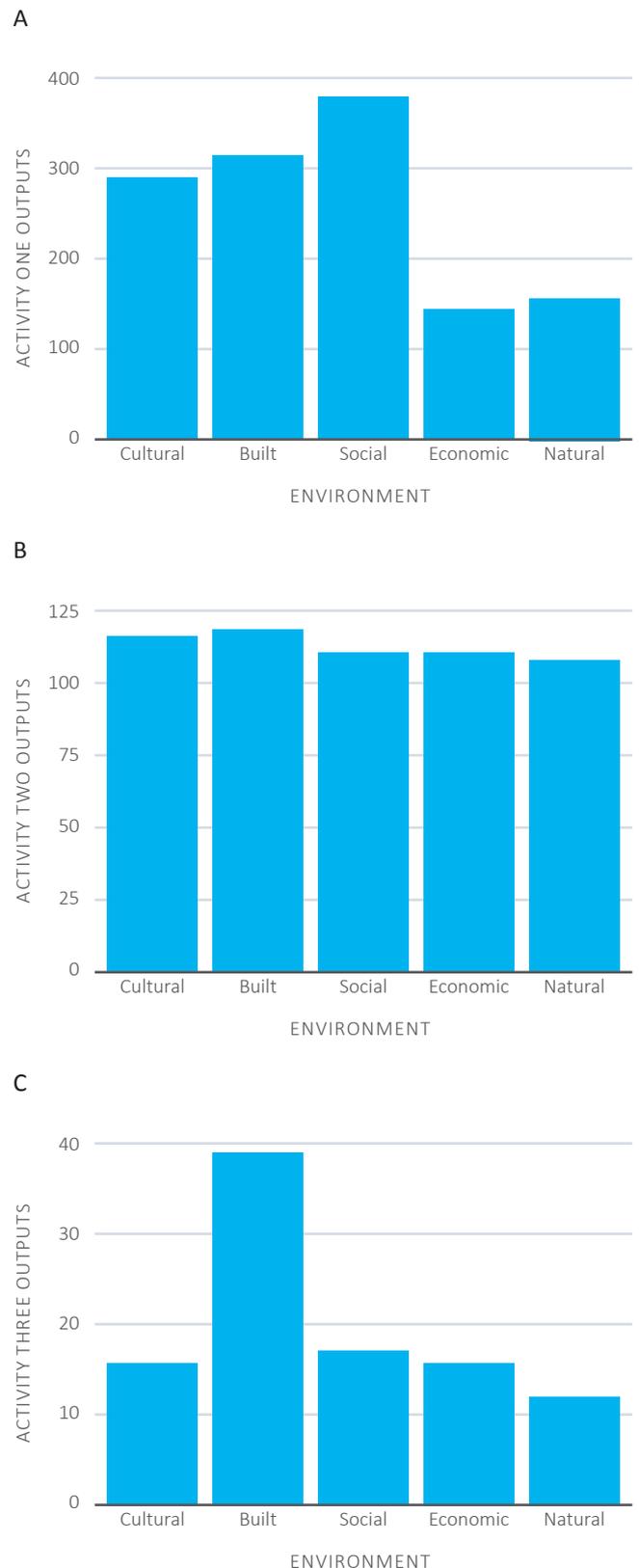


Figure 3: Comparisons of data outputs for activities one (A), two (B) and three (C).

Figures 3(A), 3(B) and 3(C) offer a comparison of activity outputs across each of the five environment workshops.

## Evaluation and learnings

After the workshops, a tailored summary of each workshop and survey were sent to all participants. The summary included information on next steps and other opportunities for learning and engagement relevant to each environment (books, workshops and online modules).

In total, 27 survey responses were received across the five environments providing an average response rate of 12 per cent for each workshop. The survey consisted of two closed questions and three open-ended questions. Question one asked what environment sector the respondent represented and question two was a Likert-style question asking respondents ‘how useful did you find the workshop?’ In answer to question two, 26 respondents (all but one) rated the workshop as either ‘very useful’ or ‘somewhat useful’.

