National
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Challenges

**RESILIENCE
TO NATURE'S
CHALLENGES**

Kia manawaroa –
Ngā Ākina o
Te Ao Tūroa

Building resilience in transient rural communities: Guidelines for council

The social and economic wellbeing of New Zealand's rural communities is increasingly dependent on transient workers and visitors, many of whom are from overseas. New Zealand communities also face a diversity of natural hazards and building community resilience to these requires understanding local risk profiles and vulnerabilities, including those associated with transient population groups. This resource provides guidelines to assist local authorities identify and understand the transient population groups present in the communities under their remit.

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Additional research materials from the *Building resilience in transient rural communities* project:

- Wilson, J. and Simmons, D. (2017). *Building resilience in transient rural communities – a post-earthquake regional study: Scoping report*. RNC032:04:01:01. Available at https://researcharchive.lincoln.ac.nz/handle/10182/10437

- Wilson, J. and Simmons, D. (2018). *Building resilience in transient rural communities – a post-earthquake regional study: Fieldwork report*. RNC032:04:01:03. Available at https://researcharchive.lincoln.ac.nz/handle/10182/10438

- Wilson, J. and Simmons, D. (2019). *Guidelines for rural community resilience: Summary document*. Available at https://researcharchive.lincoln.ac.nz/handle/10182/10562

The full set of research materials from this project, and others undertaken via the Resilience to Nature's Challenges National Science Challenge, can be found on the RNC website (https://resiliencechallenge.nz/)

Contents

Guidelines for council

These guidelines are designed as a resource for local government and other national, regional and local organisations with an interest in rural community resilience. They were developed from a research project undertaken within the Resilience to Nature's Challenges (RNC) National Science Challenge platform (specifically, an examination of transient population groups in four communities impacted by the 2016 Kaikōura earthquake). The research findings can be extended in application to other types of natural hazard events, to other rural communities, and are also applicable in respect of developing broader community resilience (i.e., beyond that associated with recovery from natural hazard events).

The content differs from many similar resilience guidelines or 'toolkits', however, in that it specifically focuses on the rural experience and, in particular, on the transient population groups commonly found within rural communities in New Zealand. Transient population groups include new residents in a community, people working on a temporary basis, visitors, as well as those people who are simply transiting a location. These population groups contribute to local communities and economies as both producers (in that they represent an increasingly vital employment resource) and consumers (who support communities both economically and socially).

The length of time individuals are present in the community influences their familiarity with, and connectedness to, that community, and ultimately impacts on community resilience. As such, community resilience associated with transient population groups can be understood in two (interrelated) ways:

1. Resilience associated with each of the transient population groups present in the community which reflects each group's (and the individuals contained within the group) particular vulnerability
2. Resilience in respect of the whole community and the community's vulnerability as a result of both hosting and being reliant on transient population groups

Rationale

Who – Territorial Local Authorities

- Communities – which include both individuals and groups of individuals – are impacted by, and subject to, governance applicable at international, national, regional and local scales
- It is at the local scale (i.e., that of Territorial Local Authorities), however, where governance is enacted and where community resilience is addressed via mandates for ensuring community wellbeing and through Civil Defence Emergency Management (CDEM) implementation

Why – the importance of transient populations

- Communities are dynamic, with change occurring within economic, social, infrastructural, institutional and governance dimensions – understanding these changes demands consideration of transient population groups
- Transient population groups are increasingly important to local economies, and the local resource base and economy determine which transient groups might be present in a community
- Communities compete for an often limited pool of resources (including community and social services, infrastructure provision, access to funding, and transient population groups)
- Transient population groups bring their own particular set of in-group vulnerabilities to a community, and their presence represents a community vulnerability in respect of social integration and economic reliance
- These vulnerabilities are often exacerbated when a natural hazard event occurs
- Understanding vulnerability associated with transient population groups is a key step to building resilience

What – a framework for understanding transience in the community

- We propose a four category classification within which transience (and its associated vulnerability) can be framed and provide a structured set of questions (a community situation analysis) designed to raise awareness of the various transient groups found within communities.
- A community situation analysis requires understanding at the settlement/community level and takes account of each community's idiosyncrasy in respect of economic, spatial, population demographics and mobility (including social connectivity) characteristics
- New Zealand communities also face a diversity of natural hazards (GNS Science, 2019). Building community resilience to nature's challenges requires understanding local risk profiles and vulnerabilities, including those associated with transient population groups.

Content overview

In addition to the community situation analysis (describing transient population groups), these '*Guidelines for council*' contain: contextual (background) material relating to the transient rural communities research project; a review of rural communities and community resilience which integrates research findings and literature; and, a summary of research findings from a Kaikōura-specific project (undertaken by Scion) which focused on building community resilience with Māori.

The community situation analysis provides an outline of transient population groups identified within four broad 'transience' categories and a two-page resource sheet which provides a framework for examining the key characteristics, vulnerability and resilience associated with the transient population groups contained in each transience category. We have also prepared a shorter *'Guidelines for rural community resilience: Summary document'* which provides an overview of the community situation analysis. This document is available from https://researcharchive.lincoln.ac.nz/handle/10182/10562.

The '*Guidelines for Council*' conclude with an integrated summary, drawing on both the transient population and Māori resilience research, to highlight ways in which resilience to nature's challenges (in respect of transient population groups) can be improved and rural community resilience understood more broadly.

Background

This background section provides contextual material describing: national level data relating to population transience (e.g., international visitor and temporal worker arrivals, domestic mobility); the impact of the Kaikōura earthquake from a transient population perspective; and the transient rural communities research project.

Increasing transience

The social and economic wellbeing of New Zealand's rural communities is increasingly dependent on transient workers and visitors, many of whom are from overseas. Immigration data for the 2017/18 year show:

- ❖ 3,786,927 international visitor arrivals (an increase of 44% since 2012/13)[i]
- ❖ 230,259 temporary work visa applications approved (an increase of 46% since 2012/13)[ii]: 80% of these visas permitted 'open' work conditions (e.g., Working Holiday Maker (WHM) visas) and 20% were employer-assisted (e.g., Recognised Seasonal Employer (RSE) visas):
    - ❖ The RSE visa quota has increased from 9,000 (Nov 2009) to 12,850 (Nov 2018)[iii]
    - ❖ WHM numbers increased from 39,346 (YE June 2009) to 70,001 (YE June 2017)[iv]

There is also considerable domestic mobility:

- ❖ 2013 Census data show that 36% of the population had lived elsewhere in New Zealand five years previously[v]
- ❖ Accommodation data show 22,703,390 domestic guest nights (56% of total visitor nights) for the year ended Nov 2018[vi]

The Kaikōura earthquake – a transient population perspective

The 2016 Kaikōura earthquake highlighted the large number of visitors present in Kaikōura in what was considered to be a shoulder season period. While these visitors were evacuated in the days immediately following the earthquake, there were also a considerable number of WHM employed in the Kaikōura tourism sector for whom considerable uncertainly arose in respect of ongoing employment. In the months following many of these workers also departed, as visitor numbers remained low. In Kaikōura and surrounding settlements new populations of temporary workers moved in to effect repairs to infrastructure damaged by the earthquake. Post-earthquake, these two transient population groups – tourists and infrastructure workers – were given a high profile in media reports which initially described response efforts to evacuate tourists and then focused on the recovery, and on measures taken to accommodate the hundreds of temporary workers needed to effect road/rail repairs and, ultimately, facilitate the return of the tourists.

