MINISTRY OF SOCIAL DEVELOPMENT
TE MANATŪ WHAKAHIATO ORA

Community resilience

A rapid evidence review of 'what matters' and 'what works'

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Disclaimer

The views and interpretations in this report are those of the authors and are not the official position of the Ministry of Social Development.

This rapid evidence review is a time-limited examination that draws on a limited research base.

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Executive summary

This rapid evidence review aims to determine what evidence is available about what could work, in the context of COVID-19, to strengthen community resilience in Aotearoa New Zealand in the next 3-5 years. Resilient communities are adaptable, flexible, strong, well resourced, and able to withstand adversity and grow in response to it.

About the review

The review was commissioned by the Ministry of Social Development (MSD) to inform COVID-19 response decision makers and government leaders throughout Aotearoa New Zealand – locally, in regions and in Wellington – during a time of significant and rapid challenge and change. It provides an evidence base to support all-of-Government thinking aimed at strengthening community resilience.

The scope of the evidence review was developed by MSD and refined through a workshop with the Chief Science Advisors network, facilitated by MartinJenkins. It was a time-limited examination that drew on a limited research base, including literature from Aotearoa New Zealand and around the world. The literature reviewed, much of which was disaster focused, included journal articles and grey literature. Priority was given to scholarly and peer-reviewed literature, and literature reflecting Indigenous, Māori and under-served communities' experience.

What matters for community resilience?

For the purposes of this review, the Treasury's four Living Standards Framework (LSF) capitals were used as an organising framework to ensure the review is consistent with government and policy frameworks. In the context of community resilience, this entails:

- *social capital*: connections between people and communities, access to decision makers, and policy and research communication
- *human capital*: knowledge and understanding of what's happening, education and skills development, and physical and mental health
- *financial/physical capital*: access to infrastructure, earnings/capacity to pay, and access to basic needs (shelter, food, safety)
- *natural capital*: access to recreation spaces/engaging with nature.

Cultural context, including cultural identity and understanding and mātauranga Māori and Indigenous knowledge, is also used to assess how culture interacts with community resilience across the LSF capitals. This review preceded the Treasury's planned 2021 refresh of the LSF, which will develop the framework to better reflect Māori and Pacific peoples' world views and the different ways culture contributes to wellbeing (The Treasury, 2021).

The starting point should be understanding the cultural context of different communities. To be effective and encompass all communities, community resilience efforts need to engage stakeholders at all levels and within different power structures. A generic approach to strengthening community or social capital risks leaving out particular segments of the population or reinforcing existing inequities or discrimination.

The primary focus should be on building social capital – the relationships, connections, and community participation that occurs on-the-ground between individuals and groups. These connections provide a foundation which enables people to support each other and respond to adverse events. Social capital and social connections are mostly place-based and shaped by the character and context of places.

Different types of social capital include:

- *bonding*: relationships between similar groups or immediate neighbours and families
- *bridging*: relationships between different groups, which helps expand networks and access new information and resources
- *linking*: relationships between communities and institutions or decision makers, which helps influence resource allocation and intervention.

The most resilient communities will have a mix of all three forms of social capital. Strong social capital means that communities, and the individuals within, will have pre-existing foundations for working together, and will know how to collectively identify their needs, what they need to do, and who can help.

What works for community resilience?

There are many programmes and initiatives that aim to strengthen and build community resilience in the medium and long term, but, in general, there is weak evidence of their effectiveness and efficiency. Example initiatives include progressive (social) procurement, case-managed financial counselling, leadership education programmes, social spaces, events, and forums to facilitate social cohesion, and pre-disaster planning for mitigation.

The literature and research show that what counts is the strength of social and cultural connections and the different ways connections can be formed. Successful initiatives that increase social connection adopt the following principles:

- *Community connections and engagement*: successful initiatives provide opportunities for people to connect with and be active in their communities, and support communities to understand what challenges they are facing and work out what they want to do about them.
- *Knowing what can be done, how to do it, and that it will have an impact*: communities that are engaged and trust in their ability to make a difference are more likely to take the initiative and drive change. They also need to be able to trust government and other institutions that will play a supporting role.
- *Enabling and empowering support from institutions*: communities will need to make the most of the resources – both local and government/institutional resources – that may be available. Responses need to be targeted and tailored to local needs and led by the community.

What does this mean for the role of government?

The role for central, regional, and local government is to provide the conditions for community resilience to thrive, to engage with communities, encourage bonding and bridging and linking social capital where possible, and to operate under the principles of Te Tiriti o Waitangi – partnership, participation, active protection, and redress.

Some overarching lessons for government include to:

understand community culture, context and dynamics: strengthening community resilience should start from understanding what makes local groups and institutions successful, and understanding what each local community needs (Australian Institute for Disaster Resilience, 2018; Bach et al, 2010). This includes the historical background of a community and current dynamics, including community volunteering or community activism.

enable equity in community resilience efforts: community resilience efforts should take structural inequities and the compounding impacts of COVID-19 into account. Efforts need to consider how to effectively engage and support marginalised, under-served, and under-represented populations (Cafer et al, 2019), including Māori and Pacific peoples. Careful targeting of government investments should occur, to reduce existing inequities. This could include supporting access to information in native languages, reducing inequities in digital access, or offering administrative support to remove barriers to community-led recovery (CERA, 2016b).

support community-led approaches: rather than a government-driven top-down national plan to guide community resilience, community-led approaches, supported and enabled by national, regional, and local agencies, are required to build community resilience, with communities being best placed to mobilise local resources, having local knowledge and key relationships. When power is devolved to community members and leaders, decisions will tend to have long-lasting effects (Adams-Hutcheson et al, 2019).

support connections that communities have with government (linking social capital*)*: governments at all levels should consider how existing relationships, institutions, structures, and policies enable or hinder linking social capital, and how they can best connect communities to decision makers. This includes tailored support for Māori, Pacific, and other ethnic communities. Cultural differences may lead to misunderstandings about what recovery resources are available and mistrust between response agency workers and communities (Cutter et al, 2003, as cited in Chandra et al, 2011).

consider the psychosocial context of recovery: when creating interventions and developing and maintaining relationships and partnerships, be mindful that community sentiment and the community's operating rhythm will change over time, and communities may expect that recovery will be swift and unchallenging. Realistic timeframes should be applied to any recovery planning (Chandra et al, 2011).

support monitoring and evaluation: some of the literature recommends monitoring and evaluation of community resilience initiatives, and a research

programme that sits alongside the initiatives (CERA, 2016b; National Academies of Sciences, Engineering, and Medicine, 2019). Monitoring and evaluation of community resilience initiatives should be established at the programme level.

Introduction

The scope of this review

'Community resilience' is often mentioned in relation to adverse events: the term suggests that communities need to be adaptable, flexible, strong, and well-resourced to withstand adversity and grow in response to it. Central and local government have focused on community resilience as a way to strengthen communities, particularly in the wake of the Christchurch earthquakes.

The COVID-19 pandemic has renewed interest in 'community resilience' as a key element of safeguarding and strengthening medium- to long-term wellbeing. The social impacts of COVID-19 and the economic downturn have so far been less severe than initially expected, due in part to an early and effective public health response. However, these types of events compound existing inequities. The New Zealand Attitudes and Values Study (NZAVS) assessed the effects of the COVID-19 Alert Levels between March and August 2020 and highlighted negative impacts for groups including Māori, Pacific peoples, women, disabled people, and young people (Sibley et al, 2021).

This rapid evidence review aims to determine what evidence is available about what could work, in the context of COVID-19, to strengthen community resilience in Aotearoa New Zealand in the next 3-5 years. The review was commissioned by the Ministry of Social Development (MSD) to inform COVID-19 response decision makers and government leaders throughout Aotearoa New Zealand – locally, in regions and in Wellington – during a time of significant and rapid challenge and change. It provides an evidence base to support all-of-Government thinking aimed at strengthening community resilience, focused on what matters for community resilience, and what works.

The scope of the evidence review was developed by MSD and refined through a workshop with the Chief Science Advisors network, facilitated by MartinJenkins. It was a time-limited examination that drew on a limited research base, including literature from Aotearoa New Zealand and around the world. The method used for this rapid evidence review is at Appendix 1: Method and definitions used in the evidence review.

The changing nature of community resilience

Community resilience activities change their nature over time, from immediate post-disaster relief, through to recovery phases and then longer-term community development work (Australian Institute for Disaster Resilience, 2018) (Figure 1).

Figure 1. Effect of disaster on ongoing community development and how that development interacts with relief and recovery
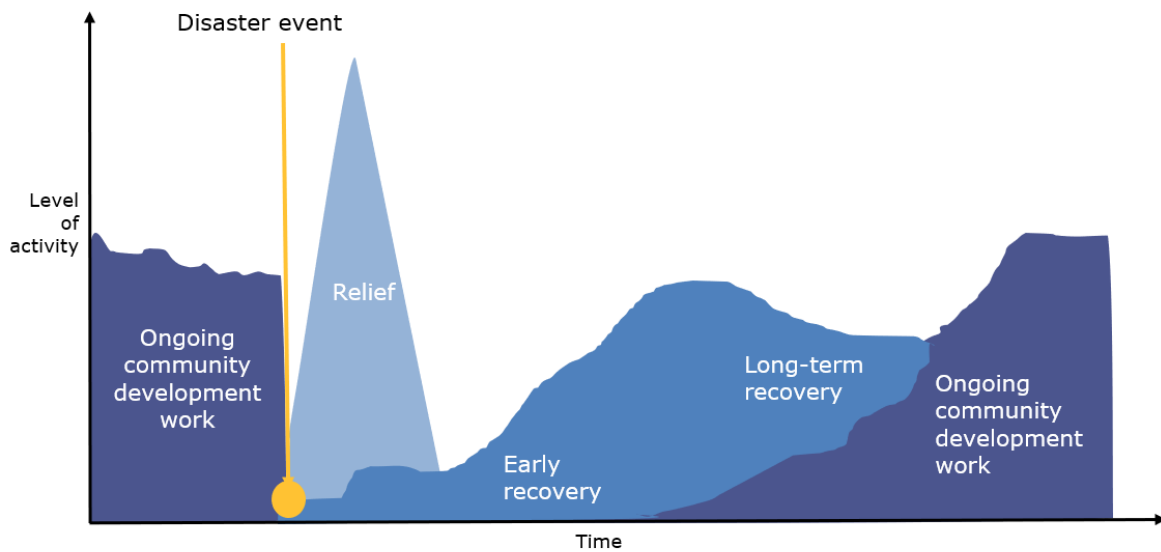
Source: Sally McKay, in *Community recovery* (Handbook 2) (Australian Institute for Disaster Resilience, 2018)

The importance of community resilience is underlined in the immediate aftermath of disaster events, as it is usually fellow citizens who are first responders or the only immediate support after a disaster occurs (Tierney, 2003; Haney, 2018). Mitigation measures to support resilience also save money, with the United States (US) Federal Emergency Management Agency (FEMA) estimating that each dollar spent on mitigation saves an average of four dollars (FEMA, 2008) while the National Institute of Building Sciences estimates six dollars (NIBS, 2017).

This review focuses on the *longer-term recovery* part of community resilience. It is acknowledged that the connection between community resilience and community development is not clear, particularly in relation to the government's role and how support should be phased in or out.

What matters and what works for community resilience?

While many programmes and initiatives exist to strengthen and build community resilience in the medium and long term, in general there is weak evidence of their effectiveness and efficiency.

The starting point should be cultural understanding. To be effective and encompass all communities, community resilience efforts need to engage stakeholders at all levels and within different power structures. A generic approach to strengthening community or social capital risks leaving out particular segments of the population or reinforcing existing inequities or discrimination. Any efforts should be informed by a needs analysis that will enable initiatives to be tailored to the specific community and its particular strengths and needs.

The primary focus should be on building social capital – the relationships, connections, and community participation that occurs on-the-ground between individuals and groups.

These connections provide a foundation that enables people to support each other and respond to adverse events. Social capital and social connections are mostly place-based and shaped by the character and context of places.

Different types of social capital include relationships between:

- similar groups or immediate neighbours and families (bonding)
- different groups, which helps expand networks and access new information and resources (bridging)
- communities and institutions or decision makers, which helps influence resource allocation and intervention (linking).

The most resilient communities will have a mix of all three forms of social capital. A strong basis of social capital means that communities, and the individuals within, will have pre-existing foundations for working together, and will know how to collectively identify their needs, know what they need to do, and who can help.

The collective adversity of pandemics has the potential to create social solidarity. A Kudos Organisational Dynamics survey of 1,000 people found that 81% of respondents thought that the coronavirus pandemic will leave behind a society that has learned good lessons about 'being in it together and being kind'. Eighty-eight percent of those surveyed believed that this sense of community would either 'continue or grow post-lockdown' (Lourens, 2020, as cited in Matthewman & Huppatz, 2020).

What does this mean for the role of government?

The role for central, regional, and local government is to provide the conditions for community resilience to thrive, to engage with communities, and encourage bonding, bridging and linking social capital where possible, and to operate under the principles of Te Tiriti o Waitangi – partnership, participation, active protection, and redress.

The Crown's obligations to protect Māori rights are derived from Te Tiriti o Waitangi and a number of international instruments for the protection of Indigenous human rights (Durie, 2011). Te Tiriti o Waitangi endorses Māori self-determination and authority, providing the foundation for community resilience for Māori, iwi and hapū, and a basis for community resilience throughout Aotearoa New Zealand.

The opportunity exists to harness the momentum to 'build back better' during COVID-19 recovery to strengthen community resilience across Aotearoa New Zealand. Careful targeting of government investments should occur to reduce existing inequities. Solutions should respond effectively to COVID-19 now, while supporting communities to respond better to future crises, from pandemics and disasters to environmental challenges (OECD, 2020; UNICEF, 2020).

The key lessons for government are that understanding community context and community dynamics is vital – communities, particularly those facing greater inequities, should be supported to identify their key priorities. The primary focus should be on social capital – the relationships, connections, and community participation that occurs on-the-ground between individuals and groups. These connections provide a foundation that enables people to support each other and to respond to adverse events.