There were three additional open-ended questions in the survey to evaluate the effectiveness of the workshops and to improve the development and facilitation of similar workshops. These questions were:

- Q3 - *What were the most useful parts of the workshop?*
- Q4 - *What parts of the workshop could be improved in the future?*
- Q5 - *What, if any, action do you intend to take as a result of the workshop?*

Several respondents addressed multiple points in a single answer while others responded to one or two of the open-ended questions.

### Q3 - What were the most useful parts of the workshop?

There were 20 responses to this question. Eleven responses mentioned that networking, interacting and collaborating with other people in the environment/sector was the most useful part of the workshops. Six responses found the scenario and planning elements the most useful component of the workshops while other responses noted that lessons learnt from the Christchurch earthquakes, hearing from guest speakers and the contextual PowerPoint information was useful.

### Q4 - What parts of the workshop could be improved in the future?

There were 19 responses to this question (excluding answers of ‘not applicable’ or ‘nothing comes to mind’). Three respondents highlighted that more people from across the sector could have been present at the workshops. Three suggested that an introduction exercise to discover who was in the room would have been useful earlier in the workshop. There were also responses pertaining to the length and format of the workshop activities with three respondents suggesting more time for discussions and presenters. Two respondents suggested that the activities took too much time and five respondents stated that more clarification was needed on the exercises in the pre-workshop communication and whether experts were there to learn or contribute. The table groupings were an issue for two

respondents who would have preferred bigger groupings as opposed to smaller groups across two tables and that similar organisations needed to be grouped together. Other responses referred to the diversity of communities addressed in the scenarios, relevance of the workshop to particular stakeholders, a need for tailored advice for each sector and suggestions about catering and parking.

### Q5 - What, if any, action do you intend to take as a result of this workshop?

There were 22 responses to this question with actions ranging from individual and personal disaster preparedness actions to business continuity and organisation-wide actions. Personal actions included getting water tanks for the home. More broadly, participants mentioned reading more, reconsidering personal emergency plans and being more ‘ready’ in general. Individuals also discussed actions they could take to increase their organisation’s preparedness such as displaying mental health information in their office and sharing PowerPoint presentations from the workshop with their team. Team-based actions included preparing or revisiting business continuity plans (three responses), pursuing collaboration opportunities with other agencies in the sector (three responses) and improving organisational planning in general (two responses). Some miscellaneous actions included reflecting on lessons learnt from the past, understanding the diversity of clientele and a call to action for WREMO to be inclusive of Māori and Pacific Islander identity in their recovery planning.

This feedback was useful to understand participants’ thoughts on the core themes. To improve feedback quality, participants could fill in a physical copy of the survey at the conclusion of the workshop and leave with organisers. This has potential to increase the number of responses. In addition, meetings with a selection of stakeholders from each workshop could be conducted.

## Conclusion

Practitioner and researcher collaboration is important to deliver projects that are relevant to the often rapidly changing contexts that practitioners work in while maintaining a connection to researcher knowledge drawn from multiple areas. Using a recovery capitals framework brought a practical and academic framing to structure stakeholder engagement. Based on participant feedback and using recovery capitals (recovery environments in the Wellington Region) helped to bring together distinct communities-of-practice under each environment to share ideas, build cohesive networks and collaborate. Ideally, these connections may be maintained to build stronger recovery networks for each environment. The release of the *National Disaster Resilience Strategy* by the Ministry of Civil Defence and Emergency Management in 2019 and the increasing presence of capitals frameworks in policy and legislation both locally and nationally means that this approach is in-line with current policy framing in the sector.