The impact of the earthquake extended beyond the Kaikōura district with rural communities in surrounding districts of Hurunui (to the south), Marlborough (to the north) and Tasman (to the northwest) also affected. There were considerable concerns around the earthquake's economic impact on individual communities and the impact of post-earthquake disruption on the multitude of transient population groups on which all of these rural communities are increasingly reliant. These include new migrants working in the dairy sector, Pacific Islanders working in horticulture and viticulture under the RSE scheme, seasonal agricultural workers, and WHM employed in the hospitality and other industry sectors. The disruption to transport links and damage to property (including commercial accommodation premises and privately owned holiday homes) had an ongoing impact on all non-working transient populations. Some communities benefitted from these post-earthquake disruptions as a result of increased economic activity resulting from earthquake recovery activities and changes in transport flow.

The research project

The research project examined rural community resilience in relation to the 2016 Kaikōura earthquake with a particular focus on the transient population groups noted above. The research was undertaken during April-May 2018, (almost 18 months after the earthquake) when affected communities were well into the recovery phase. Four case study communities were selected to represent settlement types commonly found in rural New Zealand: a service town (Blenheim); a tourist town (Kaikōura); a farming centre (Waiau); and, a national park village (St Arnaud). The communities varied in respect of social, economic and geographic features, including the presence of particular transient population groups, and earthquake impact.

Within each case study community, interviews were undertaken with individuals with broad community oversight (as a result of holding community governance or service roles) or with specific insight into one or more of the (transient) population sub-groups found in their community. A 'population transience continuum' (see page 10), developed as part of the research design, provided the framework for interviewee selection. Interview data described specific population groups and networks present in the community; ways in which the community (and the various population groups contained in it) responded to, and have recovered from, the Kaikōura earthquake; and, perceptions and understandings of resilience and of how resilience might be developed. A number of vulnerabilities and resilience challenges associated with transient populations were identified.

Similar challenges were identified in all four case study communities and included: each community's increasing socio-economic reliance on a transient workforce, and on the visitor economy; housing and accommodation pressures associated with both of these; and, a lack of appreciation for, and understanding of, these population groups within the broader community. Transience was primarily associated with the economic benefits to rural communities, with employment opportunities attracting new and temporary residents and visitors generating employment within the resident community. The involvement of business organisations in community affairs resulting from this was often not recognised. Overall, the research findings signalled a need for a resource to raise awareness of the various transient population groups found within rural communities.

Harvest party for RSE workers, Marlborough

Photo credit: Marlborough District Council

Rural communities

Many of the community challenges reported in the research (including those associated with transient population groups) are generic to rural New Zealand communities. These include *inter alia*: population decline/growth; loss of community services; changing community demographics and, in particular, the out-migration of youth and in-migration of new ethnicities; employment, housing and accommodation issues affecting economic development; and spatial/distance challenges. While technological advancements and increasing workforce mobility have, to some degree, mitigated these challenges, many rural areas are poorly serviced in respect of the first, and miss out on the benefits of the social 'people presence' in the community as a result of the second. The competition for workers (between and within regions/sectors) is an ongoing challenge and rural settlements need services to attract and keep workers.

The challenges noted above were suggested as support for a widely-held perception that 'rural' was different (to urban), with rural communities purported to be both more capable and more resilient than urban ones. A rural-urban dichotomy is also widely employed in formal population classifications, albeit based on narrow criteria. CDEM, for example, recognise that in respect of welfare requirements the rural experience/circumstance is different, noting that "In this context, 'rural communities' means farming families and primary producers" (MCDEM, 2015, p.11). Statistics New Zealand delineate rural settlements according to a number of criteria including: having a visible centre of population; an estimated resident population of between 200 and 1,000 people; and, containing at least one community or public building, such as a church, school, or shop (Stats NZ, 2017). The 'community' associated with these settlements may, however, be found in the rural surrounds (designated as 'other rural areas') and, because of economic functions, there may be close links between rural areas and small and medium urban areas (provincial towns) which house 1,000-9,999 and 10,000-29,999 residents, respectively. Provincial towns support their rural hinterlands through service provision and often also have strong rural-urban connections via the transfer of labour (as was found in the Blenheim case study).

While the four case study communities were selected to represent settlements of different sizes (containing usually resident populations of 105, 261, 1,581 and 24,975 at the 2013 Census), all four demonstrated the extended community boundaries described above. Many of the interviewees – whose selection was based on their community insight and engagement – resided outside the physical boundaries of the settlement they 'represented'. Despite their own well-grounded oversight of their community, these interviewees noted a number of community vulnerabilities associated with a widely distributed population containing spatially- and – in the case of many new migrants and transient populations – socially-isolated community members. Interviewees expressed concerns around the visibility within the wider community of many transient population groups (and the community understanding of their potential vulnerability) should a hazard event (such as the Kaikōura earthquake) occur.

Perceived differences in the visibility and understanding of transient population groups were also reported in respect of community governance. Access to many community welfare services varied by recipient group with a farm-settlement divide reported. The location of civic governance (i.e., councils) at a considerable distance from many of the communities they serve was reported to impact on their awareness of transient groups and the potential community vulnerability associated with these. CDEM (which operates alongside councils) were found to be much better informed with respect to transient population groups. In part, this reflects CDEM's 'whole community approach to civil defence' but is also a function of having CDEM representation in every community (albeit often provided by volunteers from within that community). CDEM promote individual and community resilience through readiness and risk reduction associated with potential disasters. In addition, many council websites publish information about potential natural hazards, with risk profiles often differentiated by community. Although all members of a community may be exposed to the same risks there are differences in individual levels of understanding of those risks, and in the vulnerability of individuals and groups found within the community.

Overall, the research highlighted the idiosyncratic nature of community and community experience which extended to the interaction between community and governance, and to community resilience in respect of transient population groups. Notwithstanding these differences, the challenge of remoteness (and isolation); the variations in, and complexity of, governance and community support mechanisms; and a multitude of organisational and personal relationships – between economic sectors, population groups and

individuals – emerged as common factors which impact on community resilience. As the sum of its individual members each community is represented by a unique synthesis of vulnerability, strength and resilience.

Community resilience

Resilience is a key concept in community recovery from natural hazard events and is a concern of CDEM (MCDEM, 2018, p.5) who define it as:

> *The ability to absorb 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, while mitigating the adverse impacts of future events.*

Understanding resilience requires integrated approaches which "simultaneously take account of the social, cultural, economic and environmental dimensions of the entire system", including changes within that system (Pomeroy, 2011, p.63). Changes in primary production (especially the increase in dairying and viticulture) and the growth of tourism – and the concomitant reliance on a mobile and transient (seasonal) workforce, often international in origin – have wrought significant changes to the rural population 'system'.

A complex and interrelated range of factors which enhance community and individual resilience more generally have been identified. Some factors – such as having a 'positive outlook' – have an individual focus, whilst others such as 'having a diverse and innovative economy' and 'embracing differences' are more community or group related (Hegney et al., 2008). Resilience as an individual (rather than community) attribute was widely referenced by interviewees and extended to include the identification of leaders in the community. 'Learning through adversity' (i.e., from past challenges and experiences) was perceived to contribute to building resilience within both individuals and the community more broadly, with past experience of adversity suggested as another feature particular to 'rural' communities. At the community scale, having resilient structures was also noted as an important resilience factor. The key factor contributing to community resilience, however, was 'understanding place' – being aware of who is in that place, of the connectedness and cohesion of individuals and systems, and the degree of autonomy contained within that community.

Resilience has been linked to the presence in a community of sufficient stocks of human, social, natural, produced, and institutional 'capital' (McIntosh et al., 2008) and interviewees reported aspects of each of these capitals when describing community resilience. Of the four case study communities, natural capital featured most strongly in Kaikōura, with the surrounding natural environment attracting both residents and the tourists on which the local economy had become reliant. While Hegney et al. (2008) note the importance of having 'a diverse economy', and Pomeroy (2011) referenced an 'economic dimension', the 'capitals' suggested by McIntosh et al. (2008) contain no specific reference to economic factors although their stock of human capital (which incorporates 'the knowledge, skills and health status of the population') suggests an employment component.

