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Community Resilience, Capitals, and Power relations:
Stories from the Waimakariri District about the aftermath of the
2010-2011 Canterbury Earthquakes in New Zealand.

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ABSTRACT

Situated on the southern Pacific Rim, New Zealand's seismic profile has long posed risks for New Zealand communities. In this geological context, fostering community resilience to natural hazards is vital and resilience is beginning to be mainstreamed into New Zealand's planning and emergency management systems. However, a challenge emerges: how can the complex and contested concept of community resilience be operationalised in practice? This thesis addresses this question by critically evaluating how community resources and assets can be framed as community capitals, and exploring how these were mobilised in the Waimakariri District; an area affected by the 2010/11 Canterbury earthquake sequence.

A novel conceptual framework, the Community Resilience Capitals Framework, is developed on the basis of a literature review on resilience and capitals integrating Social-Ecological Systems theory, community resilience theory, and multi-capital frameworks. The research was underpinned by social constructionism, framed by a critical inquiry perspective and conducted using a Community-Based Participatory design. A mixed-methods approach was applied to explore the breadth and depth of Waimakariri post-Canterbury earthquake recovery stories. Purposive and snowballing methods were used to identify and recruit 51 research participants. Data collection methods included a pilot study, case studies, semi-structured interviews and focus groups. Data were subjected to content and narrative analyses; informed by the theories of Bourdieu, Foucault, and Harré.

Research findings show that capitals tend to be theorised as a variety of compartmentalised static concepts. However, physical capitals, such as built and economic capitals, and metaphysical capitals, such as symbolic, cultural, social, political and moral capitals, are accrued, assembled, and mobilised by actors shaping complex capital networks. Those who have or are able to mobilise the largest assemblages of capitals position themselves and others who have accrued less capital within the hierarchically structured fields of disaster response, recovery and regeneration. It is an actor's position within the fields that gives them the legitimacy (symbolic capital) to influence matters (central position), or be subjected to dominant actors (marginal positions). Multiple exemplars to illustrate capital accrual and field positioning are explored in this thesis such as central governments' reliance on the insurance and reinsurance sectors' economic capital to stabilise New Zealand's

financial markets. Consequently, insurance-related stakeholders were imbued with significant political capital and able to determine the priorities for earthquake recovery, while local communities' priorities were marginalised.

Key findings of this research indicate that physical and metaphysical capitals are selectively accrued as well as mobilised by actors positioned in the fields of disaster risk reduction, in order to influence negotiations pertaining to well-being and resilience priorities. Imbalances in capital accrual by actors fuel inequities in community resilience building processes. This research has identified that the complex nature of capitals and the ways they are mobilised to facilitate community wellbeing are not adequately acknowledged in prevailing emergency management and planning practices. The Community Resilience Capitals Framework reveals the complex nature of capital interactions and can be used to reveal how equitable and inclusive local community resilience building processes are in practice, in a place- and context-sensitive manner.

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LIST OF ACRONYMS

CanCERN	Canterbury Communities and Earthquake Recovery Network
CCC	Christchurch City Council
CBD	Central Business District
CBPR	Community-based Participatory Research
CDEM	Civil Defence and Emergency Management
CERA	Canterbury Earthquake
CERC	Canterbury Earthquake Recovery Commission
CER	Canterbury Earthquake Recovery Act
CERR	Canterbury Earthquake Response and Recovery Act
CRC	Christchurch Response Center
CRCa	Community Resilience Capacity
CRCF	Community Resilience Capitals Framework
CRCo	Community Resilience Competence
CWBRs	Community Well-being Resilience and Sustainability
DPMC	Department of Prime Minister and Cabinet
ENC	Enterprise North Canterbury
EQC	Earthquake Commission
GCR	Greater Christchurch Regeneration Act
KRA	Kaiapoi Residents Association
LURP	Land-use Recovery Plan
MBIE	Ministry of Business, Innovation and Employment
MSD	Ministry of Social Development

NDF	National Disaster Fund
NDRS	National Disaster Resilience Strategy 2019
NIWA	National Institute of Water and Atmospheric Research, Ltd (New Zealand)
PKBA	Pines and Kairaki Beach Association
RAC	Recovery Assistance Center
SES	Social-ecological systems
SSW	Social Services Waimakariri
WDC	Waimakariri District Council
YMWU	You, me, we, us