The workshop format allowed participants to understand the roles, responsibilities and potential contributions of other organisations and the relevance of organisational capacities and

capabilities using a disaster-recovery scenario. It also enabled participants to think about the ways everyone can collaborate across the environments to aid in recovery and how they can effectively work together now within current decision-making contexts. The findings from these workshops have informed the development of WREMO's regional recovery framework. There is considerable scope for future initiatives of this kind that raise awareness, broaden perspectives and build networks to support decision-making and recovery planning.

Regular engagement with sector partners is important to build relationships and trust and for people to work together if a major disaster strikes in the region (Doyle *et al.* 2015, Doyle & Paton 2017). This aspect is crucial when establishing recovery work plans and initiatives inclusive of region-wide stakeholders in disaster recovery. It would be useful to develop an overarching strategy that regularly engages workshop participants and other sector stakeholders in activities (e.g. discussion forums, workshops, conferences, training, online initiatives and talks). Some of these activities may already exist (e.g. conferences) and could be identified in future planning as current activities; others may need specific development.

Future activities that enhance the quality of recovery planning in the Wellington Region could be workshops that promote intra- and inter-environment collaborative discussion. Working groups should be identified for the environments consisting of stakeholders from each sector to inform recovery-based activities as part of an enduring relationship-building process. Topics could focus on specific applications of a major earthquake scenario, hazard agnostic discussions of effects or how agencies can be proactive in 'working backwards' from recovery planning to reduce risks and prepare for likely outcomes. WREMO will begin this process using periodic newsletters and providing the regional recovery framework publicly as a resource for agencies other than Civil Defence and Emergency Management to reference as well as host disaster-recovery exercises.

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### References

Aldrich DP 2012, *Building resilience*. Chicago, IL: University of Chicago Press.

Becker JS, Saunders W & Kerr J 2006, *Pre-event recovery planning for land-use in New Zealand*. GNS Science.

Cutter SL, Barnes L, Berry M, Burton C, Evans E, Tate E & Webb J 2008, *A place-based model for understanding community resilience to natural disasters*. *Global Environmental Change*, vol. 18, no. 4, pp.598–606. doi:10.1016/j.gloenvcha.2008.07.013

Doyle EEH & Paton D 2017, *Decision-making: preventing miscommunication and creating shared meaning between stakeholders*. In: *Advances in Volcanology*. Berlin (DE): Springer. doi:10.1007/11157\_2016\_31

Doyle EEH, Paton D & Johnston DM 2015, *Enhancing scientific response in a crisis: evidence-based approaches from emergency management in New Zealand*. *Journal of Applied Volcanology*, vol. 4, no. 1, pp.1–16. doi:10.1186/s13617-014-0020-8

Emery M & Flora C 2006, *Spiralling-Up: Mapping Community Transformation with Community Capitals Framework*. *Community Development*, vol. 37, no. 1, pp.19–35.

Flora CB & Flora JL 1993, *Entrepreneurial social infrastructure: A necessary ingredient*. *The Annals of the American Academy of Political and Social Science*, vol. 529, no. 1, pp.48–58.

Gilbert SW 2011, *Disaster resilience: A guide to the literature (No. NIST Special Publication 1117)*, p.125. U.S. Department of Commerce National Institute of Standards and Technology.

Ministry of Civil Defence and Emergency Management 2019, *National Disaster Resilience Strategy*. Ministry of Civil Defence and Emergency Management, New Zealand.

Miles SB 2015, *Foundations of community disaster resilience: well-being, identity, services, and capitals*, *Environmental Hazards*, vol. 14, no.2, pp.103–121. doi:10.1080/17477891.2014.999018

Vallance S 2011a, *Community, resilience and recovery: building or burning bridges?* *Lincoln Planning Review*, vol. 3, no.1, pp.4–8.

Vallance S 2011b, *Early disaster recovery: a guide for communities*. *Australasian Journal of Disaster and Trauma Studies*, vol. 2.

Ward J, Becker J & Johnston DM 2008, *Community participation in recovery planning: A case study from the 1998 Ohura flood*. *GNS Science*.

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