Community resilience and 'equitable resilience'

'Community resilience', 'resilience' and 'community' are all contested terms with no widely accepted definitions for their use. Different disciplines and researchers understand the terms differently, including within Te Ao Māori.

Community resilience is not about communities enduring, tolerating, and suffering through long-term, persistent disadvantage or structural inequalities. Rather it is about coping and recovery, adaptation, or more transformative changes.

Community resilience efforts should take existing structural inequities and the differing impacts of COVID-19 into account. Efforts need to consider how to effectively engage and support marginalised populations.

Defining community resilience

Community resilience is not about communities enduring, tolerating, and suffering through long-term, persistent disadvantage or structural inequalities. Rather it is about coping and recovery (stability and bouncing back), adapting within a system (marginal adjustments), or more transformative changes (system change, bounce forward) (Adams-Hutcheson et al, 2019; Arup, 2015b) (Figure 2). Adams-Hutcheson et al (2019) warn that strategies and policies should ensure they don't focus too much simply on coping, but rather on being able to adapt or change.

Figure 2. Two dimensions of resilience: absorption and adaptability
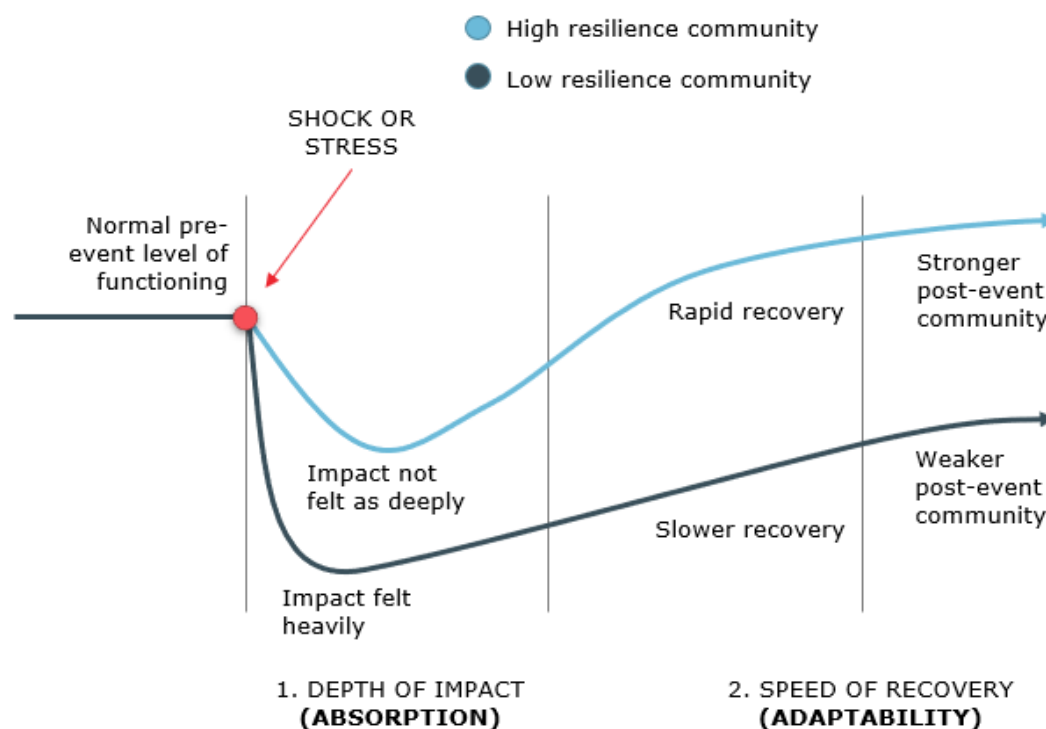
External support may focus on individuals or groups with the greatest visibility who have been deemed most deserving. These groups may have high symbolic capital, defined as standing, value, recognition and prestige. Media attention may be a strong predictor of who will gain financial aid and other forms of assistance (Lee et al, 2015). Some emerging work compares pandemics to geophysical/climatic disasters, suggesting that contagious disease being attributed to infected individuals leads to a weakening of cooperation, in comparison with disasters attributed to natural factors (Rao & Greve, 2018).

'Community' can be defined in a number of different and overlapping ways

'Community' can be defined and analysed according to size, geographical location, or connections. Sizes range from the level of whānau, friends, and neighbours, to a more macro level of communities of shared social and cultural contexts. Often it is used in relation to a specific geographic area but it can also refer to groups of individuals with common interests or affiliations (Cretney, 2013).

Differing levels of 'community' within Māori society was noted by the Families Commission review of Māori resilience in response to recessions (Baker, 2010, p. 66):

> *Resilience can be observed at the interpersonal, institutional, and structural levels within Māori society. While these levels are very much inter-related, some things occur more at the macro level (e.g., pan-Māori or multi-tribal) and others more comfortably at the micro, interpersonal level (e.g., whānau reunions). At the same time as mobilising at the institutional and structural levels, Māoridom has always mobilised at the whānau and personal level (e.g., whānau hui, tangi, reunions, unveilings, etc). The major point is that all levels feed and support each other.*

There is no *one* Pacific community, with Pacific peoples being grouped along 'ethnic, geographic, church, family, school, age/gender-based, youth/elders, island-born/New Zealand-born, occupational lines, or a mix of these' (MPP, 2018).

'Resilience' is viewed in different ways, including within Te Ao Māori

'Resilience' is a contested term. As 'resilience' is applied to different contexts and fields, including ecology, social systems, sociology, disaster research, engineering, public health, psychology and geography, it means many things to different people (Adams-Hutcheson et al, 2019; Aldrich & Meyer, 2015; Blakeley, 2016; Davidson et al, 2016; Schipper & Langston, 2015; Ziglio et al, 2017).

This review used the definition of 'resilience' in the *National Disaster Resilience Strategy | Rautaki ā-Motu Manawaroa Aituā* (New Zealand Government, 2019):

The ability to anticipate and resist the effects of a disruptive event, minimise adverse impacts, respond effectively post-event, maintain or recover functionality, and adapt in a way that allows for learning and thriving.

There is no single agreed definition of resilience for Māori and whānau (Te Puni Kōkiri, 2009, as cited in Baker, 2010). In general, the definition is not too dissimilar from Western ones, except that whānau are larger and therefore tend to be more complex. Additionally, the 'glue' that binds whānau processes and relationships is culturally derived and specific to Te Ao Māori.

Kenney and Phibbs (2014, 2015) have developed a conceptual framework for Māori resilience, as shown in Figure 3.

Figure 3. Conceptual framework for Māori resilience
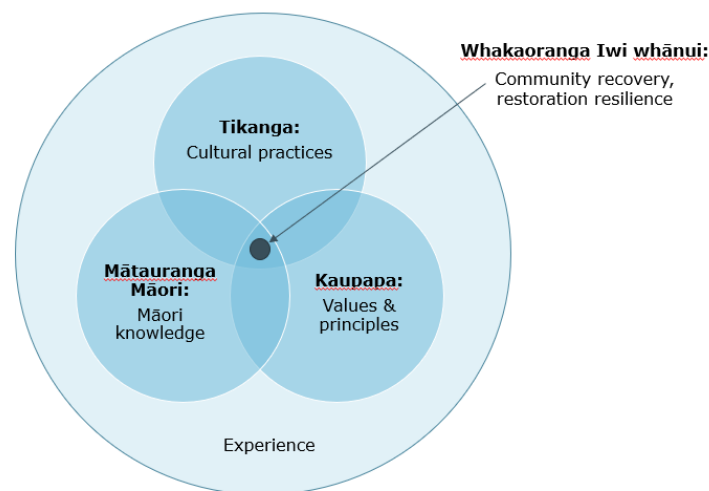
Source: Adapted from Shakes, rattles and roll outs: The untold story of Māori engagement with community recovery, social resilience and urban sustainability in Christchurch, New Zealand (Kenney & Phibbs, 2014)

Challenging structural inequities in community resilience

Usage of the term 'resilience' has attracted criticism for its failure to engage with pressing issues of equity, power imbalances and 'social vulnerability' (Matin et al, 2018). Facets of 'social vulnerability', the susceptibility of different communities' potential losses from hazard events and disasters, include ethnicity, gender, age and socio-economic status (Bergstrand et al, 2015).

In their article on Indigenous and Māori views of 'resilience', Penehira et al (2014) have a negative view of the term 'resilience'. They draw attention to resilience theories that require communities, including Māori and Indigenous communities, to accept responsibility for being disadvantaged and dispossessed. Penehira et al (2014) offer the term 'resistance', which they see as more proactive, as having greater resonance for Māori wellbeing, and aligning with Māori views on sovereignty and self-determination.

The use of the term 'vulnerable' to describe populations has been criticised by Māori and other scholars. This focus may emphasise a deficit view that specific groups lack valued

resources and human capabilities. Core cultural values related to 'Being Māori' were significant to Māori participants' earthquake recovery and resilience (Savage et al, 2018). A study of immigrants and refugees in the 2010-2011 Canterbury and Tohoku disasters found that people may be simultaneously vulnerable and resilient. They build an 'earned strength' and resilience arising both from everyday hardships and inequalities and from previous experiences of disasters such as wars, conflicts, and displacement (Uekusa & Matthewman, 2017).

Community resilience efforts should take structural inequities and the differing impacts of COVID-19 into account. Matin et al (2018, p. 202) have developed a definition of equitable resilience:

> *Equitable resilience is that form of resilience which is increasingly likely when resilience practice takes into account issues of social vulnerability and differential access to power, knowledge, and resources: it requires starting from people's own perception of their position within the human-environmental system, and it accounts for their realities and for their need for a change of circumstance to avoid imbalances of power into the future.*

The following sections highlight the likely impacts of COVID-19 on community resilience in Aotearoa New Zealand, and some key issues to consider related to community resilience, for Māori, Pacific peoples, disabled people, young people, women, older people, and those of lower socio-economic status. These groups were selected due to available evidence in the New Zealand Attitudes and Values Study (NZAVS). Other groups, including migrants and ethnic Chinese communities, have not been included due to the lack of disaggregated data available. Emerging evidence focusing on these groups includes a survey highlighting the impact of COVID-related discrimination on ethnic Chinese communities in Aotearoa New Zealand (Nielsen, 2021).

This overview may not reflect the complexity of individuals' lived experiences, particularly with regard to intersectionality – how aspects of an individual's social and political identities combine to create different modes of discrimination and privilege. This reflects in part the focus of social science research on disasters and 'vulnerable' populations, which has tended to concentrate on single demographic factors (Phillips & Morrow, 2007, as cited in Peek & Stough, 2010).

Māori

COVID-19

Impacts on Māori from the initial stages of the COVID-19 pandemic (March-August 2020) included reported increases in ethnic-based discrimination (Sibley et al, 2021).

Proactive Māori responses to COVID-19 resulted in low rates of infections. As of May 2020, approximately 8% of confirmed cases were Māori, less than half the 16.5% they make up of the resident national population. During the early lockdown, effective Māori information networks and food and resource distribution highlighted Māori mobilisation and self-responsibility, and localised self-determination (McMeeking & Savage, 2020) (see for example the work on digital inclusion by Ngāti Whātua Ōrākei's social and cultural support arm, Whai Māia, on pp. 39-40 of this review).

A common source of frustration for whānau during COVID-19 lockdowns was lack of clarity about who to go to for support (MSD, 2020b). Communities were unaware of resources and support available, people couldn't move around regions and Aotearoa New Zealand freely, and there were many unanswered calls to government agencies (MSD, 2020b). Fragmented delivery, with many services delivered by overstretched sub-contracted non-governmental organisations, also led to confusion and frustration for communities as well as service providers (Centre for Social Impact, 2020; MSD, 2020b).

Māori and resilience

Te Ao Māori values and practices align naturally with the collective action and social connections that underpin community resilience (Baker, 2010; Kenney & Phibbs, 2015). For example:

- *whakapapa and whanaungatanga* emphasise social connectedness and the dependence of the individual on the whole
- *manaakitanga* includes expectations for respect, support, and hospitality
- *marae* act as pre-existing community centres
- *kaitiakitanga* involves responsibilities for guardianship
- *kōtahitanga* underpins collective Māori responses to adverse conditions.

Pre-existing forms of family connectedness were an advantage for Māori, whānau and communities following the Christchurch earthquakes (Kenney & Phibbs, 2014), and these supported whānau resilience.

There are several important characteristics of whānau resilience, in relation to economic shocks like recessions, which are protective factors that enable whānau to cope with adversity, and it is likely that these would extend to communities (Baker, 2010):

- Access to, and maximisation of, resources
- The ability to learn from, and build on, experiences
- The presence of support networks
- Good communication within the whānau.

These protective factors are about coping rather than transformation. It is argued that these factors arose from dealing with the impacts of colonisation, dealing with overwhelming odds, and often with little institutional support (Baker, 2010).

A previous rapid evidence review by the MSD (Anderson et al, 2020) found that in Aotearoa New Zealand the effectiveness of immediate post-disaster risk mitigation strategies is impacted by tensions that arise from confusing communications, civil servants gatekeeping information and resources, culturally insensitive leadership styles, disregard for local knowledge, and little investment in relationship building with whānau, hapū and iwi who have mana whenua (Lambert & Mark-Shadbolt, 2012; Thornley et al, 2015; Kenney & Phibbs, 2015). Lessons learned from Ngāi Tahu engagement in emergency management and recovery during the Christchurch earthquakes include the capacity of mātauranga Māori to improve emergency management, and the theoretical underpinnings of mātauranga Māori as a mediator of individual and collective resilience.