LIST OF GUARANÍ-URUGUAYAN PSEUDONYMS FOR RESEARCH
PARTICIPANTS AND THEIR ENGLISH MEANING

Aguará Guazú	Indigenous name of a native fox (<i>Chrysocyon brachyurus</i>)
Apereá	Indigenous name of a native rodent (<i>Cavia aperea</i>)
Arequita	Name of a Uruguayan geographical feature meaning ‘river of the high stone cave’
Arayán	Indigenous name of a native tree (<i>Blepharocalyx</i>)
Aruera	Indigenous name of a native tree (<i>Lithraea molleoides</i>)
Caraguatá	Indigenous name of a native plant (<i>Eryngium pandanifolium</i>)
Chajá	Indigenous name of a native bird (<i>Chauna torquata</i>)
Coatí	Indigenous name of a native raccoon (<i>Nasua nasua</i>)
Curupí	Indigenous name of a native tree (<i>Sapium haematospermum</i>)
Guasubirá	Indigenous name of a native deer (<i>Mazama gouazoubira</i>)
Iporá	Name of Uruguayan geographical feature meaning ‘beautiful waters’
Karumbé	Indigenous name of native turtles (<i>Caretta caretta</i> , <i>Chelonia mydas mydas</i> , <i>Dermochelys coriacea coriacea</i> , and <i>Lepidochelys olivacea</i>)
Kururú	Indigenous name of a native toad (<i>Rhinella schneideri</i>)
Mburucuyá	Indigenous name of a native plant (<i>Passiflora edulis</i>)
Ñandú	Indigenous name of a native bird (<i>Rhea</i>)
Ñandubay	Indigenous name of a native tree (<i>Prosopis affinis</i>)
Ñapindá	Indigenous name of a native plant (<i>Acacia bonariensis</i>)
Panambí	Indigenous name of native butterflies (e.g., <i>Heraclides atyalus</i>)
Pindó	Indigenous name of a native plant (<i>Syagrus romanzoffiana</i>)
Pitanga	Indigenous name of a native tree (<i>Eugenia uniflora</i>)
Piraju	Indigenous name of a native fish (<i>Salminus brasiliensis</i>)

Queguay	Name of a Uruguayan geographical feature meaning ‘river where dreams flow’
Surubí	Indigenous name of type of native fish (<i>Pseudoplatystoma Coruscans</i> , and <i>Pseudoplatystoma Fasciatum</i>)
Tamandua	Indigenous name of a native anteater (<i>Tamandua tetradactyla</i>)
Tacuara	Indigenous name of a native plant (<i>Guadua angustifolia</i>)
Tacurú	Indigenous name of native ants (e.g., <i>Paraponera clavata</i>)
Tatú	Indigenous name of a native armadillo (<i>Dasyopus novemcinctus</i>)
Timbó	Indigenous name of a native tree (<i>Enterolobium contortisiliquum</i>)
Yacaré	Indigenous name of a native caiman (<i>Caiman latirostris</i>)
Yaguareté	Indigenous name of a native feline (<i>Panthera onca</i>)
Yaguarí	Name of a Uruguayan geographical feature meaning ‘river of the Yaguareté (<i>Panthera onca</i>)’
Yarará	Indigenous name of a native viper (<i>Bothrops alternatus</i>)
Yagurundí	Indigenous name of a native feline (<i>Puma yagouarundi</i>)

1.1. Overview

Situated in the south western tip of the Pacific Rim, otherwise known as The Ring of Fire, New Zealand lies on the intersection between the Australian and the Pacific Plates making this land one of the most earthquake prone areas in the world. In this context, it is essential to recognize the importance of and enable community resilience. Policy documents, such as the recently adopted National Disaster Resilience Strategy 2019 (NDRS), emphasize the value of equitable and transformative resilience building processes. However, translating well-intentioned policy provisions into practice is challenging. This thesis aims to provide insights that help community resilience theory become a reality in New Zealand by critically evaluating: i) how community capitals are conceptualised and, ii) how they contributed to community resilience in the Waimakariri District's earthquake response, recovery and regeneration process. In this first chapter these two aims are further described, alongside the general structure and scope of each chapter. The next section will begin by broadly describing the context of and justification for this research.