Importantly, the amount and stability of human capital that can be found in a location is influenced by population levels. Employment opportunities are paramount in respect of retaining a viable resident population, attracting new residents (albeit often on a temporary basis) and maintaining the local economy. This economic dimension – and particularly employment – emerged as a significant resilience factor in the rural communities studied. To a large extent, however, the resilience literature assumes a homogenous and stable rural population which takes no account of new population groups and the increasing diversity of population mobility. As Pomeroy (2011, p.80) notes, community resilience may be weakened by "difficulties adjusting to changes in labour needs and structures (increased worker mobility, more casual employment, more transient population, fewer people available for key volunteer work)".

Although exact (local) numbers are unknown, it was widely reported that transient population groups represent an increasing proportion of the population in the rural communities studied. These temporary (and new) residents – many of whom are from overseas – are less integrated with, and connected into, the community. This, in turn, impacts on the stock of social capital. Social capital concerns the ways people interact and relate, and 'social networks and support' are purported to "build a sense of community that

contributes to the resilience of individuals and groups" (Hegney et al., 2008, p.5). Social capital has a variety of forms including bonding capital (between kinship groups), bridging capital (between diverse groups), and linking capital (between community members and people in power) (McIntosh et al., 2008; Pomeroy, 2011). All three forms of social capital were reported by interviewees, although the strength of the relationships they depicted varied considerably. Broadly speaking, kinship groups were the strongest, while bridging between diverse groups was impacted by the degree of shared interests; linking capital was influenced by length of residence in the community and by the community's physical distance from council and other governance entities.

Distance from council, governance entities and social services also impacted on the community's access to produced and institutional capital. Produced capital includes the financial systems, machinery and infrastructure which help both the economy and society to function, while institutional capital relates to public and private sector and not-for-profit organisations (McIntosh et al., 2008). There are often strong links between these two forms of capital and low stocks of both contribute to community vulnerability. While most of the discussion around infrastructure vulnerability (and resilience) post-earthquake related to utility structures and systems (e.g., roading, electricity, telecommunications) a significant vulnerability was also identified in respect of each community's capacity to house or accommodate residents and visitors.

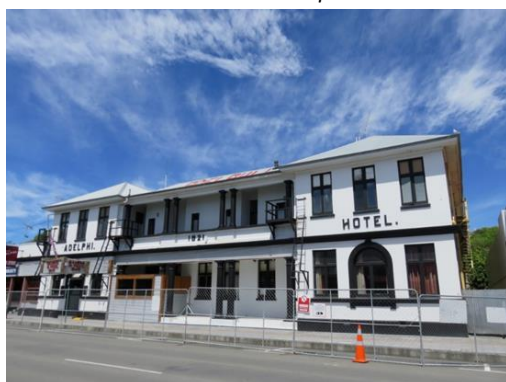*Kaikōura's Adelphi Hotel which was lost in the 2016 earthquake*

Photo credit: Jude Wilson

Kaikōura's NCTIR accommodation village, built to accommodate infrastructure workers

Photo credit: Jude Wilson

Housing/accommodation stocks can be described according to their ownership and occupation characteristics and these, in turn, impact on the length and affordability of occupation, and the population groups which use each. Housing/accommodation stocks include: private housing (which may be owner-occupied or rented); accommodation complexes (industry-owned, private commercial); holiday homes (owner-occupied, commercial rental, private rental); commercial accommodation (including formal premises such as hotels, motels, etc, and informal e.g., Airbnb); and, public facilities (e.g., DOC huts and campsites, council reserves, freedom camping sites). Housing was a significant issue in all four communities studied with some accommodation challenges exacerbated by the earthquake. Accommodation challenges, reported in respect of all transient groups, included competition between groups for available accommodation (and associated pricing/affordability issues) and a lack of suitable housing/accommodation stock. Commercial accommodation providers were identified as an important point of community 'connection' for many transient population groups.

Together, these resilience factors suggest a variety of lens by which community strengths and vulnerability can be understood. New Zealand's rural communities are evolving rapidly in the face of increasing mobility in labour, both as a factor of production and consumption. Together, transient workers and consumers, and New Zealand's rural communities' increasing reliance on them, create a major vulnerability in respect of resilience. Communities are dynamic with change occurring within economic, social, infrastructural, institutional and governance dimensions – understanding these changes demands consideration of transient population groups. To address concerns of building resilience in transient rural populations there is a paramount need to 'know one's place'. This necessitates understanding the demographic, economic, spatial and temporal characteristics of transient population groups specific to each community.

Community situation analysis

The proposed community situation analysis involves a community-scale assessment within which the transient population groups present are able to be clearly identified. This section of the guidelines provides a framework by which awareness and knowledge of transient population groups might be generated. A broad four-category transient population group classification is described, followed by an outline of a two-page framework within which each of these transient categories might be further investigated. This framework examines the transient groups present, describes potential vulnerabilities associated with their 'transience' and makes suggestions for resilience building.

Transient population groups

Transient population groups can be usefully understood according to a temporal continuum based on the length of time they are present in a community and is illustrated by the four category classification (with examples) shown below.

Permanent residents	Semi-permanent residents	Temporary residents	Transient populations
Intention to remain	6 to 12 months	2 weeks to 6 months	Less than 2 weeks
Long-term residents Māori (turangawaewae) Medium-term residents New residents (NZ) New migrants (overseas)	RSE scheme workers Secondment workers (WHM) Infrastructure workers Holiday home owners	Temporary workers Contract workers WHM Infrastructure workers (Holiday home owners)	Domestic holidaymakers International tourists Travelling workers Emergency response Transiting public

Permanent residents are defined by their 'intention to remain' (rather than their length of residence) as some groups may be relatively new members of a community. The semi-permanent and temporary population groups primarily represent people working within the community, with members of some groups (e.g., infrastructure workers such as those working on the Kaikōura earthquake rebuild and some WHM) found across both temporal categories. As a result of their habitual visitation patterns and often extended sojourns, holiday home owners are also represented in both categories. Holiday home owners may become permanent residents (often on retirement from the workforce) while for shorter visits (e.g., less than 2 weeks) their 'transience' is moderated by habitual visitation patterns and familiarity with the community. The most transient population groups may be working or travelling for work, but the majority are leisure visitors.

Each transient population group can be further described by four key dimensions:
1. Temporal: time in community (as above); frequency of visitation; previous experience of place
2. Demographic: age; family structure; language; ethnicity; culture
3. Economic: employment type; industry; location of employment
4. Spatial: type and location of dwelling; use of community, commercial and social spaces

Together, these characteristics influence both the type and degree of interaction and social connection between the various groups found within a community and the degree of in-group vulnerability. Differences occur between the transient groups whose individual members change over time (e.g., international tourists, WHM) and those which contain a stable population of individuals (e.g., new migrants, holiday home owners).

Each group's visibility, prominence and importance within the host community also varies. Interaction between the permanent host community and transient population groups may be formal and direct, via employment or commercial accommodation provision, or informal and indirect, via social activities and encounters which occur in public and commercial spaces. The various transient groups also interact with each other in the employment, housing/accommodation and social arenas.

Permanent residents

The **permanent resident** category includes long- and medium-term residents (more than one year), Māori who whakapapa to that place, new residents who may be from other parts of New Zealand (including rāwaho Māori who do not have whakapapa links) or from overseas, and who may have been resident for less than one year, but who have some intention to remain. Length of residence is impacted by access to employment and public services (e.g., education, health, technology) and by employment mobility (e.g., rural-urban exchange) practices.