Government engagement with community resilience efforts needs to consider how to effectively engage and support Māori communities. Te Pae Tata, MSD's strategy and action plan for Māori, contains three guiding principles for responding to obligations

under Te Tiriti o Waitangi: Hoatanga Rangapū (act reasonably, honourably and in good faith towards Māori), Tiakitanga (recognise and provide for Māori perspectives and values and take positive steps to ensure Māori interests are protected) and Whakaurunga (enable and support Māori to actively participate in all matters that increase wellbeing). Beneath these principles, Te Pae Tata presents three areas of focus during 2019-2022: Mana Manaaki (earn the respect and trust of Māori), Kōtahitanga (genuine partnerships for greater impact) and Kia Takatū Tātou (support Māori aspirations and long-term socio-economic development).

Pacific peoples

COVID-19

While job security rebounded at Alert Level 1, there was tentative evidence that those identifying as Pacific, Asian or another non-Māori ethnic minority group experienced poorer outcomes (Sibley et al, 2021).

During early lockdowns in Auckland, health concerns within South Auckland and among Māori and Pacific communities were relatively well managed. Communications and support were delivered through marae, churches and community organisations in tailored, culturally grounded ways, which ensured that community health concerns were eased (MSD, 2020a).

The Ministry for Pacific Peoples (MPP) researched the impact of the COVID-19 lockdown on Pacific churches and the churches' role in supporting Pacific communities. It found that churches are key partners in community resilience and recovery, and a key mechanism for developing public policy and delivering services (MPP, 2020). Pacific churches and marae were able to provide accurate, translated information, as well as access to face masks, hand sanitisers, testing stations, and kai and care packages (MSD, 2020a).

Pacific peoples and resilience

A psychometric scale of Pacific identity and wellbeing has a specific indicator on 'Pacific connectedness and belonging' and 'Perceived societal wellbeing' (Manuela & Sibley, 2015, as cited in Thomsen et al, 2018). It is important to make sure that when community members contribute to community resilience efforts they are doing this voluntarily rather than through cultural obligation (MPP, 2020).

Initiatives focusing on community resilience or recovery needs for Pacific communities could use MPP's Kapasa Pacific policy analysis tool and Yavu engagement guidelines. Kapasa encourages a strengths-based approach that draws upon the strengths and values of Pacific families and communities. It also supports understanding of common Pacific cultural values, including commitment to family, aiga (family) and kāinga (village/settlement), collectivism, reciprocity, respect, and emphasis on Christian spirituality and religious practices and on cultural customs and protocols (MPP, 2017). Yavu outlines steps to culturally responsive engagement with Pacific community groups, supporting access to information and knowledge including through understanding different communication channels to use (MPP, 2018).

Disabled people

COVID-19

While New Zealanders on the whole reported a greater sense of community across many of the Alert Levels in March-August 2020, participants with a health condition or disability were less likely to report boosts in their community connections (Sibley et al, 2021).

Disabled people and resilience

There is little research on the disaster response and recovery experiences of children or adults with disabilities (Phibbs et al, 2015; Peek & Stough, 2010), despite disproportionate impacts from disasters due to lack of inclusive planning (Roth, 2018). In Aotearoa New Zealand, interviews and questionnaires were undertaken with disabled people and disability sector employees and representatives after the Canterbury earthquakes. The research found that disabled people were more likely to be impacted, and less likely to be prepared (Phibbs et al, 2015). Individuals were also less likely to have access to the social and economic resources necessary for recovery. While individuals interviewed and surveyed wanted to be more prepared, most could not do so without support.

This research gap is particularly significant given the numbers of people who live with disability in Aotearoa New Zealand, with 26% of the Māori population identified as disabled compared to 24% of the total Aotearoa New Zealand population (ODI, 2016a). It also has broader ramifications for our ageing population, which reflects global trends of increasing numbers of people with age-related impairments (ODI, 2016b).

Any community resilience initiatives need to engage with disabled people in the community and involve people with disabilities throughout the planning process (Roth, 2018).

Young people

COVID-19

Initial impacts of COVID-19 included younger people reporting greater psychological distress during Alert Levels 3 and 2 in April-June 2020. While job security rebounded at Alert Level 1, there was tentative evidence that younger people (18-29 year olds) experienced poorer outcomes (Sibley et al, 2021).

Young people and resilience

Despite young people displaying leadership during community disasters, the needs of young people and future generations have often been marginalised in disaster planning, decision making and response (Geekiyanage et al, 2020; Vallance, 2015). The Student Volunteer Army (SVA) was established by university students in the immediate aftermath of the September 2010 Christchurch earthquake. They were initially turned away by civil defence officials, even though civil defence was unable to deal with the volume of requests to help (Banwell & Kingham, 2015). SVA mobilised volunteers online to assist with clean-up, including extensive liquefaction, and to check on the wellbeing of affected residents (Carlton & Mills, 2017; Lewis, 2013; SVA, 2020).

Research in Aotearoa New Zealand has also identified a range of risk and protective factors that impact on the wellbeing of rangatahi/youth (Dawnier et al, 2019). Lessons for government from this work include that engagement in positive life opportunities is an important protective factor, risks are perpetuated through inter-generational disadvantage, and structural inequalities are a risk to youth and community resilience.

There should be opportunities to engage children and youth and enable their leadership. In designing programmes, the principles for children and youth include (Ungar, 2011):

- Culturally relevant: match cultural values and are offered in ways that resonate with culturally embedded understanding of resilience
- Coordinated: wraparound, multiple agency support
- Continuous: services are sustained over time
- Co-located: ensures resources are more easily accessed
- Negotiated: children, youth and families help to define what services and support are needed
- Effective: services lead to sustainable wellbeing after an adverse event.

Women

COVID-19

In Aotearoa New Zealand, women reported more gender-based discrimination and psychological distress during the first Level 3 and Level 2 stages of COVID-19, April-July 2020 (Sibley et al, 2021).

Women made up the majority of those in Aotearoa New Zealand whose work declined or disappeared when the global pandemic was declared. Stats NZ reported that the seasonally adjusted number of people in employment fell by 31,000 between the March and September 2020 quarters, with over two-thirds of this number being women. Of this decrease in employed women, the majority came from tourism-characteristic industries, such as accommodation, travel agencies, sightseeing operators, and cafés/restaurants (Stats NZ, 2020).

Women and resilience

Impacts of disaster are socially patterned and women are more likely to feel the impacts of disaster socially and economically. Internationally, the closures of schools and day-care centres massively increased child-care needs and had a particularly large impact on working mothers. This contrasts to previous recessions that impacted men's employment more severely than women's employment (Alon et al, 2020).

A gender lens should be applied to efforts to support community resilience. Gender mainstreaming would improve preparedness and response efforts and mitigate post-disaster gender disparities (Enarson & Chakrabarti, 2009; Wenham et al, 2020).

Older people

COVID-19

Emerging evidence on the impact of COVID-19 on older people in Aotearoa New Zealand found that loneliness levels were elevated, with the proportion of people aged 75+ who

felt lonely at least some of the time being 21.0% in the September 2020 quarter, compared to 12.3% in 2018. These indicators were substantially higher for older women than older men (MSD, 2020c).

Older people and resilience

There are gaps in the research on the preparedness, needs and strengths of older people (Acosta et al, 2018; Cornell et al, 2012). Narratives focus on age-related deficits, such as the absence of social capital that can lead to loneliness, a pressing social issue and public health burden.

Strengths-based analysis would highlight the economic and social contribution made by many older people, such as volunteering and the 'sharing of knowledge of history, culture and skills' (Madsen et al, 2019).

Socio-economic status

COVID-19

Groups across Aotearoa New Zealand continue to face pressure due to COVID-19, in particular people aged 18-34 years, who have been severely impacted by the economic shock due to their position in the labour market, where they generally have lower skill levels and more casual jobs. There has also been an increase in the number of jobseekers aged 50 or over. Differing impacts have also been seen across sectors and regions, with substantial adjustments occurring to jobs related to tourism, such as hospitality, accommodation, and retail (MSD, 2020d).

At February 2021, there was an annual increase of 72,780 in the number of main benefit recipients, with 12% of the estimated Aotearoa New Zealand working-age population receiving a main benefit (MSD, 2021).

Socio-economic status and resilience

Much of the literature on disaster preparedness is about communities who already have the financial resources and capacity to be prepared and who can take new preparedness programmes on board. It is important to identify and target high-risk communities (Blake et al, 2017; Slemp et al, 2020). Interventions aimed at building social capital, such as volunteering or attending community events, are more difficult without a basic level of financial or economic capital. Even free or low-monetary-cost events usually incur time and travel costs that the more disadvantaged cannot necessarily afford.

Existing financial capital disparities in Aotearoa New Zealand, at individual, whānau and community levels, profoundly influence community resilience. Communities with high levels of 'vulnerable workers', defined as young workers, migrant workers and ethnic minorities, Māori, women and non-standard workers, will likely need the most support (Law Commission of Ontario, 2012; New Zealand Council of Trade Unions, 2013; TUC Commission on Vulnerable Employment, 2007).

Careful targeting of government investments should occur to ensure that inequities do not increase, and the resilience and income gap does not widen.

What matters for community resilience?

The literature identifies a range of factors that strengthen a community's overall resilience.

Community resilience is context specific, and the starting point should be understanding the cultural context. To be effective and encompass all communities, community resilience efforts need to engage stakeholders at all levels and within different power structures. A generic approach to strengthening community or social capital risks leaving out particular segments of the population or reinforcing existing inequities or discrimination.

The primary focus should be on building social capital – the relationships, connections, and community participation that occurs on-the-ground between individuals and groups. These connections provide a foundation that enables people to support each other and respond to adverse events.

These relationships and connections exist at various levels of social capital, including:

- *bonding:* relationships between similar groups or immediate neighbours and families
- *bridging:* relationships between different groups, which helps expand networks and access new information and resources
- *linking:* relationships between communities and institutions or decision makers, which helps influence resource allocation and intervention.

The most resilient communities will have a mix of all three forms of social capital. A strong basis of social capital means that communities, and the individuals within, will have pre-existing foundations for working together, and will know how to collectively identify their needs, what they need to do about it, and who can help.

For the purposes of this review, the Treasury's LSF capitals (social, human, physical/financial and natural) were used as an organising framework to ensure the review is consistent with government and policy frameworks. The LSF is used to identify the Treasury's advice about wellbeing priorities.

Cultural context – cultural identity, values, understanding and connection – is added to bring attention to how culture interacts with community resilience across the LSF capitals (Table 1). This review preceded the Treasury's planned 2021 refresh of the LSF, which aims to develop the framework to better reflect Māori and Pacific peoples' world views and the different ways culture contributes to wellbeing (The Treasury, 2021).

Table 1. Community resilience in terms of the Living Standards Framework capitals and cultural understanding

Capital	Contribution of capitals to community resilience
Cultural context	• Cultural identity and understanding • Mātauranga Māori and Indigenous knowledge • Cultural values
Social capital	• Connections between people and communities • Access to decision makers • Policy and research communication
Human capital	• Knowledge and an understanding of what is happening • Education and skills development • Physical and mental health
Financial/physical capital	• Access to infrastructure • Earnings/capacity to pay • Access to basic needs (shelter, food, safety)
Natural capital	• Access to recreation spaces/engaging with nature

The relationship between wellbeing and community resilience is complex and contested, with research suggesting that community wellbeing contributes to community resilience (McCrea et al, 2014; McCrea et al, 2015).

Western-centric approaches to measurement are likely to miss important enablers of community resilience, and data is often not available at the spatial levels that are needed (neighbourhood, community, territorial authority area and/or region). In Aotearoa New Zealand, Mason Durie's Te Pae Māhutonga model (Durie, 1999) has been mapped to the 'community capitals' framework (Ryks et al, 2018). The indicator framework discussed in that article places Māori at the centre, as a starting point for understanding community wellbeing and resilience.

See Appendix 2: Frameworks for thinking about 'community resilience' for further discussion.

Cultural context: considering the strengths and needs of diverse communities

There is a diverse range of communities in Aotearoa New Zealand, and resilience resources may be a function of history, culture, and lived experience. To be effective and encompass all communities, community resilience efforts need to engage stakeholders at all levels and within different power structures. A generic approach to strengthening community or social capital risks leaving out particular segments of the population and reinforcing existing inequities or discrimination.

Community context is key

No two communities are the same, with differing resources, including skills, employment levels, health, financial security, and overall access to physical infrastructure (Chandra et al, 2011). Rural communities have diverse stakeholders including farmers, tourism operators, and international visitors, with each having different levels of risk awareness and preparedness (Spector et al, 2019).

Communities are also not just geographical – they can concentrate around culture, ethnicity, religion, age group, or specific interest, especially with the increasing uptake of social networks. Communities may change their shape in response to a disaster and depending on their relationships with government agencies and aid organisations (Barrios, 2014). Assessing community support needs could include the historical background of a community and current dynamics, including community volunteering or community activism.

Different communities within a region, district or neighbourhood may need different interventions. The kinds of interventions will also depend on how well formed the community's existing connections and social capital are. Strengthening 'community resilience' should start from understanding what makes local groups and institutions successful, and understanding what each local community needs (Australian Institute for Disaster Resilience, 2018; Bach et al, 2010).

It is essential to consider diversity and equity, and to recognise different cultural expectations, approaches and norms (Bach et al, 2010). A community made up of homeowners is likely to have a different level of base resilience from one largely made up of renters, and a community in South Auckland is likely to have different needs from one on the West Coast. Concentration of privilege and concentrations of deprivation will generate different forms of resilience.

Cultural strengths should be appreciated; for example, whānau and support networks provide social, economic,and practical support for individuals and households. Whanaungatanga is a source of resilience for whānau and a safety net in times of need (Deloitte New Zealand & Victoria University of Wellington, 2017). Cultural differences may lead to misunderstandings about what recovery resources are available, or lead to mistrust between response agency workers and communities (Cutter et al, 2003, as cited in Chandra et al, 2011). Some communities may also mistrust government agencies and tend not to rely on them as sources of information.

Social capital: encouraging participation, with an ability to form community views

A community's ability to respond to adverse events depends on its existing social connections and networks. Most people derive their main support in an adverse event and its aftermath from relatives and friends. Those who lack these support networks are likely to be particularly vulnerable (Blakeley, 2016).