1.2. Research context and justification

A growing body of scholarship and practice has begun to develop integrated approaches to seismic risk governance and community resilience planning in New Zealand (e.g., Murray et al, 2015; Lawrence, 2015; Saunders et al, 2015, Vallance, 2015) and, in particular, recovery governance (e.g., Glavovic 2014; Johnson & Mamula-Seadon, 2014) and its social dimensions (e.g., Hayward, 2013; McManus et al., 2015). Furthermore, community resilience literature has recently begun integrating the concept of 'capitals' (Cutter et al., 2014; Kenney & Phibbs, 2014; Norris et al., 2008; Stokols et al., 2013; Wilson, 2010, 2012), and more specifically 'community capitals' (Miles, 2015), as a theoretical and analytical tool to address the social dimensions of community resilience. However, these efforts do have limitations. Firstly, terms such as 'capitals', 'resources', and 'assets' are often conflated or used interchangeably (e.g., Berkes, 2007; Miles, 2015; Norris et al., 2008) which can lead to erroneous and confusing uses. Secondly, there is no consensus regarding which physical and metaphysical capitals should be considered as constitutive of 'community capitals'. For example, metaphysical capitals such as moral capital are recognized as important for community resilience

research, yet are rarely included (Stokols et al., 2013). Finally, Pigg et al., (2013) note that although some researchers such as Emery & Flora (2006), Macias & Nelson (2011), Stofferahn (2012) and Sturtevant (2006) have explored the ways in which physical and metaphysical capitals relate to each other, further empirical evidence is needed to develop the concept of ‘community capitals’ from a relational and critical perspective. This research seeks to help address these gaps by advancing knowledge of how physical and metaphysical community capitals are conceptualized in literature, and how they enhance or undermine community resilience building processes in earthquake response and recovery practice. This contribution to knowledge is of particular importance in a place like New Zealand where according to GeoNet¹ an average of 20,000 earthquakes are recorded per year in the country (McBride, 2017).

There are numerous examples of extreme natural hazard events in New Zealand’s history both before the arrival of European settlers and after (King & Goff, 2006). The 2010 and 2011 Canterbury earthquake sequence stands out as an example of disastrous extreme event both because it is a recent occurrence and because it left behind a tragic death toll (Potter et al. 2015). In addition, this event also produced an estimated NZ\$40 billion in damages (Wood et al., 2016), devastating the city of Christchurch as well as smaller urban and rural settlements across Canterbury (Cubrinovski et al., 2012; Potter et al., 2015; Reyners, 2011; Stevenson et al., 2011; Tonkin & Taylor, 2010; Whitman et al., 2013; Wood et al., 2010). Such devastating consequences sent shock waves across local communities and the entire country where issues around insurance (Brown et al., 2013; Fitzsimmons, 2016; Stylianou, 2016; Wood et al., 2016), housing (Human Rights Commission, 2013; Newell et al., 2012), and red-zoning (CERA, 2016; McCrone, 2013; Miles et al., 2014; Vallance, 2013; Young, 2016) highlighted the complex nature and contested meaning of recovery (e.g., McManus et al., 2015).

¹ Geological hazard monitoring system used to detect and report seismic activities in New Zealand.



Figure 1. Map of the Waimakariri District (designed by the author using satellite images from google maps).

The story of the Waimakariri District stands out amongst the many stories that unfolded after the 2010/2011 Canterbury earthquake sequence. This is because three localities in this district, Kaiapoi, Pines Beach and Kairaki Beach (Figure 1) were severely damaged during the 4th of September 2010 M7.1 earthquake. The damage and disruption stretched beyond the event however. For instance, a red-zoning process carried out by ministerial orders throughout June 2011 following the 22nd of February 2011 M6.3 Christchurch earthquake deemed a quarter of the houses in Kaiapoi uninhabitable, half the houses in Pines Beach, and all housing at Kairaki Beach, causing the displacement of many local residents (Brookie, 2012; Vallance, 2013). The extent of the damage, the impacts and social significance of the land re-categorization process, prompted the Waimakariri District Council (WDC) to develop an integrated community-based recovery framework and leadership model. This novel response placed community engagement at the core of its actions and presented a unique opportunity to explore the complexities that underpin how different forms of

community capital are mobilised and drawn upon in the practice of building community resilience in post-disaster situations.