Permanent residents have the broadest demographic mix (including children, people of working age and retirees) with robust population data collected via the national Census and by other national datasets (e.g., education rolls). They represent the host community to more transient groups, are often the employers of transient worker populations and the key service providers for leisure visitors. They also have the highest levels of engagement and interaction in respect of local governance and community affairs.

While commonly the largest population group in the community, permanent residents may be outnumbered by transient groups at times (e.g., small settlements which host international tourists, settlements in which a large portion of dwellings are holiday homes).

Community overview	**Connectivity**	**Population dynamics**
What permanent resident groups are found in the community?	To what extent do these groups connect within the community?	Have there been changes over time within these permanent resident population groups?
How economically and socially dependent is the community on these groups?	With whom and where do they connect?	What are the key drivers of this change?
Who knows about these groups?	Are you able to map the social connectivity of these groups within the community?	How is the community coping with this rate of change?
Potential sources to consider	**Factors to consider**	**Elements to consider**
Formal governance agencies (Education, Police, CDEM)	Industry sectors	Migration and employment trends
Local marae	Employment characteristics	Seasonal flows
Service organisations	Age, family status	Individual and group mobilities
Employment services	Ethnicity	Service provision
Industry groups	Location (work, dwelling)	Transport links
Commercial enterprises (fuel, grocery, hospitality)	Length of residence	Housing/accommodation availability
Social groups (churches, sports, local community)	In-group connections	
	Community participation	

Additional questions

How complete is your understanding of each of these groups?

What data are currently available?

Where are these data found?

Are these data readily accessible?

How often do the above data need to be updated?

Possible data sources

Census – five-yearly snapshot (data describes age, employment, previous domicile, family status, languages)

Iwi

School rolls – current, updated regularly (age, ethnicity)

Industry employment databases

Property records

Membership data relating to community and social organisations and clubs

On-line social group membership (e.g., Facebook, electronic distribution lists)

Vulnerability in the permanent resident population

Generally, a community's vulnerability can be related to its specific demographic, economic and governance characteristics. Declining population numbers and the loss of young people from the community (for education, training and employment) impacts on community facility and service provision. It can be difficult to attract new residents without these services. While changes in production (e.g., dairying) brings new migrants from overseas often the employment patterns and cultural/social interests of these new migrant populations do not align with extant community services and activities. Many rural communities rely on volunteers (for many social and emergency services) with the pool of potential volunteers impacted by an ageing resident population, the presence of increasing numbers of new migrants, and changes in workplace mobility.

Overall, a high level of community participation by the (traditional) farming community was reported, with long-term attachment, involvement in community affairs and high levels of personal autonomy perceived to be strengths. There is, however, some vulnerability around community inclusiveness: in small communities it is often the same set of people 'involved' in everything; in larger communities, the wider array of social groups present are more distinct (but can also be exclusionary).

In the absence of formal support agencies, a rural community's awareness of, and interaction with, new residents most often occurs via employers and service organisations. Natural hazard events exacerbate many of the above challenges with the host community (i.e., residents) often shouldering responsibility for both new migrants and the most transient population groups (e.g., tourists). Examples of vulnerabilities specific to the key population groups within this category are shown below.

Long-term residents	New residents (NZ)	New residents (overseas)
Some older long-standing community members no longer want to contribute (they have 'done their time')	Difficult for new community members to participate, perception that practices/systems in place cannot be changed	For new migrants there can be significant distance issues with isolation (both physical and social) a factor
Not always accepting of new migrants in the community	In small settlements newcomers are often intimidated by the established order	Cultural and language differences make community participation more challenging
Past experience of challenges perceived to be important resilience builder, but also hampers acceptance of outside help should a natural hazard event occur	May be unfamiliar with local hazard risk profile	In-group vulnerability associated with visa conditions
		Integration takes time

Building resilience in the permanent resident population

A comprehensive overview of these population groups draws on multiple sources with many available via formal governance agencies. Having a connected community (which is inclusive of all groups) was noted as being crucial in respect of resilience. Factors which impact on connectivity include those relating to demographics (particularly ethnicity), employment (e.g., industry and work patterns) and length of residence (i.e., integration takes time). While the mobility of this category is less dynamic than is the case with more transient populations, a number of temporal elements are useful to consider. New migrant flows, for example, are impacted both by industry demand and national level migration and population trends.

Resilience is improved by:
- investing in these population groups (e.g., welcome packs, welcome events)
- fostering community connections (e.g., provision of shared multi-purpose community spaces, inclusive community events)
- identification of community leaders who are able to connect both up (to governance, external organisations), across (to all of community) and down (to individual groups)

Semi-permanent residents

Semi-permanent residents are generally present in the community for six to twelve months. This group includes RSE scheme workers, secondment workers, (some) WHM, infrastructure workers and some holiday home owners. The majority of these groups are employment-focused, with length of stay determined by visa conditions. Holiday home owners are included as semi-permanent residents on the basis of their often long-standing attachment, habitual visitation patterns and status as ratepayers.

With the exception of holiday home owners, the majority of semi-permanent resident groups are of working age. Many are from overseas and represent a wide range of ethnicities. Some visa conditions allow for workers to be accompanied by family members. Many groups have strong in-group connections which are reinforced by structured employer-led pastoral care services. Social integration with individual members of the resident host community occurs through participation in church activities and (some) sports/social clubs and more broadly via community events designed to foster integration and community acceptance.

Some of these groups are significant in size, contain individual members who return on multiple occasions and are housed in purpose-built accommodation. Although present for a relatively long time, these workers commonly have no intention of – or immigration pathway to – permanent residence.

Community overview	Connectivity	Population dynamics
What semi-permanent resident groups are found in the community?	To what extent do these groups connect within the community?	Have there been changes over time within the semi-permanent resident population groups?
How economically and socially dependent is the community on these groups?	With whom and where do they connect?	What are the key drivers of this change?
Who knows about these groups?	Are you able to map the social connectivity of these groups within the community?	How is the community coping with this rate of change?
Potential sources to consider	**Factors to consider**	**Elements to consider**
Formal governance agencies (Police, CDEM, council)	Employment sector	Migration and employment trends
Employment services	Type of employment	Work visa regulations/quotas
Industry groups	Length of employment project/ contract	Seasonal flows
Commercial enterprises (fuel, grocery, hospitality)	Age, family status	Individual and group mobilities
Accommodation providers/ services	Ethnicity	Significant infrastructure development projects
Social groups (churches, sports, local community)	Location (work, dwelling)	Housing/accommodation availability
	Length of stay	Natural hazard events
	Location of permanent home	
	In-group connections	

Additional questions

How complete is your understanding of each of these groups?

What data are currently available?

Where are these data found?

Are these data readily accessible?

How often do the above data need to be updated?

Possible data sources

Industry/sector organisations

Local employer data

National level data (immigration e.g., number of work visas issued)

Council (ratepayer information, non-resident owners)

Vulnerability in the semi-permanent resident population

Semi-permanent resident population groups fall into two broad categories: those from overseas, who are subject to (and vulnerable because of) visa conditions, and New Zealand residents who maintain a 'permanent' home elsewhere. Vulnerability within these groups is influenced by familiarity with the new community (including its hazard profile), lifestyle factors (including presence of family, type of employment) and the extent of community integration (in turn, impacted by the above factors and by distance to permanent residence). Language and cultural challenges facing workers from outside New Zealand are, in part, mitigated by structured employer-led support mechanisms which manage housing and pastoral care. There is an expectation that – in the event of an emergency, or natural hazard event – this management will continue. In contrast, for those semi-permanent groups away from their usual support systems and without the resources to hand to support themselves long-term, the onus of care is perceived to lie with the host community.