The importance of social connections and networks has been well explored in the literature. Aldrich and Meyer (2015) discuss how the concept of social capital has evolved and been increasingly connected to 'community resilience'; they show that the

ability of a community or neighbourhood to respond as a collective to stressors or shocks is based on the strength of existing social connections (Aldrich & Meyer, 2015).

Connections, relationships and networks set communities up for resilience

Social capital networks provide access to various resources during disasters, including information, aid, financial resources and child care, along with emotional and psychological support (Aldrich & Meyer, 2015). Banwell and Kingham (2015) explored the role of community after the Christchurch earthquakes, and noted the importance of social connections in driving the unofficial response, where residents used their connections to get help, often through pre-existing social media networks (Banwell & Kingham, 2015).

Social capital doesn't just provide the connections necessary for mutual support; it also helps people overcome barriers to acting collectively (Aldrich, 2017; Aldrich & Meyer, 2015; B. Pfefferbaum et al, 2017). People with strong social networks are likely to have better access to the information and support they need and are likely to recover faster (Aldrich, 2012).

Different forms of social capital are important for community resilience

The literature identifies three main forms of social capital, each of which is important for community resilience and community responses to adverse events (Aldrich, 2017; Aldrich & Meyer, 2015; B. Pfefferbaum et al, 2017).

- *Bonding* social capital: connections between similar groups, for example, neighbours and family helping each other
- *Bridging* social capital: connections between dissimilar groups
- *Linking* social capital: connections that communities have with organisations or formalised power structures that control the allocation of resources.

Bonding and *bridging* social capital can be thought of as horizontal associations across groups, while *linking* social capital is about vertical associations up and down hierarchies and power structures. These are set out in more detail in Table 2.

Table 2. Forms of social relationships

Form	Explanation	Examples in the context of resilience
Bonding (associations among similar members of a group or community)	Derives from homogeneous networks of those with similar characteristics, and reflects the close ties that build cohesion within groups	Assistance that neighbours provide each other in the aftermath of an event Higher levels of bonding social capital can translate into greater levels of trust and more widely shared norms among residents

Form	Explanation	Examples in the context of resilience
Bridging (associations among dissimilar members)	Reflects the loose associations across heterogeneous groups or networks that connect people or groups to other resources or networks with which they might not otherwise interact, thus exposing them to diversity and increasing their capacity to work together and their access to resources	Support between social groups, for example, from local social service, health, religious, business and other provider groups, broad-based coalitions, or networks in their community

Ties to social organisations provide both connection to an organisation that can provide support through institutional channels and potential informal ties to individuals who may not be accessible through bonding social capital |
| *Linking* (connections with other members, institutions, networks that have greater power or authority) | Relationships between groups and networks with other groups and networks that possess influence, power, authority or control | Connects affected groups with resources available from the government and from various support organisations and networks

Derived in part from improved knowledge about and access to available assistance

Emphasises connection between community resilience and overall resilience of a region or nation |

Source: Adapted from various sources (Aldrich & Meyer, 2015; National Academies of Sciences, Engineering, and Medicine, 2019; B. Pfefferbaum et al, 2017)

All three forms of social connections are important in enabling community resilience.

Several researchers have explored the interplay of these types of social capital following adverse events (see for example Aldrich, 2017; Aldrich & Meyer, 2015; Hawkins & Maurer, 2010). Ultimately, they show that the forms of social capital play different but complementary roles*. While *bonding* social capital provides an initial layer of connection and security, it alone may not be enough to enable people to access appropriate resources: it needs to be combined with *bridging* and *linking* social capital.

Overall, the literature suggests that:

- *bonding* social capital is important for logistical help during and immediately after an adverse event, by enabling families and neighbours to support each other
- *bridging* social capital helps people get through the immediate aftermath of an adverse event, with connections along geographical, social, cultural, and economic lines enabling people to pool resources and share information
- *linking* social capital is typically the least well-formed relationship but it is extremely valuable over the medium to longer term, as it enables needed resources to be

identified, and provides access and connection to institutions and the formal distribution of resources. Governments typically exercise linking social capital.

To be successful, communities need to be empowered and supported by central and regional institutions. Empowerment can take a variety of forms, from communities and individuals feeling that they can influence what goes on in their community (Becker et al, 2011) to more explicit arrangements for community leadership and design (Australian Institute for Disaster Resilience, 2018). Governments should provide support for community resilience efforts, by ensuring that the most impacted or marginalised communities are engaged in designing and implementing solutions (UN, 2020).

Ultimately, community resilience depends on various forms of relationships and networks – between similar groups, different groups, and communities on the one hand and between local, regional, and national power structures and resource allocators on the other.

Community participation and collective problem solving

Becker et al (2011) note that, at a community level, strengthening community resilience needs to focus on encouraging active involvement ('community participation') in community affairs and projects, and on developing the community's ability to identify and agree on collective issues and the appropriate response ('articulating problems'). These two elements are related, as active community participation that is geared towards defining and resolving problems is more likely to develop collective problem-solving skills (Becker et al, 2011).

Community participation is about people taking an active part in community life, such as giving time, money or other resources to support community activities, serving on local committees or groups or in public office, signing petitions, providing social support, participating in local or grassroots efforts, or participating in government-mandated events (e.g., attending public hearings) (Paton, 2007). The cultural basis for these activities includes the Western concept of volunteering, activity undertaken to benefit the community; mahi aroha, performed out of love, sympathy or care and through a sense of duty for whānau, hapū, iwi and other Māori individuals and groups; and alofa, for Pacific peoples the sense of compassion, empathy, love and a belief in reciprocal belonging and wellbeing that drives unpaid work (Volunteering NZ, 2020).

A review of resilience interventions showed that active participation was important to help (B. Pfefferbaum et al, 2017):

- create and increase people's awareness of issues
- instill a sense of ownership and personal investment
- foster preparedness
- increase capacity
- secure support for activities
- promote sustainable initiatives.

A key example is participatory budgeting, a democratic process in which community members decide how to spend part of a public budget.

Alongside community participation is the ability of communities to understand and identify collective needs and challenges, and to decide collectively how they want to address them. This can include discussing and defining problems at a community level and developing solutions for those problems – or identifying those problems that they won't be able to address on their own, and identifying how they might access that support (Becker et al, 2011).

This is related to bridging and linking social capital – that is, to the ability to draw on relationships and connections with external or different parties (such as other local groups), or to connect with central or regional responses.

Human capital: making the most of people's capabilities

Individual characteristics and capabilities

A number of characteristics of individuals have been shown to help improve community resilience, and these correlate with increased social capital. These characteristics are about the capability of individuals, and through them communities, to solve problems, including understanding what actions might be needed and how they should carry these out (Table 3).

Table 3. Individual characteristics

Individual characteristics	Description
Self-efficacy	Self-efficacy refers to a person's appraisal of their ability to do something about mitigating the effects of an adverse event – that is, knowledge and trust in their own abilities. People who have a higher degree of self-efficacy are more likely to prepare for disasters or other adverse effects. This has been correlated with community involvement and participation
Action coping	People's ability to solve problems in life by confronting and resolving them. Problem-focused coping describes actions taken to address the cause of a problem directly and is in contrast to emotion-focused coping, which indicates action taken to alleviate the negative emotions associated with a problem. Problem-focused coping has been found to predict resilience

Individual characteristics	Description
Outcome expectancy	The expectation of whether personal action will effectively mitigate or reduce a problem or a threat. There can be both positive and negative outcome expectancy. Developing positive outcome expectancy is linked to comprehensive communication strategies and targeting at-risk or vulnerable groups. Negative outcome expectancy can be drawn from experience and can be inter-generational
Critical awareness	The degree to which people think and talk about hazards can influence people's understanding of hazard issues, and enhance motivation and preparedness

Source: Adapted from *Building community resilience to disasters: A practical guide for the emergency management sector* (Becker et al, 2011)

MSD's rapid evidence review *The immediate and medium-term social and psychosocial impacts of COVID-19 in New Zealand* addressed effects at the individual level (Anderson et al, 2020).

Human capital can also be about understanding and drawing on the local skill base. Skills and knowledge might be particular to a local area or region, and built up over time. This might be related to leveraging natural and/or competitive advantages, for example, agriculture, horticulture, and value-added manufacturing skills that might be in rural areas or construction and engineering in areas that are prone to natural disasters, or are building residential and commercial property rapidly.

Promote effective communications and knowledge sharing

A common element in these individual capabilities is a strong degree of knowing and understanding the issues and what can be done, and a high level of confidence in one's ability to effect change. Each of these characteristics is therefore likely to be underpinned by strong and effective communications and knowledge sharing.

Communities need to know what resources are available and how to access them. Resources can be monetary, but can also include human resources (skills, knowledge, and capability), non-financial resources (food and shelter) and volunteers.

Communication on its own is not likely to be sufficient to increase individual and community preparedness and resilience. Any communications approach needs to support a wider strategy (Becker et al, 2011). Communications are important for supporting people to prepare and to connect to their communities, in shifting social norms, in raising their critical awareness (understanding the issues and what they can do about it), and in influencing their 'outcome expectancy' (demonstrating how actions will have an impact).

Communication needs to be two-way, and to be accessible to audiences in diverse situations, including through a range of mediums and in relevant languages (Australian Institute for Disaster Resilience, 2018). In Aotearoa New Zealand, COVID-19 information and advice are translated into 23 languages (Unite against COVID-19, 2021). An absence of accurate, trustworthy information can result in people seeking information through their own sources, and risks misinformation, rumour and speculation (Australian Institute for Disaster Resilience, 2018).

A single point of entry into government support and services appears to be beneficial. After the Canterbury earthquakes, MSD established the 0800 Canterbury Support Line, which provided a single point of entry to social services and information (CERA, 2016b). The service also provided referrals to free counselling services.

Psychosocial context of recovery

The psychosocial context of recovery should be considered in developing interventions and in developing and maintaining relationships and partnerships (Figure 4). Community sentiment and the community's operating rhythm will change over time. Realistic timeframes should be applied to any recovery planning (Chandra et al, 2011). The community may expect that recovery will be swift and unchallenging.

Figure 4. Psychosocial phases of (disaster) recovery
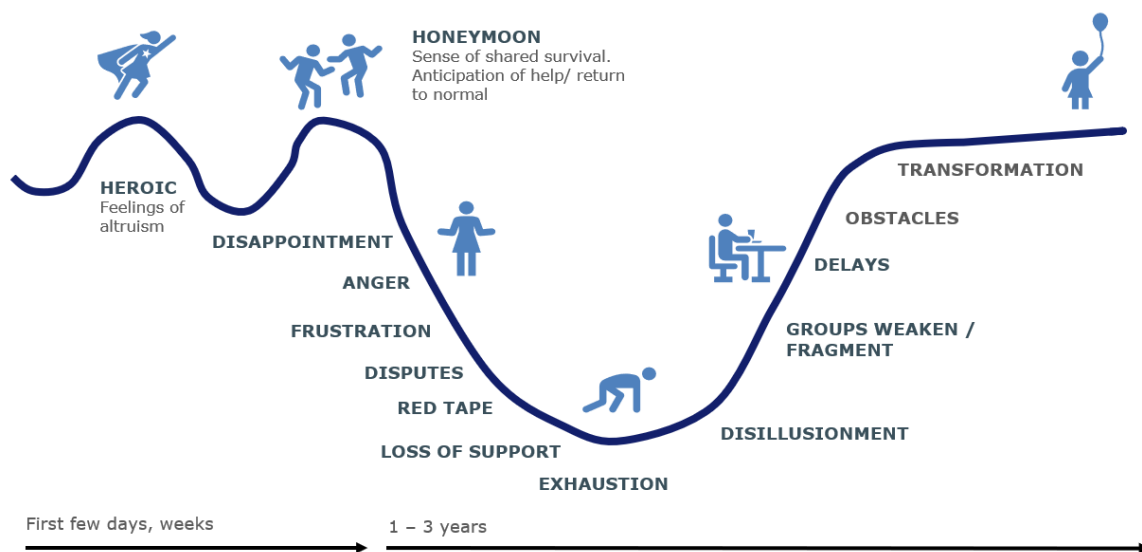
Source: Adapted from several different models of how individuals and communities might experience post-disaster recovery (Australian Institute for Disaster Resilience, 2018; CERA, 2016b; R. Cohen & Ahearn, 1980; DeWolfe, 2000)

Physical, financial, and natural capital: where connections happen

Physical, financial, and natural capital play important roles in enabling social connections to be made or through providing access to community and communication networks. Kwok et al (2018) argue that social capital and social connections are, in some form, innately place-based and shaped by the character and context of places. After a physical

disaster, the rebuilding of hard infrastructure may be prioritised over other, more difficult-to-identify community needs (Vallance, 2011).

The concept of the common 'third space' or 'bumping place' and its contribution to community has also been extensively explored in the literature. 'Bumping places' provide important opportunities for individuals to form connections with other people around them, through everyday interactions, and cultivate a sense of shared experiences and recognition and connection among residents – a key enabler of social capital and of community resilience (Banwell & Kingham, 2015; Kwok et al, 2018). Crucial connections are formed in shared spaces such as libraries, child-care centres, and churches, as well as outdoor spaces and parks (Klinenberg, 2018).

These connections can be physical or, as seen in recent COVID-19 lockdowns, virtual. Communications infrastructure is important for enabling access to virtual 'bumping places' – such as local neighbourhood social networks, social media networks, online-based learning and work, and online social events (Hunia et al, 2020). Inequities exist in digital access in Aotearoa New Zealand, with groups including Māori, Pacific peoples, people living in social housing, unemployed people, disabled people, and older members of society being less likely to have internet access (Motu, 2019) (see 'Reducing inequities in digital access can strengthen community resilience' on pp. 39-40 of this review).

What works for community resilience?

There are many programmes and initiatives that aim to strengthen and build community resilience in the medium and long term. But, in general, there is weak evidence of their effectiveness and efficiency. Example initiatives include progressive (social) procurement, case-managed financial counselling, leadership education programmes, social spaces, events, and forums to facilitate social cohesion, and pre-disaster planning for mitigation.