On the night of the 13th-14th of November 2016, the South and North Islands were violently shaken by the Kaikōura earthquakes (M7.8). With its epicentre located near Culverden, this earthquake left a trail of destruction across rural communities in the North Canterbury Region. Additional fault ruptures further impacted the lower North Island and the Capital City of New Zealand, Wellington, where numerous buildings had to be demolished due the risk of collapse (Campbell, 2017; Shadwell & Sachdeva, 2016). The consequences of the Kaikōura earthquake and related aftershocks were immediately compounded by the occurrence of an extreme rainfall event that caused widespread flooding in Wellington, hindering response efforts (NZ Herald, 2016; Rowe, 2016). The Kaikōura earthquake also highlights the importance of understanding New Zealand's earthquake prone characteristics in the context of a much wider spectrum of hazards, which when compounded can produce disastrous consequences. The record of disaster events put together by the Insurance Council of New Zealand (2015) notes that the 50+ extreme natural hazard events recorded between 2008 and 2015 produced a total insurance loss of NZ\$690 million (without counting the 2010-2011 Canterbury earthquakes). Furthermore, this insurance loss does not include the environmental losses, or the intangible impacts on socio-cultural, political, and moral aspects of communities. Most of these extreme events were related to the rapid onset of adverse weather, such as cyclones Debbie and Cook which caused floods, storms, and gale force winds across the North Island in 'dates'. Broadening the hazard scope to include slow onset change, such as sea level rise associated with climate change, the exposure to hazards increases significantly given the current and projected growing number of New Zealanders occupying urbanised coastal areas (New Zealand Productivity Commission, 2017; Statistics New Zealand, 2013a).

In synthesis, many people are becoming increasingly exposed to extreme weather and seismic events in New Zealand, which may be very problematic because of the potential social, economic, environmental, and cultural losses that the occurrence of these extreme events may cause. Making sure that the multiple demands for land-use development are reconciled with sensible future-proofed efforts to build more resilient communities is of essential importance in mitigating future risk. An institutional framework to build more resilient communities already exists in New Zealand, and well-being, sustainability, and resilience are three key concepts mainstreamed into the New Zealand land-use planning and emergency management framework and provisions (CDEM Act,

2002; Local Government Act, 2002; National Disaster Resilience Strategy, 2019; Resource Management Act, 1991). The inclusion of these three terms in New Zealand's 'institutional architecture' presents a unique opportunity to critically reflect on and reshape governance structures and procedures beyond service provision towards more comprehensive community resilience building processes. However, transforming policy provisions into lived reality also brings forth a major challenge: How can current New Zealand governance structures effectively operationalise complex and contested concepts such as well-being, sustainability, and resilience in an effective manner? This research seeks to answer this question by investigating how physical and metaphysical community capitals are conceptualised in literature, and how community capitals are mobilised and drawn upon to secure community well-being in the practice of the Waimakariri District's earthquake response, recovery and regeneration practice. This research will address these questions through achieving the aims and objectives, described in the following section.

1.3. Aims and objectives

The purpose of this research is to generate new, practical, and relevant knowledge that contributes to the operationalisation of resilience building processes in New Zealand communities. The aims are twofold: (1) Critically evaluate how the concepts of community capitals are constructed, framed and utilized in literature; and (2) Document how community capitals function as barriers to or enablers for community well-being, resilience, and sustainability in the context of the Waimakariri District earthquake response, recovery and regeneration. The primary question designed to address these aims is: How do multiple physical and metaphysical forms of capital operate in relation to each other to enhance or hinder community resilience building processes that enable communities in the Waimakariri District to navigate the devastating consequences of earthquakes? The objectives to answer this question are:

1. Design a conceptual framework based on a review of the resilience and community capitals literature to explain how different forms of community capitals influence earthquake response, recovery and regeneration in the context of the Waimakariri District.
2. Explore the effectiveness of the conceptual framework by applying it in the Waimakariri District to document the way in which capitals are drawn on and mobilised in the earthquake response, recovery and regeneration process.

3. Develop practical implications of the research findings for locality specific and wider risk governance and resilience building efforts in Aotearoa-New Zealand.

1.4. Chapter outline

The rest of the chapter sets out the structure of the thesis and an overview of how each individual chapter builds on what has gone before to logically develop an understanding of the issues germane to the primary research question.