Collectively, semi-permanent residents mitigate – and challenge – community vulnerability through both economic (e.g., as a vital workforce, as resident population members, and, in the case of holiday home owners, as ratepayers) and social contributions to the community. While there is often competition between communities to attract people from the semi-permanent population groups, their presence in the community also presents challenges for the host community in respect of housing and service provision. All these issues are exacerbated by natural hazard events which, in themselves, can also generate new transient population groups. Examples of vulnerabilities associated with these groups are shown below.

RSE workers	Holiday home owners	Infrastructure workers
Vulnerability associated with cultural difference In-group vulnerability moderated by structured employer-led housing and pastoral care Competition with other communities to attract	Useful to identify properties which are holiday homes (i.e., data that is easily extractable) Can be some resentment towards holiday home owners by the host community	Potential to employ some residents – but workers have to be 'fit for purpose'. May reduce employment pool for other industry sectors in community Housing/accommodation challenges for host community

Building resilience in the semi-permanent resident population

Data describing the population groups found in the semi-permanent resident category are often piecemeal. Data relating to larger and formally managed worker groups (e.g., RSE workers and those employed by NCTIR in Kaikōura) can be sourced from industry/employer groups and housing/accommodation suppliers. Holiday home data is discoverable (but not always readily accessible) via council ratepayer databases. Holiday homes represent a significant (and valuable) housing resource in respect of transient populations.

Employment characteristics (e.g., industry sector, job type, work schedules) and location of their permanent home are key factors which impact on the connectivity of these groups. In addition to seasonal flows there may be peak times at which some groups are present in the community. While many large infrastructure development projects involve long-term advance planning, those relating to hazard events – such as the Kaikōura earthquake – can occur unexpectedly and, in themselves, generate significant transient population groups. This can bring rapid change and understanding the host community helps facilitate the accommodation of, and adjustment to, new circumstances and changes in the population.

Resilience is improved by:
- understanding housing and accommodation supply/demand in relation to all groups (e.g., potential availability of holiday home housing stock via ratepayer database, local newsletter distribution lists)
- identifying the key informants for each group present in the community
- fostering between-group connections, including with the resident host population

Temporary residents

Temporary residents are present in the community for between two weeks and six months and include temporary and contract workers, WHM, infrastructure workers and holiday home owners. With the exception of holiday home owners, temporary residents are usually employment-focused and their presence in the community may be impacted by seasonal labour demand. The temporary resident category also includes people undertaking seasonal volunteer work (e.g., fieldworkers employed by the Department of Conservation (DOC)).

Leisure visitors in the temporary resident category represent a broad spread of ages and family status while workers are more often single (and younger) working age people. WHM, for example, have age conditions associated with their visas. Because they spend a relatively short length of time in the community, temporary residents often only connect with the host community in respect of service demands (e.g., for accommodation, food). Broader community connection and integration may occur in respect of repeat or habitual visitors (e.g., some seasonal workers, holiday home owners). Habitual visitation is also a feature of the holiday home owner group. There may be some in-group and between-group connection as a result of shared accommodation.

Temporary residents use a wide variety of housing/accommodation and, as a result, may be spatially dispersed in the community. As individuals, many temporary residents have close engagement with members of the host community via employment or accommodation, but overall there can be low awareness of the array and number of temporary residents present in the community at any given time.

Community overview	**Connectivity**	**Population dynamics**
What temporary resident groups are found in the community?	To what extent do these groups connect within the community?	Have there been changes over time within the temporary resident population groups?
How economically and socially dependent is the community on these groups?	With whom and where do they connect?	What are the key drivers of this change?
Who knows about these groups?	Are you able to map the social connectivity of these groups within the community?	How is the community coping with this rate of change?
Potential sources to consider	**Factors to consider**	**Elements to consider**
Formal governance agencies (Police, CDEM, council)	Employment sector	Seasonal flows
Employers	Jobs	Individual and group mobilities
Employment services	Age, family	Migration and employment trends
Industry groups	Ethnicity	Housing/accommodation availability
Commercial enterprises (fuel, grocery, hospitality)	Location (work, dwelling)	Natural hazard events
Social groups (churches, sports, local community)	Length of stay	
	In-group connections	

Additional questions

How complete is your understanding of each of these groups?

What data are currently available?

Where are these data found?

Are these data readily accessible?

How often do the above data need to be updated?

Possible data sources

Industry/sector organisations (e.g., Dairy NZ, RTO, HortNZ)

Local employers

Regional /local contractors

Council (ratepayer information, non-resident owners)

National level data (immigration, visa data)

Vulnerability in the temporary resident population

The temporary resident category contains population groups who, as workers, represent a diverse range of occupation and industry sectors and, as leisure visitors, may have at least some familiarity with place as a result of habitual visit patterns. The location of their permanent home influences both the visit behaviour (and visit frequency) of holiday home and other leisure visitors, and the propensity for temporary workers to remain in situ outside work schedules. Temporary residents from overseas are potentially more vulnerable, although even those from other parts of New Zealand may be unfamiliar with the local hazard profile.

Collectively, temporary residents represent an important workforce with many communities competing to attract and retain seasonal and temporary workers. These issues are exacerbated by housing and transport challenges associated with temporary workers, particularly in respect of the international WHM population upon whom many rural communities are increasingly reliant. The attractiveness of a sojourn in smaller rural communities can sometimes be an issue and the WHM population represents an unpredictable workforce, as their visa conditions permit flexible employment (i.e., by industry, occupation and location). This flexibility also makes them more mobile – and likely to be lost to the community – in the event of natural hazard events. Examples of these vulnerabilities are shown below.

WHM	Temporary/seasonal workers	Leisure visitors
WHM less constrained by visa conditions, but also more mobile as a result Minimal oversight of WHM in situ compared with other temporary workers Many community events and activities don't suit work schedules	Potential to be less vulnerable as they habitually visit that location, or because they are used to being temporary in the community Often work longer hours than is normal – or might be working in more isolated locations (e.g., DOC volunteers)	Holiday homes may be used as rental properties and those people less familiar with place Some visitor groups fall outside formal/commercial systems

Building resilience in the temporary resident population

Overall, data on the number of temporary residents present in the community is minimal. As a result of the diversity of temporary residents and their more individualistic – and widely dispersed – presence in the community they are more likely encountered by individual employers, accommodation providers and commercial businesses. Individuals staying for longer periods in the community may connect with extant community services and social events (e.g., joining local gyms and sport clubs, frequenting local bars) although this is strongly impacted by employment schedules.

Understanding seasonal flows – and the in-community capacity to host these people – is especially important in respect of the more mobile temporary resident population groups. Understanding particular vulnerabilities (i.e., language, isolation, unfamiliarity with local hazard profiles) is also important.

Resilience is improved by:
- raising awareness of the location of individuals living/staying temporarily in the community
- awareness of the assistance provided by employers
- recognising the importance temporary population groups (such as the WHM) and investing in these populations (e.g., welcome packs, provision of suitable entertainments, schedule events to accommodate employment schedules, make facilities available)

Transient populations

Transient populations, represented by people present in the community for less than two weeks, include a range of leisure visitors (both domestic and international), workers in situ for a limited time (e.g., sales representatives, technicians, maintenance and repair specialists), and others who are simply transiting a community. Some individuals and groups described in the temporary resident category stay for shorter periods of time and are more usefully considered as transient populations.