The literature and research show that what matters is the strength of social connections and the different ways connections can be formed. Successful initiatives that increase social connection adopt the following principles:

- *Community connections and engagement*: successful initiatives provide opportunities for people to connect with and be active in their communities, and support communities to understand what challenges they are facing and work out what they want to do about them

- *Knowing what can be done, how to do it, and that it will have an impact*: communities that are engaged and trust in their ability to make a difference are more likely to take the initiative and drive change. They also need to be able to trust government and other institutions that will play a supporting role

- *Enabling and empowering support from institutions*: governments at all levels should consider how existing relationships, institutions, structures, and policies enable or hinder linking social capital, and how they can best connect communities to decision makers. Responses need to be targeted and tailored to local needs, and led by the community.

While myriad programmes have aimed to build community resilience in the medium and long terms, on the whole evaluative evidence of their efficacy is weak. Few studies test different components of a programme in order to provide insight into what works and why, and how much the programme has increased community resilience.

Programmes and initiatives that are deemed successful in improving social connection adopt a number of general principles. These principles manifest differently across the different 'capitals'. The following sections discuss these principles and different types of initiatives in terms of the primary capital to which they relate, and it highlights the key lessons. The different capitals are colour coded to make it easier to identify them.

Much evidence tends to be descriptive and anecdotal, and many initiatives are ad hoc and highly contextual, so it can be difficult to extract what might work in Aotearoa New Zealand. The key theme from the evidence base is that what matters is the strength of social connections, the different ways connections can be formed and who those connections are with.

Initiatives that strengthen cultural understanding and connection

Community resilience resources reflect community history, culture and lived experience

Summary	Community organisations, marae, iwi, hapū, churches and mosques are critical social, organising and physical infrastructure, as illustrated in the early COVID-19 response phase (MSD, 2020a).
Lessons	Government may need to invest in building capacity and capability in this infrastructure, to ensure it can prepare for adverse events and can provide support over the medium and long term.
Examples	Marae anchor Māori identity both physically and spiritually and form the beating heart of many mana whenua and Māori communities. Marae therefore offer a range of opportunities to nurture Māori, whānau, hapū, iwi and communities (Baker, 2010).
	During the recovery from the Canterbury earthquakes, Ngāi Tahu was able to mobilise quickly around marae (Thornley et al, 2015). This response was led by the tribal chair of Te Rūnanga o Ngāi Tahu and by 18 Papatipu Rūnanga (local tribal council) leaders, based on tikanga and Te Ao Māori. Māori highlighted the key role of marae as community hubs for providing emergency support, manaakitanga and hospitality – to both Māori and non-Māori (Kenney & Phibbs, 2014; Thornley et al, 2015). Ngāi Tahu also led and partnered with migrant and refugee leaders and groups to build community resilience after the earthquakes.
	Iwi and marae have been a natural organising infrastructure after disasters and during COVID-19 (Inspiring Communities, 2020). However, that infrastructure may not be sufficient for regions like Auckland, for example, where iwi registration is relatively low and a high proportion of Māori are mataawaka – that is, they don't belong to the group with mana whenua over that area (Independent Māori Statutory Board, 2020). In those areas, interventions to increase community resilience will need to work through several different channels.
	Organisational forms for collective community action include sports and cultural clubs, kava clubs set up to coordinate and manage family remittances to the Pacific, and women's committees (Thomsen et al, 2018).
	After the Christchurch terrorist attacks, minority communities came together to work on strengthening community resilience, enable belonging and inclusion, and privilege the voices of diverse communities (Belong Aotearoa, 2019). Community representatives consistently identified racism as a key issue that affects their day-to-day lives,

opportunities, and wellbeing. Prototype ideas discussed at the hui included cultural competency training for local and central government, delivered by local communities; a one-stop shop providing migrant settlement support; support and celebration of young people exploring new cultural multi-identities; inter-cultural programmes at the neighbourhood level that promote inclusion and tackle racism.

Effective engagement and communication by government require respect and nuanced knowledge, and translation may be needed

Summary	Cultural differences may lead to misunderstandings about what recovery resources are available, or lead to mistrust between response agency workers and communities of culture (Cutter et al, 2003, as cited in Chandra et al, 2011). Some communities may also mistrust government agencies and tend not to rely on them as sources of information.
Lessons	Communication strategies and content should acknowledge community norms, beliefs, and values that shape expectations of what should be done before, during and after the adverse event (Chandra et al, 2010). This applies to the appropriateness of, for example, shaking hands and hongi. There needs to be clear guidance on gatherings, deaths, funerals and tangihanga.
	Community organisations were conduits of communication during COVID-19 responses, reaching traditionally hard-to-reach communities (MSD, 2020a). These organisations need to be considered as part of any community resilience initiative. Key messages also need to be available in many languages to meet the needs of diverse Aotearoa New Zealand (MSD, 2020a).
	Between July and November 2020, New Zealand Red Cross and the Department of Internal Affairs supported temporary visa holders who were facing hardship and could not return home. Visitor Care Manaaki Manuhiri has now been replaced by the Emergency Benefit through MSD. The Red Cross was one of many community organisations who stepped in to support community resilience in the COVID-19 response phase.
	Whānau Ora commissioning agencies played a critical role in coordinating and delivering the initial COVID-19 response. In the South Island, Te Pūtahitanga o Te Waipounamu launched the Manaaki20 campaign to inform, prepare and manaaki whānau during the pandemic response period (Savage et al, 2020). In the North Island, the Whānau Ora Commissioning Agency (2020) distributed kai, hygiene packs and masks to whānau; provided over 40 mobile clinics and CBAC testing stations across the network; re-established checkpoints; and continued to provide Whānau Ora services throughout all Alert Levels.

Aotearoa New Zealand government communications during the COVID-19 pandemic have received international plaudits (BBC News, 2020; Greive, 2020; McGuire et al, 2020). The Government strengthened community resilience by providing consistent, evidence-based information and advice through a multitude of channels. Contributing factors to success were (BBC News, 2020; McGuire et al, 2020):

- clear COVID Alert Levels and a ubiquitous campaign that used simple, with easily recognised design

- use of science-based subject-matter experts

- repetition of phrases that resonated and sparked action – such as 'Team of five million', 'Act as though you already have COVID-19', and 'Go hard, go early'.

Initiatives that strengthen social capital

Engaging with communities has to be the first step, and engaging specifically on preparedness seems to matter

Summary	To achieve community action, initiatives must engage with the community first.
Lessons	Engaging with communities to help them prepare for adverse events appears to improve community resilience, although sustaining that engagement long-term can be difficult.
	Sustaining health programmes and communication over time is also important. Individual beliefs and community norms must be considered in shaping expectations of what is to be done before, during and after an adverse event (Chandra et al, 2010). Programmes and communication often need to continue much longer than the initial response phase.
Examples	Wellington was one of the first regions in the world to facilitate Community Driven Response Plans (CDRPs) for emergency management and to specifically strengthen community resilience (Daellenbach et al, 2015). Stakeholders and community leaders were brought together to develop the plans, supported by advisors from the Wellington Region Emergency Management Office (WREMO). Case studies of two communities concluded that the biggest barrier to participation was participants' lack of time and that this resulted in the project losing momentum (Daellenbach et al, 2015). There are now hundreds of these processes across New Zealand.
	In the US, FEMA has financially supported preparedness projects since 1997, with most funding dedicated to mitigation planning. Feedback from a 2019 stakeholder engagement programme found that stakeholders wanted to see an increased emphasis on monitoring and evaluating projects. FEMA concluded that project monitoring and

evaluation could directly contribute to FEMA's mitigation goals at the federal level by aiding investment decisions (FEMA, 2020). In September 2020, that support was relaunched as the Building Resilient Infrastructure and Communities (BRIC) programme, offering project funding with ongoing evaluation attached to a series of 'Go/No-Go milestones'.

Social connectedness predicts community recovery

Summary	The literature consistently finds that strong social cohesion and networks within communities, and high levels of trust and of social capital as a whole, are strongly predictive of the trajectory of a community's response to an adverse event (Aldrich & Meyer, 2015; Alonge et al, 2019; Bach et al, 2010; Slemp et al, 2020).
Lessons	Political and economic resources flow through social networks, and social capital built up over time comes to the fore when adverse events strike. Therefore, communities where the ties are weak can be more vulnerable and could be priorities for support.
	Transparency, reciprocity, and interaction – the underlying conditions for social trust – are absent in many places. Trust is the 'glue' that holds communities together (Bach et al, 2010), and building trust and social inclusion across fragmented groups and communities can be difficult.
	Social connectedness can itself present challenges: strong ties can make it hard for newcomers to integrate and to feel trusted (The Young Foundation, 2012) and as a result there can be pockets of both high social connection and high fragmentation in the same neighbourhood.
	Simple, often low-cost, community activities and projects build and maintain a foundation for recovery (Alonge et al, 2019; Australian Institute for Disaster Resilience, 2018). These can be, for example, neighbourhood barbeques, street meetings, school activities, community recovery planning forums, social and sporting events, or virtual forums.
Examples	Key informant interviews with 36 community representatives and stakeholders in Liberian counties (for the Ebola virus disease recovery) found that strong leadership, trust among health system stakeholders, and tight bonds and sense of community and kinship were critical in facilitating collective action in recovery, and in ensuring that foreign aid was directed effectively and communities were more prepared for the future (Alonge et al, 2019). If community resilience is not strengthened, investments in physical infrastructure, technical health capabilities, and emergency preparedness skills may not produce the outcomes sought.
	In Aotearoa New Zealand, Koi Tū: the Centre for Informed Futures commented that under the COVID-19 Level 4 lockdown there were 'extremely high levels of social cohesion, expressed … by high levels of self-reported compliance with Government-issued instructions and

support for the actions taken' (Spoonley et al, 2020, p. 7). New Zealanders' placing of soft-toy bears in their front windows was a visible representation of a shared sense of purpose (Example 1).

Example 1. Teddy bears in windows

'We're going on a bear hunt. We're going to catch a big one. What a beautiful day! We're not scared.'

The nationwide lockdown due to COVID-19 did not stop communities working together to keep their children entertained. While social distancing was in force, individuals could not interact in person, but families and bubble-mates were encouraged to go on walks.

Households started putting teddy bears in their front windows so other children, while on walks with their families, could see how many they could spot – all while keeping within the rules for Alert Level 4.

Source: National and international media (Beck, 2020; Roy, 2020; Tokalau, 2020)

The Canterbury Earthquake Recovery Authority's (CERA's) Summer of Fun days are an example of strengthening community resilience through building social connections (Example 2).

Example 2. Summer of Fun, post-Christchurch earthquakes

CERA media release: Christchurch's Summer of Fun returns

More than 40 free 'Fun Days' are being put on by a number of different community organisations, churches, the YMCA and various residents' groups over the next three months, delivering a full Summer of Fun programme.

CERA is supporting groups to run, co-ordinate and promote events and a $136,000 grant from The Christchurch Earthquake Appeal Trust has ensured that communities across the city will have local, neighbourhood events to enjoy during the whole summer.

Although church groups are among those offering summer Fun Days, every event is for the whole community and about bringing people together whatever their race, religion or age.

The YMCA has supplied outdoor adventure equipment including a mobile archery set, kayaks, raft-building materials and a set of adventure-based learning equipment to a number of the community days.

Source: CERA (2012)

Build on existing social networks and social resources, and make sure initiatives are people-centred and community-led

Summary   Communities have local skills, knowledge and resources that can stand them in good stead when they need to respond to adverse conditions (Bach et al, 2010; UK Cabinet Office, 2016). This includes industrial

structure, social networks, people, social capital, communication networks and skills, and economic and local institutions (Dinh & Pearson, 2015; Rapaport et al, 2018).

Engaging with diverse stakeholders, rather than just the 'usual suspects', builds community buy-in.

Lessons	Communities that have strong social bonds and voluntary organisations that are well connected with each other fare relatively well in recovering from adverse events (Norman et al, 2012, as cited in Bidwell & Colhoun, 2013). It is widely accepted that people-centred programmes and policies empower community members and strengthen their capabilities, and that they are also positively associated with trust, accountability, and responsibility (Adams-Hutcheson et al, 2019). When analysing community needs, it is important to understand existing strengths, skills, and resources. Community engagement processes can take months or even years (National Academies of Sciences, Engineering, and Medicine, 2019).
Examples	Lyttelton's Time Bank facilitates skill sharing between community members and provides a system for organising volunteer labour (Example 3). **Example 3. Lyttelton Time Bank** After the Canterbury earthquakes, members of the Lyttelton community worked together through a local community currency programme known as the Lyttleton Time Bank. Time banking is a way of trading skills in a community. Time credits are earned by carrying out a skill (such as sewing, typing and cleaning), and the credits can be used to 'buy' someone else's time to get a service you need. Currently with 435 members, the Lyttelton Time Bank is led and run by three part-time project coordinators. The Time Bank also offers support to new and emerging time banks around Aotearoa New Zealand. Community Weaver software allows Aotearoa New Zealand communities to adapt the programme for their particular time bank use. Source: *The importance of social capital in building community resilience* (Aldrich, 2017); https://tindall.org.nz/lyttelton-time-bank/ (The Tindall Foundation, 2020) One of the key lessons from CERA's social recovery workstream was that providing back-office support removed barriers to community-led recovery (CERA, 2016b). Back-office support includes administrative support, communications and marketing, branding and event management, project management expertise, and governance and operating structures.