1.4.1. Literature review: Community resilience and capitals (Chapter 2)

In this chapter the findings from a review of the literature and scholarship focused on community resilience and capitals, are presented. Five conceptual pillars will be explored and described: ecosystem resilience, social-ecological resilience, community resilience, and capitals. Final theoretical reflections will outline an emerging, yet flexible and evolving, conceptual framework entitled the Community Resilience Capital Framework (CRCF). This novel framework builds upon the concepts presented by integrating social-ecological systems theory (SES), community resilience theory, and multi-capital frameworks into three conceptual pillars of the emerging Community Resilience Capitals Framework. These three pillars are: Community Resilience Capacity (CRCa), Community Resilience Competence (CRCo), and Community Well-being Resilience and Sustainability (CWBRs). CRCa is defined as a set of individual, collective, tangible and intangible capitals onto which adaptive adaptive community well-being priorities and strategies can be built in the face of uncertainty and change. CRCo is defined as the process through which capitals are accessed and distributed across any given community. And CWBRs is defined as a set of collectively agreed upon well-being, resilience, and sustainability priorities.

1.4.2. The 2010/2011 Canterbury earthquake sequence and its social-ecological implications (Chapter 3)

A general overview of the Canterbury 2010/2011 earthquake sequence and its social-ecological consequences for the Greater Christchurch Area is provided. This helps establish the regional context in which the Waimakariri's response, recovery, and regeneration story unfolded. The overview was developed through a comprehensive review of literature detailing the earthquake events and consequences for the region and the country. Additionally, participants' talk will be drawn on to illustrate some of the points noted in literature and provide details of some key pre-

existing elements, such as the strong sense of community and community development team in the WDC as well as ways these factors determined response, recovery and regeneration pathways in the Waimakariri. The rationale for informing this chapter with participants' talk before describing the methodological approach is to help tell the story in an authentic and human way that gives voices to local people. Using participants' talk is a device to bring to life and situate resilience and capitals as concepts that are visible in lived experiences beyond sober official reports and emphasize the multiple capitals in evidence within these narratives.

1.4.3. Methodological framework (Chapter 4)

This chapter describes the process through which the methodological approach was designed and implemented to understand how research participants drew on and mobilised capitals in the Waimakariri's post-earthquake story. The chapter commences by describing the social constructionist, critical epistemological and theoretical considerations that underpin the methodological and analytical approach to thesis research. The ways in which Pierre Bourdieu's, Michel Foucault's, and Rom Harré's critical social theories inform the research are presented, followed by the description of the methodological approach and the methods utilised to implement the research. A Community-Based Participatory Research (CBPR) approach is adopted and presented to be able to open the participatory spaces aligned with the constructionist and critical framing selected to challenge power relations in research. In addition, a qualitative and quantitative mixed-methods approach was adopted in order to explore i) the inherent diversity of the Waimakariri communities' post-disaster reality; and ii) a deeper understanding of how specific participants construct meaning in relation to capitals and their mobilisation before, during and after the 2010/11 Canterbury earthquake sequence in the Waimakariri. The qualitative and quantitative methods for data gathering and analysis were: Pilot study, case studies, snowball recruitment, semi-structured interviews, focus groups, coding, content analysis, and narrative analysis. Descriptions and justifications for each of these methods are provided and an explanation of how they were used together with some reflections on the trustworthiness, reliability, credibility, and fittingness of this research.

1.4.4. Capitals in the field of immediate response (Chapter 5)

This chapter explores the ways in which different capitals were drawn on and mobilised by research participants as they tackled immediate response challenges such as broken service infrastructure (sanitation, water, power) and safety in the Waimakariri. Analysis in this chapter draws on content

analysis of the interviews and a separate narrative synthesis of participants' talk to elicit how capitals featured in the field of immediate response. Although content analysis results of all participants' narratives highlight that 'people' are at the centre of the immediate response, and that frequent references were found associated with built and human capital, analysis also shows that built, human, economic, cultural, social, political, and moral capitals are related to each other. Narrative analysis of the interview talk of three key informant's interviews, *Kururu*, *Tacuara*, and *Pitanga*, provides further insights of about interrelations.