All age groups and ethnicities are represented in this transience category. They can be widely dispersed in the community and demonstrate variable engagement with commercial sectors. Some visitor groups may have strong in-group connections (e.g., freedom campers, backpackers who undertake volunteer experiences) or have strong place attachment as a result of frequent and habitual visitation patterns, although these groups may have limited engagement with the host population.

A considerable number of people (especially tourists) are represented by the transient population category and they may outnumber the host population on occasion. While tourism is of considerable economic importance to many communities its growth presents employment and housing/accommodation challenges to host communities. Transient population groups represent the most dynamic (in terms of their length of stay in the community and population movements more generally) of the four population categories.

Community overview	**Connectivity**	**Population dynamics**
What transient population groups are found in the community?	To what extent do these groups connect within the community?	Have there been changes over time within these transient population groups?
How economically and socially dependent is the community on these groups?	With whom and where do they connect?	What are the key drivers of this change?
Who knows about these groups?	Are you able to map the economic and social connectivity of these groups within the community?	How is the community coping with this rate of change?
Potential sources to consider	**Factors to consider**	**Elements to consider**
Formal governance agencies (Police, CDEM, council)	Purpose of visit/visit patterns	Daily flows
Cell phone/spending data	Service demands	Seasonal flows
Social media	Spending patterns	Peak times
Commercial enterprises (fuel, grocery, hospitality, accommodation)	Length of stay	Individual and group mobilities
Regional Tourism Organisations	In-group connections	Travel and employment trends
	Local familiarity	Accommodation availability
	Age, family status	Weather
	Ethnicity	Natural hazard events
		Transport disruptions

Additional questions

How complete is your understanding of each of these groups?

What data are currently available?

Where are these data found?

Are these data readily accessible?

How often do the above data need to be updated?

Possible data sources

National and regional tourism datasets (e.g., Commercial Accommodation Monitor, International Visitor Survey)

Regional Tourism Organisations

Cell phone, App and credit card data (e.g., Campermate App, Marketview)

NZTA road count data

Vulnerability in transient populations

Across all the transient population groups, New Zealand residents may be more familiar with the broader travel environment (e.g., issues associated with transport, weather and safety systems) but may be unfamiliar with local hazard profiles. Visitors from overseas are generally less knowledgeable in respect of local systems and, as a consequence, are more vulnerable.

The onus often falls on the host community (often, but not always, via their business roles as accommodation providers) to manage/protect visitors (both international and domestic) in the event of a natural hazard. It is common for such transients to depart (or, as in the case of the Kaikōura earthquake, to be evacuated) as soon as is practicable after an event, as they can otherwise become a burden on the host community. While this effectively mitigates many of the vulnerabilities associated with international tourists (and many other leisure visitors) – and negates the need for in-group resilience – it can also make communities more vulnerable as a result of the temporary loss of the visitor economy. Visitors who do not engage with the formal visitor economy (e.g., freedom campers, visitors staying in informal accommodation such as Airbnb and holiday homes) are less visible in the community and are also often less prepared (in terms of having food, water, fuel supplies) should a natural hazard event occur. Some examples of these vulnerabilities are shown below.

Domestic holidaymakers	International tourists	Travellers
People not as prepared when they are on holiday	International visitors often unfamiliar with NZ environments or with some of the potential hazards	People who are transiting are an 'unknown' and are particularly vulnerable if communications are down
Repeat visits may make them more aware of what is around	Reliant on accommodation providers to look after them	Some habitual travellers make connections over time
Not necessarily aware of 'local' hazard risk profiles and community resources	Some operate outside formal systems – 'under the radar'	

Building resilience in transient populations

It is difficult to obtain data on transiting and short-term visitors at the local (and even regional) scale. In-community awareness of transient populations varies as a result of their engagement with commercial sectors in the community; in the case of people who are merely transiting a location additional data may be sourced externally (e.g., via cell phone, spending data and social media and from employers/family who are aware of the transient individuals' travel plans).

A variety of factors relating to visit and visitor characteristics (including visit patterns, service demands, length of stay and in-group connections) impact on how, and with whom, transient populations connect in the community. Transient population groups are often unfamiliar with location, services, the host community, hazard risks and emergency response practices.

The mobility and travel patterns of transient population groups are often characterised by seasonal flows and peak visit times (related to both seasonal employment and leisure activity and to daily and weekly transport/travel schedules). In turn, these are impacted by weather and transport disruptions and by natural hazard events.

Resilience is improved by:
- understanding the range of transient groups and where they interact in the community
- ensuring telecommunications systems are robust and understanding the connections they facilitate (Apps, social media, access to information)
- events that attract/involve permanent residents and transient populations can raise awareness on both sides

A Māori perspective

The transient population research did not have a specific focus on Māori, although the role of the Takahanga marae (Kaikōura) in the earthquake response was widely referenced and a number of Māori-centric organisations were noted as key governance/community organisations. Māori featured as New Zealand-resident members in all four transient categories identified, albeit with a much more significant presence in Kaikōura than in the other three case study communities. The following section presents a summary of research findings from a Kaikōura-specific project undertaken by Marie McCarthy and Lisa Langer (Scion) as part of the RNC rural programme. This study focused on building community resilience with Māori. Citation details for this section can be found on page 2.

Community resilience for natural hazards: a Māori community perspective

Research has been undertaken focusing on dialogue with Māori residents in the Kaikōura district to understand the ways in which Māori communities prepared, responded (primarily in their support of transients hosted at the Takahanga marae) and recovered from the 2016 earthquake events to provide guidance in building resilience for natural hazards in the future. This has brought key learnings highlighting the need for councils and other lead agencies to develop an enduring relationship and collaboratively plan with the local community, in particular the Māori community.

Local Government Act (2002)

The Local Government Act (2002) outlines the Crown has obligations under the Treaty of Waitangi, and councils have specific obligatory conditions to adhere to. As such, there five main provisions that relate specifically to Māori that the Act requires all councils to:

- Establish, maintain and improve opportunities for Māori to contribute to local government decision-making processes;
- Ensure processes are in place for consulting with Māori;
- Consider ways to foster Māori contribution to local government decision-making processes;
- Provide relevant information to Māori; and
- Important decisions about land or water bodies must take into account the relationship of Māori and their culture and traditions (Local Government Act, 2002)[vii].

Categories of Māori within communities

Within Māori communities there are two main categories that define one's relationship to the local hapū, marae and whānau. The groupings are categorised according to whakapapa (genealogical links) to the local land and hence differ from categories established by length of time of stay.

The first category is referred to as mana whenua. This is described as a hapū and iwi customary land rights that denotes ownership over ancestrally defined parcels of land which facilitates rights of ownership, control and sovereignty (Wiri, 2013). In some cases, mana whenua groups also have water, lakes and waterway rights. The second term that is used is Mataawaka, which refers to those Māori living in an area who do not have mana whenua status. From a Māori perspective, mana whenua have cultural decision-making rights given their genealogical links to the land, marae, water and environment as established through their own ancestors. Beyond mana whenua rights, Mataawaka in some areas are well-established with marae and active organised groups and are highly likely to have an established network and a developed consultative process with mana whenua. Understanding these two key groupings is important for councils in respect of developing relationships with Māori.