Collaborative, community-led partnerships based on trust are critical, and you need to be there for the long haul

Summary	A key policy challenge in supporting community resilience is that relationships between governments and communities vary (Bach et al, 2010). A consistent theme in the literature is that trust is a critical basis for building and strengthening community partnerships (Aldrich & Meyer, 2015; Bach et al, 2010; Bidwell & Colhoun, 2013; CERA, 2016b; Hole, 2009).
	Community projects and programmes need to be sustainable and maintain their momentum over time. Resourcing and support, in the form of funding, personnel and agency support, needs to be made available for the long term (de Deuge et al, 2020; Doyle et al, 2015; Fagan-Watson & Burchell, 2015).
Lessons	Research found that acknowledging past successes and failures at the outset was an essential foundation for initiatives to engage meaningfully with local groups. Governments must follow through on any commitments they make; if they don't, this creates or reinforces barriers to change (Bach et al, 2010).
Examples	CERA has identified the ideals any partnership should work towards as it seeks to address opportunities and challenges (see Table 4):

Table 4. Partnership ideals

Start well	Be proactive – build trust and work together at every stage
	Formalise strategic partnerships. Terms of Reference and/or Letters of Expectation can be useful starting points
	Partner with diverse groups and mobilise local expertise
Define	Define roles and responsibilities clearly and keep refreshing them
	Recognise diversity and promote mutual understanding
Work together	Understand the environment – frameworks, relationships, and values
	Build on existing relationships
	Keep the lines of communication open and be available
	As time passes, collaborative decision making should increase

	Source: *Walking the recovery tightrope* (CERA, 2016a)
	Bach et al (2010) compared several paired examples:
	• Hull, UK and New Orleans, US (social capital before and after flooding)
	• San Diego, US and Birmingham, UK (diversity issues related to nationality, ethnicity, religion and class)
	• Washington DC, US and Canary Wharf, London, UK (preparedness and community relations with the private sector).
	'Fair process' was mentioned by residents, advocates and government officials as a necessary precursor for self-organisation and consequent action. This study suggests that what's needed is democratic processes, community-led processes and programmes, trust, and an approach that is *with* the community rather than *for* the community (Bach et al, 2010).

Initiatives that strengthen human capital

Devolution of leadership leads to improved capability that has longer-lasting effects

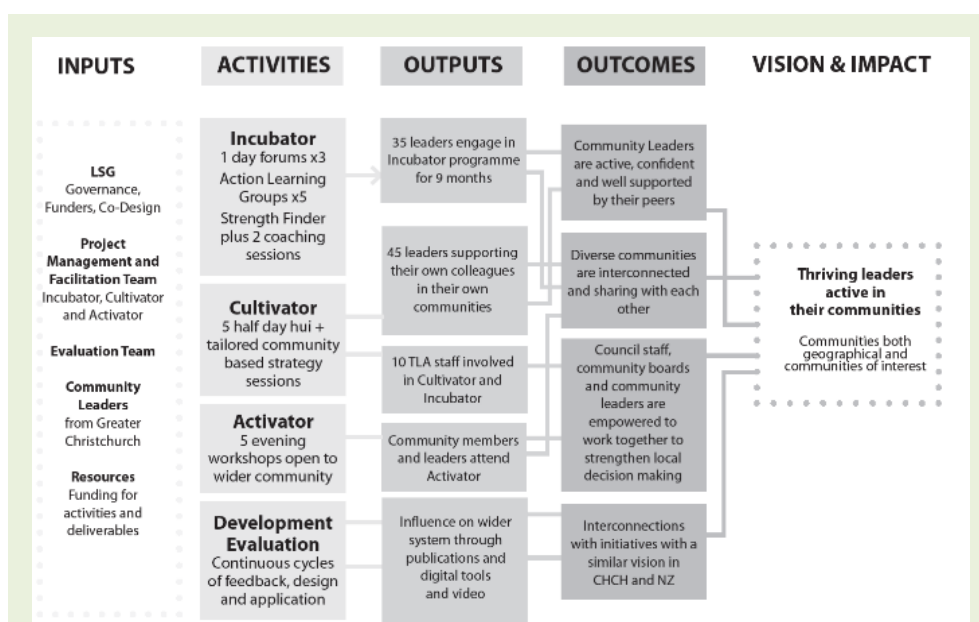| Summary	The benefits of community-led initiatives include that community buy-in will be more likely, that government will not be seen as 'taking over', and that local challenges will be met with local solutions. Two issues in the literature and policy discussion are how best to identify community leaders, and how best to improve leadership capability ahead of time.
Lessons	Leaders can emerge spontaneously, and they always need to be people who are recognised and agreed to by the community: they cannot be selected by government.
	In Canterbury, community research participants said the earthquake experience had led to stronger collaborations between community organisations, new networks and partnerships, and the emergence of new 'natural' leaders (Thornley et al, 2015).
	Leadership capability can be built through leadership education programmes.
	When power is devolved to community members and leaders, decisions will tend to have long-lasting effects (Adams-Hutcheson et al, 2019).
Examples	The CERA Community Resilience Programme included the LinC (Leadership in Community) project (CERA, 2016b) (Example 4). Developmental evaluations between 2015 and 2018 suggest that LinC is achieving its intended outcomes (Jansen & Higgins, 2019). There is evidence of increased confidence, networks, and relationships for

	participants, as well as improved knowledge, skills, and behaviours/attitudes in leadership capability.
	Participants' organisations have increased capacity and capability at the organisational level. Most importantly, communities had increased or strengthened positive collaborations and partnerships at the community level, and community projects that resulted had positive community impact.
Examples	**Example 4. The LinC Project – Leadership in Communities**
	The LinC Project started as a 10-month, strengths-based leadership programme for 40+ individuals from communities across Greater Christchurch in 2014. The second group began in December 2015, with 35 community leaders and 10 leaders from government organisations. In 2018, the LinC Project became:
	• LinC Incubator: an intensive training programme designed for people in communities wanting to develop their leadership knowledge, skills, and confidence
	• LinC Cultivator: a peer network of existing and experienced leaders designed to extend skills and confidence in growing other leaders
	• Activator: an inspirational speaker series.
	Source: http://www.lincproject.org.nz/ and *Showing up differently: A collective approach to complex issues* (Jansen & Higgins, 2019)

Progressive (social) procurement can enhance and strengthen community resilience

Summary	Progressive or 'social' procurement is an approach to procurement that moves it closer to home. Large anchor organisations from the commercial, public, or social sectors (such as local councils, universities,

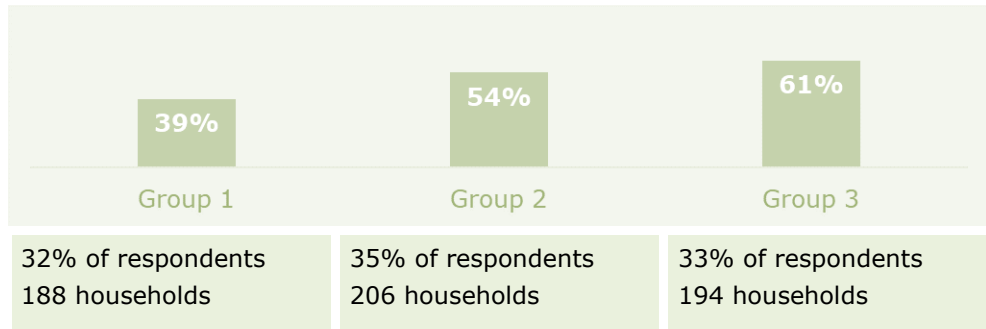|	
	schools, hospitals, and housing organisations) deliberately buy locally, so that income circulates within the community. Progressive procurement can also involve contractual clauses that seek social, environmental or cultural outcomes beyond the key goods and services being procured.
Lessons	Progressive procurement can improve economic participation for individuals and communities, and create new opportunities for social participation and for developing social capital (Barraket & Weissman, 2009). Evidence suggests that regions using progressive procurement are better placed going into a recession than other communities. 'The Preston Model', as it has been dubbed, has seen this Lancashire town rise from the bottom 20% of the UK deprivation index to be named the UK's most improved city (Leibowitz & McInroy, 2019).
Examples	In September 2020, the Aotearoa New Zealand Government introduced new rules to increase Aotearoa New Zealand businesses' access to government contracts, including creating opportunities for Māori, Pacific peoples and regional businesses and social enterprises (Minister for Economic Development, 2020; New Zealand Government Procurement, 2020). Public service and state services organisations are required to follow these rules, but they are not mandatory for local government. The Government recently consulted on extending the rules to also capture regional councils, territorial authorities, school Boards of Trustees, universities and State-owned enterprises (the consultation closed on 23 November 2020) (MBIE, 2020).
	Preston City Council in the UK was one of the first communities to trial community wealth building (CLES & Preston City Council, 2019). Before the council embedded progressive procurement, only 5% of the £750 million spent by the council and other anchor institutions was spent in Preston, and only 39% in Lancashire county, meaning that £450 million leaked out of the Lancashire economy. Subsequently, a £1.6 million council food budget was broken into lots and awarded to farmers in the region.
	Auckland Council has an annual procurement spend of more than $1 billion (Auckland Council, n.d.). Within the council, the He Waka Eke Noa programme, originally developed and delivered by The Southern Initiative, connects Māori- and Pacific-owned businesses with public, private, iwi and non-government clients and buyers wanting to buy goods, services and works. It has now been rebranded as Amotai and operates nationally.

In many cases, community resilience initiatives will be about improving the underlying capability of communities experiencing inequities, irrespective of an adverse event

Summary	Community resilience initiatives trialled often involve identifying and targeting under-served communities and strengthening their capability in order to ensure that the effects of adverse events are not felt as keenly as they would otherwise.
	For rural communities and communities that depend on a single employer or sector, a focus has been diversifying the local economy and strengthening the community's financial capability.
Lessons	Programmes can be targeted at specific communities and be designed to strengthen social and economic wellbeing, which strengthens community resilience.
Examples	After the Canterbury earthquakes, initiatives by Ngāi Tahu sought to strengthen the long-term resilience of iwi members and local Māori through addressing factors such as financial hardship, unemployment, and poor housing. Initiatives included (Kenney & Phibbs, 2014):
	• a matched savings scheme to increase the financial literacy
	• workforce development through He Toki ki te Rika | Māori Trades Training, in partnership with Ara Institute of Canterbury and Hawkins.
	In Australia, the Rural Financial Counselling Service is funded by the Department of Agriculture to build financial capability in the rural community through case management (Example 5).
	Example 5. Rural Financial Counselling Service (RFCS)
	The Department of Agriculture funds a Rural Financial Counselling Service (RFCS), which provides free financial counselling to primary producers, fishers and agriculture-dependent small rural businesses who are suffering financial hardship (created by natural disasters or long-term hardship) and have no alternative sources of assistance. The programme was originally established in 1986.
	Counsellors help clients to understand their financial position and the viability of their business, and to develop and implement plans to become financially self-sufficient. Assistance enables businesses to become more resilient against risks, or to take steps to exit the industry if they can't achieve long-term viability. Counsellors can refer clients to accountants, agricultural advisors, educational services, and mental health services.
	Source: *Rural Financial Counselling Service review 2019: Discussion paper* (Department of Agriculture, 2019b)

	Evaluations and reviews of RFCS found high levels of client satisfaction, and that the programme helps improve self-reliance and helps businesses make changes to improve their resilience (Department of Agriculture, 2019a; Glyde et al, 2009). See the *Internal review* for operational lessons that are applicable to similar programmes in Aotearoa New Zealand (Department of Agriculture, 2019a). In Aotearoa New Zealand, the NZ Farm Debt Mediation Scheme exists to support resilience (MPI, 2020).

Initiatives that strengthen physical capital

Reducing inequities in digital access can strengthen community resilience

Summary	As Aotearoa New Zealand went into Alert Level 4 lockdown, for many school and work went online. However, many communities did not have adequate access to internet and/or digital devices.
Lessons	Policy responses need to consider inequities in access to fast internet connections and digital devices within our communities.
Examples	Over April 2020, Ngāti Whātua Ōrākei's social and cultural support arm, Whai Māia, conducted an online survey of tribal whānau on the impacts of COVID-19 (Hunia et al, 2020). Participation was high, with 2,684 individuals responding, representing 589 households.

Survey respondents were separated into three priority groups representing high COVID-19 impact (group 1), medium (group 2), and low (group 3), with roughly a third of respondents in each group. Only 39% of priority group 1 had sufficient access to digital devices, compared with 54% of group 2 and 61% of group 3 (Hunia et al, 2020) (Figure 5).

Ngāti Whātua Ōrākei concluded that insufficient access to devices was likely to be a major constraint on learning in many households, particularly priority group 1 and larger households (Hunia et al, 2020). Ngāti Whātua Ōrākei subsequently distributed 400 Chromebooks among whānau in need, to support learning for those most impacted.