Analysis of *Kururu's* interview talk, a senior Police officer from the Waimakariri, explores two themes: i) how the Waimakariri District and Christchurch were positioned in the field of immediate response, and how this affected capital distribution across the region during the emergency, and, ii) how metaphysical capitals were drawn on and mobilized by police in the field of immediate response. *Tacuara*, a WDC staff member who was deeply involved with the immediate response to address infrastructure issues, provides insights into two further themes: iii) the relation between the WDC's capital accumulation and an emerging moral sense of responsibility, and, iv) how the prioritisation of a 'normal' habitus led to the marginalisation of different social practices and the natural environment affecting capital accessibility and distribution in the field of immediate response. Finally, *Pitanga's* narrative, as a community leader from the Kairaki Beach Motorcamp, exemplifies three additional themes: v) the Kairaki Beach Motorcamp's autonomous capital mobilization in the immediate response field, vi) the role physical and metaphysical capitals played in shaping a sense of community in the Kairaki Beach Motorcamp and, vii) the marginal position occupied by the Kairaki Beach Motorcamp in the field of immediate response.

This chapter concludes with some practical reflections about the implications of hierarchically structured immediate response fields for emergency response practices in an increasingly multicultural New Zealand.

1.4.5. Capitals in the field of recovery (Chapter 6)

The ways in which different physical and metaphysical capitals were mobilised and drawn on by research participants and key stakeholders to facilitate the Waimakariri's recovery issues are now discussed. In order to do this, the chapter draws on content analysis of all interviews associated with the recovery phase and a separate narrative synthesis of participant's talk.

Findings derived from content analysis of all participants' narratives highlight again that 'people' were at the centre of the recovery, and frequent references were found associated with human and political capitals, such as physical and mental health needs, that began to emerge during recovery and political participation (or the lack of it) during the red-zoning process. The results derived from the content analyses also suggest that built, human, economic, cultural, social, political, and moral capitals are often related to each other when mobilised. Narrative analyses of the interviews of three key informants from Kaiapoi, and Pines and Kairaki Beaches, *Yaguareté*, *Yarará*, and *Aperedá*, provide further details of the interrelations between capitals.

Analysis of *Yaguareté's* narrative, helps elucidate two recovery themes: i) the relation between metaphysical capital mobilization and the creation of local knowledge in the Pines and Kairaki communities, as well as ii) the relation between physical and metaphysical capital accumulation and the forced displacement of local geotechnical discourse and residents in the Pines & Kairaki recovery field. The talk of *Yarará*, a community leader in Kaiapoi, helps illustrate two further recovery themes: iii) the relation between metaphysical capital accumulation and the construction of influence in the recovery field, and iv) the relation between capital accumulation, symbolic violence, and marginalisation of red-zone stayers in the Kaiapoi recovery field. Finally, *Aperedá's* story, describes two additional recovery associated themes: v) the metaphysical (symbolic and cultural capital) underpinning of built capital in Kaiapoi, and vi) the power struggles between Kaiapoi residents and central government over the red-zoned built environment.

This discussion concludes by providing some key practical reflections for the wider resilience building process in New Zealand associated with capital accumulation, subtle domination, and symbolic violence for recovery practice.

1.4.6. Capitals in the field of regeneration (Chapter 7)

This chapter presents findings that illustrate how different capitals were drawn on and mobilised by research participants during the Waimakariri's regeneration process. The discussion is informed by a content analysis of the interviews and a separate narrative synthesis of research participants' talk.

Findings from content analyses of participants' narratives highlights that 'people' were again at the centre of the regeneration, and frequent references were found associated with political and human capitals such as the regeneration planning process and mental health. Results also showed that built, human, economic, cultural, social, political, and moral capitals are closely interconnected.

Narrative analysis of three key informants' interview talk; namely *Kururú*, *Chajá*, and *Tamandua*, provides further details of the relationships between capitals.

Kururú's interview talk highlights two key regeneration associated themes: i) A declining trend in human capital associated with emergency responders' stress, as well as physical and mental fatigue; and ii) a declining trend in human capital associated with depression, suicide, and the marginalisation of social and mental health service providers. *Chajá's* talk helps showcase another human and social capital associated theme: iii) decline in human and social capital in the regeneration field associated with socio-economic deprivation and emotional exhaustion in families and their children. Finally, *Tamandua's* narrative, draws attention to three regeneration associated themes that speak of: iv) the relation between *Tamandua's* physical and metaphysical capital accumulation, mobilisation, and his central positioning in Kaiapoi's town centre redevelopment field, v) the relation between economic capital and Kaiapoi's town centre redevelopment process, and, vi) the risk of marginalisation and displacement of socio-economically deprived sectors of Kaiapoi in the context of Kaiapoi's Town Centre revitalisation process.