Mana whenua and Mataawaka as a resource

The marae as a local cultural institution is reliant on local mana whenua groups and, in some cases, Mataawaka groups to 'keep the house warm' and to ensure that the cultural space is not only physically kept intact, but further, that the spiritual side of the space and community is kept healthy. A marae can be called upon to act as a relief centre in the event of a natural disaster, as happened at the Takahanga marae which catered for over one thousand tourists over the initial days of the 2016 earthquake response. In this respect, the community resource provided by marae and associated mana whenua community includes: (i) capacity to work as a collective; (ii) leadership that potentially bridges both the cultural space and externalities (council, aid organisations, CDEM, FENZ, NZ Police etc.); (iii) a fully functional accommodation

and catering facility; (iv) the capacity to draw on resources, including funds, people, expertise, food, networks etc., as represented by the rūnanga and broader national iwi system; (v) the capacity of local whānau to accept the responsibility to engage and participate as first responders; (vi) the capacity of mana whenua to be adaptable; (vii) the capacity to demonstrate kotahitanga (unity established through sustainable relations), manaakitanga (process of showing support, respect and care) and whanaungatanga (relationship, kinship, connection, sense of belonging); and (viii) a broader Māori network extending to other iwi.

Relationships and co-development of resilience plans

Many Mataawaka groups and individuals have good relations with the mana whenua group. Mataawaka groups, for example, made a contribution to the marae in a range of ways, including assisting in the running of the marae; making connections for mana whenua groups through their various employment; and generally supporting the mana whenua group in their pursuits in Kaikōura.

Councils would benefit from the strengthening of relations with both groups, viewing their developing relations as an investment in the broader objective of community cohesiveness and also as an investment in the cultural heritage and footprint that is unique to Aotearoa. In respect of disaster risk reduction (DRR), there is opportunity for councils to view the capacity of the marae as a strength to the community. As such, allocating support through the development of good relations, ensuring inclusion at all levels of decision-making, through to the allocation of resources to ensure an effective co-developed DRR plan with mana whenua and Mataawaka groups would be advantageous not only to the council as a local authority, but also in respect of broader community welfare in times of natural disaster.

The Kaikōura study emphasised that the development of solid respectful relationships is the key to the establishment of an effective DRR plan from the community's perspective. It also highlighted the types of relationships that were being sought by Māori with the council were based on: (i) genuine respect; (ii) inclusiveness at all levels of decision-making; (iii) relationships with high levels of trust and transparency; (iv) and the type of relationship where there were levels of rural community comfortableness where you could 'drop in for a cuppa'.

It is essential that the council ensures that resilience plans are co-developed with both mana whenua and Mataawaka groups. Co-development plans with well-defined arrangements allows for efficient and effective forms of operating. Importantly, planning in this way lends towards sustainable relationships with Māori community groups. From a Māori perspective, mana whenua through their own customary land rights have a kaitiaki (stewardship) role. This position is an inter-generational commitment, and subsequently is viewed as long term commitment. A Māori epistemological view also includes a genealogical connection to the land. The land is known as Papatuanuku (earth mother) and the sky is known a Ranginui. The relationship with the land and sky from this position promotes values of nurturing and care. Sustainable relationships extend then beyond the land to also include the communities that occupy the space.

Support for transient population groups

Whilst temporary residents and transient population groups (mainly tourists) are generally the majority groups which require hosting in times of natural disaster, semi-permanent and permanent residents also often require relief services provided by the local marae (again, as experienced at the Takahanga marae). If marae are intended relief centres, councils need co-develop plans with mana whenua to establish well-defined arrangements with marae executives, in order to allow adequate forward planning and stocking of resources such as food and water. All community groups need to be aware where the relief centre is. This will enable tourists to be directed to safe places, particularly in the absence of technology to communicate. An essential element to the preparedness of councils, and as the foundation to working with mana whenua and Mataawaka, is to ensure that council staff and board members have adequate cultural awareness to support the marae as a relief centre.

Building resilience in the community

We have identified six key interrelated processes important to developing and maintaining co-ordinated responses to disaster risk reducton and ensuring that communities are 'future-proofed' or resilient in the longer-term. Each process point in the diagram is explained further below and is followed by a table which addresses disaster risk reduction planning with mana whenua and Mataawaka groups as a primary step towards building resilience.
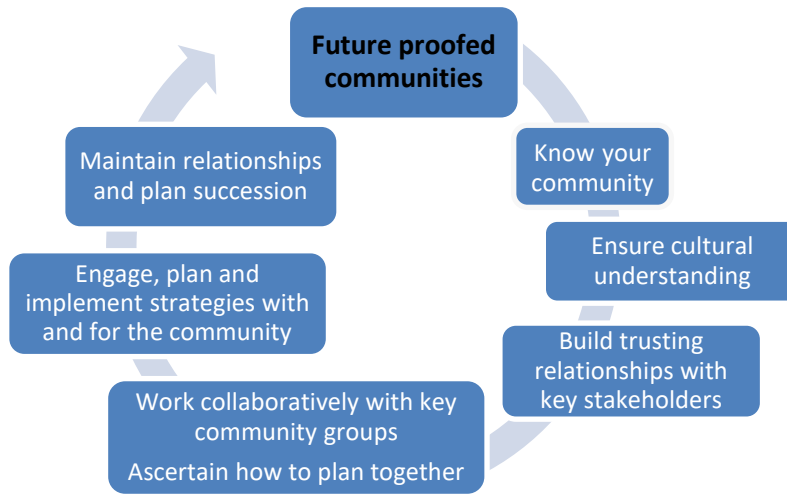
Know your community

For council, establishing good relationships with mana whenua and Mataawaka is central to knowing your own community and includes a relationship plan to ensure solid and effective relationships.

Knowing your community includes having established key relationships with Māori community leaders. Resilience plans should identify the needs and resources of the community and pre-plan accordingly. Such planning includes: the need to link the marae with key regional and national agencies such as CDEM, FENZ, aid organisations, NZ Defence Force, social and health services; and project outreach programmes that contribute to community learning of hazards and resilience.

Ensure cultural understanding

Effective relationships depend on understanding the diverse nature of the community. For Māori, there are key cultural considerations that need to be understood if a marae is nominated as a relief centre. When there is a lack of cultural understanding between the mana whenua/Mataawaka and council there can be ineffective use of time and resources. It is essential that council and other agency staff become familiar with the marae setting. This can be achieved through appropriate workshops for the council and all other agencies that are likely to be involved in a disaster event and mitigation efforts. Equally, a plan needs to be developed in conjunction with the mana whenua/Mataawaka as to how visitors to the community and community groups (who may be temporary, semi-permanent or new residents) with low cultural understanding, who may rely on the marae as a relief centre facility, are managed.

Building trusting relations with key stakeholders

Notably, for longer term resilience building, trusting relationships need to be transparent and inclusive. Key stakeholders include all agencies that are involved directly in an event, and its recovery (and preparedness for future events), including council, CDEM, FENZ, NZ Police, NZ Defence Force, marae, aid organisations, and health and social services. Key components of trust identified in our research include: transparency and inclusion at all of decision-making stages; developing a rapport with the marae community; supporting marae activities; and, developing policies that resource the development of solid relations between the mana whenua/Mataawaka and the council. This Kaikōura study acknowledges that trusting relationships – and what these may look like – differ between community groups. To this end, the development of an understanding between council and community as to what a trusting, healthy, sustainable relationship looks like would create a solid start to co-planning exercises.

Work collaboratively with key community groups

Ascertaining what collaboration means with mana whenua and Mataawaka is key to building community resilience. It is vital to ensure that mana whenua and Mataawaka groups are included in all levels of decision-making and resilience building, rather than an approach where decisions are made for them. Response, recovery and resilience planning need to be co-generated and collectively implemented. The Kaikōura study reports that a shared approach between council and mana whenua/Mataawaka is essential.

Engage, plan and implement strategies with the community

The engagement, planning and the implementation of risk reduction and planning strategies needs to be continuously monitored and evaluated. Local mana whenua and Mataawaka need to be included in all phases, including monitoring and evaluation, to build on present knowledge and experiences to ensure stronger resilience processes for the future.