Figure 5. Access to digital devices, by group of respondents

Group 1	Group 2	Group 3
39%	54%	61%
32% of respondents 188 households	35% of respondents 206 households	33% of respondents 194 households

	4-5 risk factors, including:	2-3 risk factors, including:	0-2 risk factors, generally:
	- no household income - unemployed - overcrowding - rental accommodation - financial capacity uncertain - high concern about money, education, housing, and food	- doing ok pre-COVID - shock - rapid change management needed - unlikely to be employed	- self-sufficient - secure employment - connection to others important - had coping tools and mindset to manage - limited concern about money, education, food, and housing

Source: *Addressing rangatahi education: Challenges after COVID-19* (Hunia et al, 2020)

'Bumping places' perform an important function in facilitating social cohesion and connectedness

Summary	'Bumping places' are meeting places where people come together. They can be schools, shops, churches, pubs, cafés, marae, or libraries. They can also be virtual, such as pre-existing social media groups and networks, such as Facebook groups, Instagram, and WhatsApp groups (Thornley et al, 2015).
Lessons	Loss of public facilities from Christchurch earthquake damage reduced opportunities for formal and informal social interaction, as did social distancing requirements during COVID-19 Level 4 lockdowns. Communities need to consider what virtual 'bumping places' can be established or supported to increase social connectedness.
Examples	Temporary road closures within a neighbourhood can foster community resilience by increasing physical activity, social connection and community wellbeing (Kingham et al, 2020). Interviews with residents of a normally busy road in Christchurch that was temporarily closed to through-traffic found that it led to more planned and unplanned interaction with neighbours, including children and young people setting up cricket, basketball and football games in the street (Kingham et al, 2020).
	After the Canterbury earthquakes, bumping places were where people could go to talk, share information, and communicate ways of managing within and across communities (Banwell, 2017).
	Schools were key resource distribution and education hubs during COVID-19 Level 4 lockdowns (MSD, 2020a). Research in Wellington on children's knowledge on, and emotional responses to, natural disasters

| | found that learning and education at school on preparedness reduces fear and stress, and contributes to discussion with friends and family (King & Tarrant, 2013). Disaster education in schools had flow-on effects to home and community resilience. |

Infrastructure projects can help strengthen community resilience through co-design

Summary	Infrastructure can facilitate and enable social capital, but how infrastructure projects are developed and implemented is key to improving social connection.
Lessons	Infrastructure projects will strengthen social connectedness if they are co-designed by collaborative partnerships and are community centred and led.
	Failures of critical infrastructure, such as bridges, roads, water, and electricity can have major impacts on communities. Rebuilding these are an important part of long-term recovery.
Examples	Innovating Streets (Example 6), delivered by Waka Kōtahi New Zealand Transport Agency, is one example of a nationwide programme that uses co-design processes to work with communities to deliver urban re-design.
	Example 6. Innovating Streets for People
	The programme helps the sector plan, design and develop towns and cities by providing a toolkit of support options specifically targeted at retrofitting streets to reduce vehicle speeds and create more space for people. A fund of at least $7 million is available for council projects.
	Projects typically use quick, lower-cost and temporary techniques to deliver positive people-centred changes to streets. Gaining more community insight is a key part of the projects. Some of the most common Innovating Streets projects include:
	• parklets: low-risk, low-cost ways to create space for people
	• events for re-imagining streets as public space: pop-up events can be an effective way to try out a new street change
	• paint-outs, channelising: using a mix of cheap tools such as paint or planters to improve safety
	• traffic restrictions: controlling vehicle speed and who has priority, or removing traffic, to improve safety for pedestrians and cyclists
	• reallocating traffic lanes from vehicles to other uses: street space is reallocated to create social, economic and environmental benefits.
	Source: NZTA (2020)
	Kingham et al (2015) suggest that software-supported community visualisation exercises should be used in relation to the social recovery and reconstruction of Christchurch post-earthquakes. Visualising what

| | Christchurch might look like required engaging with the community to influence urban-planning decision making. |
| | In that context, geospatial software and visualisations of potential scenarios and infrastructure were specific tools that were suggested as ways to support, and feed into, collaborative planning and community resilience. |

Initiatives that strengthen financial capital

Financial resources to support community resilience should consider longer-term time horizons

Summary	Financial support and funding models for community resilience tend to incentivise shorter-term actions and projects.
Lessons	If funding models are short term, the initiatives and strategies will probably also be short term. As a result, there will not be the deeper community collaboration and engagement, and the linking with government, that are needed for more transformative change (Adams-Hutcheson et al, 2019).
Examples	Limited access to funding has flow-on effects for other initiatives and programmes. An examination of why a mental health promotion programme wasn't effective in rural Tasmania, Australia found that survey participants believed the community didn't have the resources it needed to take care of its problems (de Deuge et al, 2020).
	Evaluations of preparedness projects in the US found that they strengthened community resilience and that the social structures and projects continued when funding was removed (Holdeman & Patton, 2008; Tierney, 2000). The key element in these projects was public-private partnerships to make long-term changes in the communities' disaster profiles.
	As part of a National Science Challenge, researchers analysed resilience projects in Wellington and Christchurch using the Rockefeller 100RC City Resilience Framework. Adams-Hutcheson et al (2019) found that the way funding was structured led to short-term technical responses being favoured, such as tsunami early warning systems, stop-banks, sea-walls, and work to bolster infrastructure and protect key utilities assets. Initiatives that were more complex or needed longer-term funding tended not to be funded – for example, initiatives to address homelessness or other social justice issues.

Initiatives that strengthen natural capital

Capturing what communities need for natural environment recovery is important too

Summary	For many communities, a sense of identity and belonging is related to place, to physical geography and geographical boundaries (Banwell & Kingham, 2015), and to the natural environment around them (Banwell, 2017).
Lessons	The outdoors was also a natural 'bumping place' for communities – particularly during COVID-19 lockdowns – albeit with people keeping 2 metres apart. Access to natural bumping places like playgrounds needs to increase quickly when the area moves to a lower Alert Level.
	Good practice in building disaster-related community resilience makes a point of capturing and recording the community's needs and priorities in relation to the recovery of the natural environment (Australian Institute for Disaster Resilience, 2018). It is unclear whether any communities have undertaken this process in response to COVID-19.
Examples	A PhD thesis on planning for resilient communities after the Canterbury earthquakes found that participants from different communities within Christchurch all indicated that greenspaces and natural places were important for social connectedness (Banwell, 2017). The research, which included almost 100 interviews and 138 questionnaire responses, found that clear geographical boundaries, intimate streets (such as lanes and cul-de-sacs), and access to good-quality natural space and social infrastructure all helped strengthen and maintain social connections and a sense of place (Banwell, 2017). Parks, rivers, trees, hills, walking tracks and so on were all hubs for people to socialise and bump into neighbours. During the earthquake recovery, participants were critical of delays in allowing access to spaces because of concerns about safety.

What does this mean for the role of government?

The role for central, regional, and local government is to provide the conditions for community resilience to thrive, by engaging with communities, encouraging bonding and bridging social capital where possible, ensuring linking capital, and operating under the principles of Te Tiriti o Waitangi – partnership, participation, active protection, and redress.

Key lessons from the community resilience evidence base include:

Table 5. Lessons from the community resilience evidence base

Capital	Considerations in engaging with communities and initiative design and implementation	Principles
Cultural	• Community resilience resources reflect community history, culture and lived experience • Effective engagement and communication by government requires respect and nuanced knowledge, and translation may be needed	• Community connections and engagement • Knowing what can be done, how to do it, and that it will have an impact • Enabling and empowering support from institutions
Social	• Engaging with communities has to be the first step, and engaging specifically on preparedness seems to matter • Social connectedness predicts community recovery • Build on existing social networks and social resources, and make sure initiatives are people-centred and community-led • Collaborative, community-led partnerships based on trust are critical, and you need to be there for the long haul	
Human	• Devolution of leadership leads to improved capability that has longer-lasting effects • Progressive (social) procurement can enhance and strengthen community resilience • In many cases, community resilience initiatives will be about improving underlying capability of communities, irrespective of an adverse event	
Physical	• Reducing inequities in digital access can strengthen community resilience	

	• 'Bumping places' perform an important function in facilitating social cohesion and connectedness • Infrastructure projects can help strengthen community resilience through co-design	
Financial	• Financial resources to support community resilience should consider longer-term time horizons	
Natural	• Capturing what communities need for natural environment recovery is important too	

The main lessons for government are to:

understand community context and community dynamics: strengthening community resilience should start from understanding what makes local groups and institutions successful, and understanding what each local community needs (Australian Institute for Disaster Resilience, 2018; Bach et al, 2010). This includes the historical background of a community and current dynamics including community volunteering or community activism

enable equity in community resilience efforts: community resilience efforts should take structural inequities and the compounding impacts of COVID-19 into account. Efforts need to consider how to effectively engage and support marginalised, under-served and under-represented populations (Cafer et al, 2019), including Māori and Pacific peoples. Careful targeting of government investments should occur, to reduce existing inequities. This could include supporting access to information in native languages, reducing inequities in digital access, or offering administrative support to remove barriers to community-led recovery (CERA, 2016b)

support community-led approaches: rather than a government-driven, top-down national plan to guide community resilience, community-led approaches are required to build community resilience, with communities being best placed to mobilise local resources, having local knowledge and key relationships. Community resilience efforts are more likely to be effective if the local or community priorities and responses are supported and enabled by national and regional agencies

support connections that communities have with government (linking social capital): governments at all levels should consider how existing relationships, institutions, structures, and policies enable, or hinder, linking social capital. Governments should consider how best to connect communities to decision makers. This includes tailored support for Māori, Pacific, and other ethnic communities. Cultural differences may lead to misunderstandings about what recovery resources are available and mistrust between response agency workers and communities (Cutter et al, 2003, as cited in Chandra et al, 2011)

consider the psychosocial context of recovery: the psychosocial context of recovery should also be considered in developing interventions and in developing and maintaining relationships and partnerships (Figure 2, p. 7). Community sentiment and the community's operating rhythm will change over time. Realistic timeframes should be applied to any recovery planning (Chandra et al, 2011). The community may expect that recovery will be swift and unchallenging

support monitoring and evaluation: some of the literature also recommends monitoring and evaluation of community resilience initiatives, and a research programme that sits alongside the initiatives (CERA, 2016b; National Academies of Sciences, Engineering, and Medicine, 2019). Monitoring and evaluation systems should be established at the programme level.

Appendix 1: Method and definitions used in the evidence review

This rapid evidence review was commissioned by MSD to inform COVID-19 response decision makers and government leaders throughout Aotearoa New Zealand – locally, in regions and in Wellington – during a time of significant and rapid challenge and change. The review provides an evidence base to support a 3-5 year all-of-Government programme of work aimed at strengthening community resilience.

The scope of the evidence review was developed by MSD and refined through a workshop with the Chief Science Advisors network, facilitated by MartinJenkins.

This rapid evidence review is a time-limited examination that draws on a limited research base.

Method for literature review

The review did not undertake any new primary research, for example, surveys, interviews, or focus groups.

This review focused on what can be done to *improve* 'community resilience' rather than the 'resilience of communities'. For example, the following were out of scope: improving resilience against climate change, strengthening supply chains, or earthquake strengthening buildings.

Capital	In scope (contribution of capitals to community resilience)	Out of scope (resilience of specific assets, initiatives, capitals)
Social capital	• Connections between people and communities • Cultural identity and understanding • Access to decision makers • Policy and research communication	• Community development
Human capital	• Knowledge and understanding of what is happening • Education and skills development • Physical and mental health	• Individual financial literacy

Financial/ physical capital	• Access to infrastructure • Earnings/capacity to pay • Access to basic needs (shelter, food)	• Resilience of built environment (e.g., earthquake strengthening) • Resilience of financial markets and institutions • Resilience of supply chains
Natural capital	• Access to recreation spaces/engaging with nature	• Flood mitigation • Responding to climate change • Protection of the natural environment

The literature reviewed focused on:

- immediately available administrative and survey data about the likely impacts of COVID-19 on community resilience in Aotearoa New Zealand
- empirical evidence (both peer-reviewed and grey literature) from previous significant economic downturns or natural disasters (such as community rebuilding in the aftermath of the Christchurch earthquakes) as well as recent evidence on the social and community impacts of COVID-19 that are likely to be applicable in the current Aotearoa New Zealand context
- evidence from qualitative intelligence from community organisations gathered since the start of the pandemic, as provided by MSD and others.

Literature from 2000 and later was drawn upon. The following search terms were used in identifying relevant literature:

Aotearoa	Evaluation	Programme
Australia	Framework	Resilience
Children	Initiatives	Review
Community	Indigenous	Social resilience
Community resilience	Māori	Youth
Disability	New Zealand	
Disaster	Policy	

This review also excluded certain territories and organisations. While it is acknowledged that resilience is important for communities of Realm countries (the Cook Islands, Niue, Tokelau and the Ross Dependency) and diaspora New Zealanders (people located outside of Aotearoa New Zealand who have some connection to Aotearoa New Zealand), these groups were not included for the purposes of this rapid evidence review.

Definitions of community resilience employed

The definitions of community resilience terms used to frame the evidence gathering were:

- for community resilience, the definition adopted by the Wellington Region Emergency Management Office (2014) and the US Community and Regional Resilience Institute (CARRI, 2013):

Community resilience is the capability to anticipate risk, limit impact, and bounce back rapidly through survival, adaptability, evolution, and growth in the face of turbulent change

- for community, the definition adopted by the *National Disaster Resilience Strategy | Rautaki ā-Motu Manawaroa Aituā* (New Zealand Government, 2019):

  A group of people who:

  - live in a particular area or place ('geographic' or 'place-based' community);
  - are similar in some way ('relational' or 'population-based' community); or
  - have friendships, or a sense of having something in common ('community of interest').
  - People can belong to more than one community, and communities can be any size. With increasing use of social media and digital technologies, communities can also be virtual

- for resilience, the definition adopted by the *National Disaster Resilience Strategy | Rautaki ā-Motu Manawaroa Aituā* (New Zealand Government, 2019):

The ability to anticipate and resist the effects of a disruptive event, minimise adverse impacts, respond effectively post-event, maintain, or recover functionality, and adapt in a way that allows for learning and thriving.

Appendix 2: Frameworks for thinking about 'community resilience'

This rapid review applied the 'capitals' in the Living Standards Framework (The Treasury, 2015) to community resilience, to ensure the review was consistent with government and policy frameworks. 'Cultural understanding' is added to bring attention to how culture interacts with community resilience, both within and across the other capitals.

Alongside the strength of social connections, the literature on resilience identifies a range of specific factors that strengthen a community's overall resilience (Cretney, 2013). Different studies and frameworks below

(Table 6) are arranged by capitals.

Because of their relevance to Aotearoa New Zealand, we focus on the principles identified by Becker et al (2011) in their study for GNS Science, which drew on extensive earlier research. We supplement these with other factors as appropriate.