Maintain relationships and plan succession

Maintaining key relationships and planning for succession within the community acknowledges the dynamic nature of the community. In addition to transient population flows, community leaders, council representatives and the Māori community all change over time. Within the Māori community there may, for example, be changes in marae executive composition, a new allocation of roles to whānau members and the other changes that may occur within the broader whānau. Planning for succession within community leadership, along with understanding the rate and velocity of change in transient population groups, both need to be considered. Similarly, councils need to take account of the changing dynamics of their own organisations.

Disaster risk reduction planning with Māori

The table below is directed at council and contains a number of questions to address and action points to be considered in respect of the co-development and maintenance of an effective and efficient disaster risk reduction plan with mana whenua and Mataawaka groups. Consideration of these factors represents a primary step towards building resilience.

Goal	Questions to address	Action points
To co-develop and maintain an effective and efficient disaster risk reduction plan with mana whenua and Mataawaka groups as a primary step towards building resilience		
Ensuring cultural understanding	Do key council employees and elected Board members understand the cultural space and feel comfortable to engage with mana whenua and Mataawaka?	Provide on-going cultural training for key council staff, elected members, key emergency management experts etc. Designate Māori staff as part of key council teams. Prioritise a lead paid role allocated to Māori emergency management.
Building trusting relationships	Have you developed sustainable relationships with mana whenua and key Mataawaka groups that are solid enough to work together? Have you linked other key agency groups into the mana whenua and Mataawaka network? Have you discussed and agreed upon what a sustainable relationship looks like with both mana whenua and Mataawaka groups?	Establish strong sustainable relationships and maintain regular dialogue with the local marae and key Mataawaka groups. Ensure CDEM, FENZ, aid organisations, and other lead agencies such as NZ Defence, police, health and social services have a relationship with the local marae. Ensure that you have agreed principles of operating developed with mana whenua and Mataawaka groups.
Ensuring adequate	Have you allocated sufficient resources to implement your future proofing plan with	Allocate resources for disaster management and future proofing. Ensure clean water capacity, a food plan, a

resourcing	mana whenua and Mataawaka groups?	support plan for operating the marae, a pre-developed network plan, establishment of relationships both internally and externally (i.e., CDEM/FENZ/aid organisations/NZ Defence/health and social agencies.
Engaging and consultation	Have you consulted mana whenua and Mataawaka groups in the development of your DRR plan? Have your consultation processes been approved by mana whenua and Mataawaka groups for DRR planning?	Host hui with mana whenua leaders from the local marae and invite all interested mana whenua and Mataawaka to attend and become involved. Co-design consultation processes and principles of operating with key mana whenua and Mataawaka groups.
Planning, decision-making and implementing strategies	Have you included mana whenua and Mataawaka in the various layers of decision-making and planning? Has mana whenua and Mataawaka been linked into the broader council's DRR community consultation plan?	Undertake collective future-proof planning between key representatives of council and local mana whenua/Mataawaka groups at all levels of decision-making. Clarify expectations and means of maintaining support through disaster response operations with mana whenua.
Ensuring inclusive communications	Have you reviewed and co-developed an effective future proofing communication plan with mana whenua and Mataawaka groups? Do you have in place a future proofing communications plan that includes transient, temporary semi-permanent and permanent groups? What does this plan look like in relation to the marae?	Co-produce a future proofing communications plan that includes transient, temporary, semi-permanent and permanent groups and their relationship with the marae. Ensure that the communications plan links in all groups that are likely to utilise the marae in a disaster event.
Respecting the marae as a cultural institution	Have you, in partnership with the marae, considered any cultural contingencies that need to be planned for?	Ensure the development and implementation of a cultural readiness plan for those community groups that are likely to use the marae in an event. Ensure that community leaders, business owners of tourist operations, managers of transient employees etc. are familiar with the cultural readiness expectations.
Working collaboratively with the community	Does your collaborative approach to working with the community have a suitable group of people leading the space who can develop sustainable future action and work across a culturally diverse and geographically mobile community?	Establish leadership that can bridge varying networks, cultural spaces, negotiate and open pathways for sustainable future action.
Maintaining enduring relationships and planning successions	Do you have a succession plan for relationship development and maintenance? Have you determined how you are going to monitor and evaluate across emergency management planning processes with mana whenua and Mataawaka?	Maintain regular dialogue with mana whenua. Collectively evaluate existing plans and make refinements to update and maintain relevance with local marae representatives annually. Plan successions by bringing new staff across council programmes into the planning process to extend the knowledge and ensure sustainable plans are maintained (not left to one individual, relationship needs to be established with more than one person, scaffolding).

Rural community resilience

These '*Guidelines for council*' are designed to raise awareness of the number and variety of transient population groups who may be present in rural communities. Transient population groups can be described according to demographic, economic, spatial and temporal characteristics, the identification of which highlights a number of in-group vulnerabilities and challenges in respect of their resilience should a natural hazard event occur. The resilience of the host communities is also impacted by the presence of, and in particular an increasing economic reliance on, transient population groups, whether as producers (e.g., as part of the local labour force) or consumers (e.g., as visitors to, or residents in, the community).

The transient population research was focused on four communities impacted by the 2016 Kaikōura earthquake, a natural hazard event which has generated a significant amount of research, including the 'Community resilience for natural hazards: a Māori community perspective' reported here. The findings from this Scion project illustrated the significant role played by Māori in Kaikōura after the earthquake (particularly in respect of the transient population groups present in the community at the time) and highlighted the need to consider an additional 'governance' dimension when examining transient populations. As such, Māori in Kaikōura were shown to provide a considerable stock of resilience 'capital' to the community as a result of their agency/governance role, through the provision of community facilities, and social support. Māori potentially represent 'community' in a more holistic sense than is the case for other governance agencies as they provide a blend of community function and service which is inclusive of the people it represents.

The two research projects described here also highlight fact that 'community' is made up of a range of people who participate in the community in many different ways. In addition to their status as residents, for example, community members may also be active in community affairs and occupy a key informant and informal governance role in the community. This is particularly the case when formal governance representation – at either, or both, the central or local government scale – is spatially distant. Although primarily encompassing those in the 'permanent resident' category of transience, their role as both hosts and employers serve to intensify their connection with, and knowledge of, the various transient population groups who are also found in the community. The significant role played by employers and business groups in welcoming and supporting various transient population groups was a key finding of this research. Such community members provided the 'key informant' perspective in the research and are identified as potential sources of information for a community situation analysis which we suggest can help improve resilience to nature's challenges (in respect of transient population groups). This includes:

- Knowing which transient population groups are present (including being aware of gaps in that knowledge)
- Understanding transience so you can update data and accommodate change
- Documenting/quantifying as much information as possible in advance of a natural hazard event, including understanding data sources and access to these data

These guidelines, and the specific points noted above, are directed towards council as they are the agency with the most comprehensive community overview. The suggestions for engagement with Māori highlighted the roles of the various agency, organisations and community groups, and the importance of developing connections and integrated approaches to community management between these. In many ways this parallels the connectivity and integration that is so important for building resilience in respect of individual community members and groups. Integration and connection within the community also needs a layer of cultural understanding which accommodates both Māori and new ethnicities. Community resilience requires a whole community approach – encompassing governance, key stakeholder and cultural dimensions, and changes within those dimensions – to understand transience and transients.

Translating these suggestions for resilience into action points for resilience building is challenged by the idiosyncrasy of community. The proposed framework provides a base from which to start. Despite this idiosyncrasy (of both community and the specific 'earthquake event' on which this project was based) we believe that our four case study communities represented a selection of typical community 'types' which are similar to those found around rural New Zealand, and that the principles and actions identified apply in respect of resilience to many other nature's challenges.

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