Table 6. Selection of principles, characteristics or qualities of community resilience frameworks

Capital		100 Resilient Cities and Cities Resilience Framework (Arup, 2015a)	Stockholm Resilience Centre (Schipper & Langston, 2015)	CCRAM (O. Cohen et al, 2013)	RAND (Chandra et al, 2011)	Practical guide to developing community resilience (NZ) (Becker et al, 2011)
Cultural understanding	**Social capital**: connections and connectivity	• Inclusiveness • Integration	• Foster complex adaptive systems thinking • Broaden participation	• Collective efficacy • Social relationship • Prepared-ness • Social trust • Place attachment	• Community participation • Pre-event engagement and planning • Access to community-strengthening resources • Partnership	• Community participation • Articulating problems • Empowerment • Trust
	Human capital: making the most of individuals	• Reflectiveness • Flexibility • Resourcefulness	• Encourage learning	• Leadership	• Education and information about preparedness and recovery • Self-sufficiency and reliance	• Self-efficacy • Action coping • Outcome expectancy • Critical awareness
	Physical / financial capital: enabling connections	• Robustness • Redundancy	• Manage connectivity • Maintain diversity and redundancy • Promote polycentric governance systems	•	• Leveraging existing resources	• Resources

Capital	100 Resilient Cities and Cities Resilience Framework (Arup, 2015a)	Stockholm Resilience Centre (Schipper & Langston, 2015)	CCRAM (O. Cohen et al, 2013)	RAND (Chandra et al, 2011)	Practical guide to developing community resilience (NZ) (Becker et al, 2011)
		• Manage slow variables and feedbacks			
Natural capital: enabling connections	• Robustness • Redundancy	• Manage connectivity • Maintain diversity and redundancy • Foster complex adaptive systems thinking	•	•	•

Community resilience can be viewed in terms of different capitals

Frameworks and measurement tools for community resilience centre on the theme of 'capitals', 'assets' or 'dimensions' of resilience (National Academies of Sciences, Engineering, and Medicine, 2019). For example, Cafer et al's (2019) 'community capitals' include human, social, cultural, political, financial, natural and built – see the left-hand diagram below, where the overlapping circles highlight the interconnected nature of the capitals (Figure 6). In the Rockefeller Foundation and Arup's (Arup, 2015a, 2015b) City Resilience Framework (the middle diagram below), there are four dimensions of resilience: health and wellbeing, economy and society, leadership and strategy, and infrastructure and ecosystems.

Figure 6. Community resilience frameworks
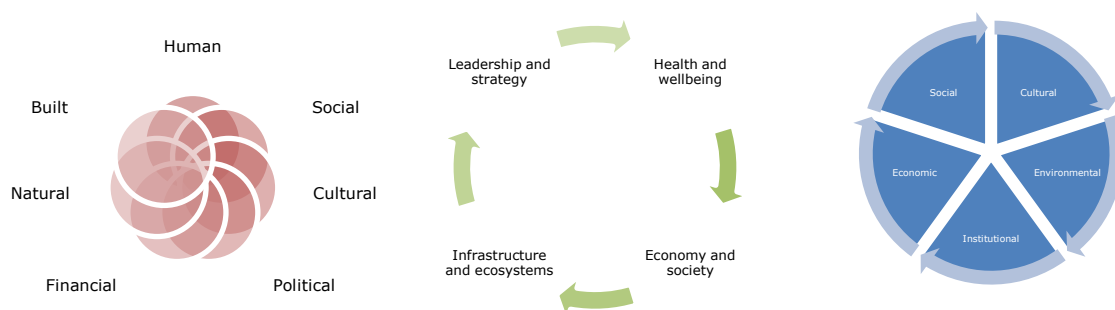
Source: Various sources (Arup, 2015b; Cafer et al, 2019; O. Cohen et al, 2013; Emery & Flora, 2006)

Indicator frameworks and measurement tools present a partial picture of community resilience

Various attempts to compare the many community resilience frameworks and measurement tools have found that 'no one size fits all' (National Academies of Sciences, Engineering, and Medicine, 2019; Schipper & Langston, 2015). With the definition of 'community' and 'resilience' contested, and the need for indicators to be based on available data and local context, no two frameworks or sets of indictors will be alike, and no single measurement tool will fit the needs of all communities.

Tools for measuring community resilience are usually indicator-based and incorporate surveys of community members

Measurement tools generally fall into two categories, with some combining both types of tools:

- **Indicator-based frameworks** (e.g., Clark-Ginsberg et al, 2020; Fielke, 2018; Kwok et al, 2018; B. Pfefferbaum et al, 2017; Sherrieb et al, 2010): one of the greatest weaknesses of measurement tools is that they are often difficult to

implement and are very resource intensive (Saja et al, 2019; Schipper & Langston, 2015). With indicator-based tools, a lot of information is needed and data is often housed in disparate agencies and organisations. There are also limits to indicators (being a mixture of proxies and perceptions), and it is very difficult to develop a set that explores all dimensions equally and cuts to the heart of the matter (Schipper & Langston, 2015)

- **Surveys of households, individuals and subject-matter experts** (e.g., O. Cohen et al, 2013; Khazai et al, 2015; Lindberg & Swearingen, 2020): these can take a lot of time and resources to administer. They also need high response rates in order for the results to be generalisable and useful.

Table 7, below, provides a sample of measurement tools for community resilience.

Table 7. Sample of community resilience measurement frameworks

Tool	Measures
Arup and the Rockefeller Foundation city resilience index	52 indicators, with 156 prompt questions with an average of 3 per sub-indicator (relies on qualitative assessments and quantitative metrics), including under collective identity and community support: • Local community support • Cohesive communities • Strong city-wide identity and culture • Actively engaged citizens
Baseline Resilience Indicators for Communities (BRIC)	Developed from the Disaster Resilience of Place (DROP) theoretical framework. Focuses on antecedent conditions, specifically inherent resilience such as existing networks, infrastructure, planning/policies and capacities to respond to and recover from disaster. BRIC has five categories of resilience: <table><tr><td>Economic resilience</td><td>• Home ownership • Employment</td></tr><tr><td>Institutional resilience</td><td>• Flood coverage • Previous disaster expenditure</td></tr><tr><td>Infrastructure resilience</td><td>• Health access • Housing type • Sheltering need</td></tr><tr><td>Community capital</td><td>• Place attachment • Political engagement • Social capital – religion • Innovation</td></tr></table>

Tool	Measures	
	Social resilience	• Age • Transportation access • Communication capacity • Preparedness
Community Assessment of Resilience Tool (CART)	CART was originally based on seven community attributes borrowed from the theory on community capacity and competence in the social psychology and public health literatures: (1) connectedness, commitment, and shared values; (2) participation; (3) support and nurturance; (4) structure, roles and responsibilities; (5) resources; (6) critical reflection and skill building; and (7) communication. Factor analysis, field testing and interviews with subject matter experts led to the seven attributes reduced to four inter-related domains that contribute to community resilience: connection and caring, resources, transformative potential, and disaster management. The CART survey contains 21 core community resilience items. Example items: • People in my neighbourhood feel like they belong to the neighbourhood • My neighbourhood has effective leaders • My neighbourhood works with organisations and agencies outside the neighbourhood to get things done • My neighbourhood actively prepares for future disasters. CART is a community assessment survey, as well as the process of using the survey and other data to (a) generate a community profile, (b) develop and refine the profile, (c) develop a strategic plan and implementation of that plan.	
Community Based Resilience Analysis (CoBRA)	Composite measure of five resilience components and an overall universal measure. The model identifies capital (skills, assets, services) and capacities (ability to respond to stress or change) as critical to building resilience. CoBRA is implemented through a series of steps to develop indicators. Indicators are formed dependent on identified non-resilient populations, and identifying which factors from the five dimensions of the sustainable livelihood frameworks (physical capital, human capital, financial capital, natural capital and social capital) should be measured and tracked. The framework focuses on encouraging local-level participation, and uses evidence gathered at the community level to determine direction. CoBRA assessment addresses a range of questions: • What the main crises or hazards affecting the communities assessed?	

Tool	Measures
	• What are the characteristics of a resilient community in that context? • To what extent has the community attained those characteristics? • What does a resilient household look like? • Which recent/ongoing factors and/or interventions have contributed to improve the resilience of some (or all) of the households in the community? • What additional interventions would further build resilience? Therefore, there is no set list of indicators to use, as they are generated dependent on the community, household or individual for which they are relevant. Data is collected via focus group discussion and key informant interviews with resilient households. Indices and indicators relied on could include the Coping Strategies Index (CSI), illness score, net debt, and Household Food Insecurity Access Scale (HFIAS).
Conjoint Community Resilience Assessment Measure (CCRAM)	Thirty-three item scale asking for perceptions regarding several aspects of the community – leadership, preparedness, collective efficacy, trust and attachment to the place. Participants are individual community members. Example questions: • My town is organised for emergency situations • The residents of my town are greatly involved in what is happening in the community. Questionnaire participants are asked to rate on a 5-point Likert scale (1-disagree, 5-very strongly agree). No reverse items exist in the CCRAM and it takes approximately 10 minutes to complete. Full questionnaire also includes questions on perceived individual and community resilience: • My personal level of resilience is high • My town's level of resilience is high.
Resilience framework, funded by the AgResearch Resilient Rural Communities Programme	Range of indicators for dimensions of: • Economic • Social • Cultural – Acknowledges the importance of Treaty of Waitangi obligations and separates this out from Social • Institutional • Environment • External – This dimension is what separates this framework from others.

Tool	Measures
	Results in an infographic similar to a radar diagram which shows how a community is performing across the dimensions.

Source: Various sources (O. Cohen et al, 2013; Fielke, 2018; Fielke et al, 2017; Leykin et al, 2013; National Academies of Sciences, Engineering, and Medicine, 2019; R. L. Pfefferbaum et al, 2013, 2016; Rapaport et al, 2018; Schipper & Langston, 2015; Singh-Peterson et al, 2014; The Rockefeller Foundation & Arup, 2015a, 2015b; UN Development Programme, 2016)

Most frameworks and tools have been developed in the context of disaster resilience, and sometimes focus on one type of disaster (e.g., floods), and it is unclear to what extent they can be applied to other adverse events (Saja et al, 2019), like pandemics. A New Zealand-based study found that measuring resilience was not helpful because the selectivity of data and measurement tended to steer initiatives toward business-as-usual rather than transformation (Adams-Hutcheson et al, 2019).

Most community resilience scales and indicators tend to be strengths based rather than focusing mainly on deficits – something that some individual health, wellbeing and resilience measurement tools have often been criticised for (Cram, 2019; Fogarty et al, 2018). Rather than focusing on, for example, depression, loneliness, stress and difficulty paying basic living costs, the measurement frameworks generally focus on perceptions of community resilience and preparedness, community participation, political engagement, and sense of belonging.

The 'unit of analysis' is another challenge, and one that researchers and governments have addressed in different ways. Survey-based tools and indicators that rely on survey data often use questionnaires that seek individuals' perceptions of community sentiment. In other cases, individual data is aggregated to reach a 'community' measure – for example, median income within a region, territorial authority area, or neighbourhood. However, aggregated measures are often poor proxies for how resources are allocated in practice and they can mask inequity. Most tools default to interviews with key informants or community leaders, who naturally have their own different biases and lenses (see *Measures for community and neighborhood research* for a good overview of the challenges of community measurement (Ohmer et al, 2018)).

A community resilience measurement tool for Aotearoa New Zealand will likely be an adaption of existing tools

The reliability and validity of existing community resilience measurement tools are mostly untested. Few have been applied more than once (to gain longitudinal data) or in more than one community (National Academies of Sciences, Engineering, and Medicine, 2019). In Aotearoa New Zealand, the resilience framework funded by AgResearch's Resilient Rural Communities Programme looks promising, and has been applied in four rural areas (Fielke et al, 2017; Kaye-Blake et al, 2019; Payne et al, 2019). However, it is unclear whether it can be adopted for urban areas, over time and in pandemic situations.

In their critical review of social resilience measurement frameworks, Saja et al (2019, p. 7) conclude that a key challenge of the discipline is a 'standard and adaptive framework that can be operationalised in any contextual setting' and be holistic in its assessment. A community may transform or adapt in unexpected ways – how might an assessment framework best capture adaptive capacities? They also go on to state that a framework for different disaster phases (pre-disaster, disaster response and post-disaster recovery phases), that guides prioritisation and implementation of community resilience characteristics, is an important research gap (Saja et al, 2019).[1]

With community resilience assessment being a relatively new and developing field, assessment could be conducted through an iterative process, with acknowledgement of the need for communities to be flexible enough to accommodate impacts of different severe scenarios (Sharifi, 2016). Measuring and monitoring community resilience will probably require the adaption of existing tools. Some issues to consider in the monitoring and evaluation of resilience are well captured by Gregorowski et al (2017, as cited in Tanner et al, 2017) (Table 8).

Table 8. Issues to consider in developing monitoring and evaluation of resilience

Issue	Description
Integration	Integration of resilience measurement into standard workflows of ongoing programmes, rather than separate monitoring and evaluation (M&E) processes
Spatial levels	Link evidence and building processes from local to national levels that inform, advise and guide resilience-building investments
Complexity	Address the issue of complex systems in M&E through connecting people who are working on innovative evaluation approaches and methods with a focus on resilience
Developing common frameworks and tools	Opportunity to develop a commonly accepted framework, tool or database to systematically generate and store evidence on resilience
Power and gender	Incorporate issues of vulnerability, power and gender effectively into resilience measurements

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[1] The researchers have developed their own measurement framework, '5S', which has five sub-dimensions of social resilience – social structure, social capital, social mechanisms, social equity and social belief. The framework has a set of 16 characteristics and 46 indicators.

Issue	Description
Large-scale investments	Establish M&E for programme-level, large-scale investments
National capacity	Build capacity of M&E practitioners in the field, for building – and strengthening – the pipeline
Measurement of transformation	Bring in effective methods for measurement of transformative capacity at levels above community, making more of the data we are collecting, and supporting more cross-fertilisation, maybe around common strategic goals
Systems-level measures	Develop systems-level indicators that measure capacities (anticipatory, adaptive and transformative) at scales greater than the household (e.g., cities)
Capacity to track large-scale changes	Apply capacities to larger scales, and measuring capacities at levels higher than household scale to determine applicability and to track changes
Systems-level resilience	Bring in data and measurement techniques that can help capture systems-level resilience, rather than simple households (noting that 'simple' is a misnomer)
Indicators of systems-level resilience	Define common indicators of resilience capacity and resilience outcomes at systems, rather than individual, levels

Source: Gregorowski et al (2017, as cited in Tanner et al, 2017)

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