This chapter concludes with practical insights for long-term recovery practice in the context of an emotionally exhausted community facing economic and employment issues such as the need to consider the regions' psycho-social challenges and the levels of support needed to facilitate the development of contextually appropriate recovery policies and practices.

1.4.7. Conclusion (Chapter 8)

The final chapter concludes with a synthesis of research findings, spotlighting the importance of understanding community resilience building processes as complex, long-term, multi-scalar dynamic phenomena. Furthermore, the stages of response, recovery and regeneration can be constructed as mutating and evolving fields of power. These fields of power constitute three distinct moments of the post-disaster timeline characterized by well-defined players competing and collaborating to occupy dominant, bridging, linking and marginal positions in the field determined by accessibility to multiple types of physical and metaphysical capital, such as social, cultural, political, symbolic, moral, natural, and human capitals. In addition, the underlying power dynamics that underpin the evolving and always changing field of community resilience underscore the importance of integrating metaphysical capitals, such as cultural, symbolic, political, and moral capitals, as foundational capitals that are drawn on and mobilized by players. In mobilising these physical and metaphysical capitals, complex (multi-scalar, emergent, dynamic, uncertain) unfinilised

assemblages are shaped which affect the overall resource distribution, and ultimately community well-being, resilience and sustainability.

2.1. Introduction

This chapter presents the findings of a review of literature relevant to understanding conceptualisations of the nature and roles of capital in building community resilience. The review critically reflects on existing theory associated with community resilience and capitals and develops a novel community resilience capitals conceptual framework that rests upon four conceptual pillars: ecosystem resilience, social-ecological resilience, community resilience, and the capitals concepts. These concepts will be explored in detail in three main sections of this chapter. The first section describes key concepts, the second section is a critical review of the 'capitals' concept, and the third section describes the construction of a novel community resilience capital framework based on this literature review.

The first section describing key concepts introduces ecosystem resilience followed by a synthesis of social-ecological systems (SES) resilience literature. Both bodies of literature have been explored because they provide theoretical foundations from which the concept of community resilience stems. The concept of community resilience will also be introduced, defined, and explored by examining five constitutive elements: community, community well-being, adaptive capacity, scales (panarchies), and resources. Each of these concepts is analysed in relation to the broader idea of community resilience and an explanation of their theoretical importance is provided. Community resilience models that articulate these elements and introduce the notion of capitals and community capitals are also presented and described. A key gap in the community resilience and community capitals literature is associated with the lack of empirical evidence to develop the foundations of the community capitals concept from a relational and critical perspective.

In the second section, the review is expanded to explore how the multi-capital frameworks have been developed. Three conceptual pathways are explored: the theoretical development of individual capitals, the subsequent convergence of individual capitals into integrated capital frameworks, and the emergence of new forms of capitals. In terms of individual capitals, six 'core' capitals will be described as well as the associated debates regarding their relevance for community resilience. These capitals are: economic, built, natural, human, cultural, and social capitals. A brief

outline of the evolution of how capitals have been integrated into multi-capital frameworks is presented, and the ways in which these conceptual constructions have permeated the social-ecological literature are described. A synthesis of emerging forms of capital (such as institutional capital, psychological capital, symbolic capital, political capital, and moral capital), their definitions, and their relevance for community resilience is also provided.

The third section provides a summary of theoretical reflections, and articulates a novel conceptual framework that integrates SES, community resilience, and community capitals constructions. This framework is foundational for this case study analysis and identifying how access, use, and distribution of resources within a community shape community resilience in practice while simultaneously providing empirical evidence of how to conceptualise community capitals.

2.2. Key concepts

In this first section of this chapter the four key concepts upon which the conceptual framework is built will be described. These concepts are: Resilience, Social-Ecological Resilience, Community Resilience, and Community Resilience and Capitals (Figure 2).



Figure 2. Synthesis image indicating the relation between key concepts of the conceptual framework.

Figure 2 shows how these four concepts are articulated in the following sections where ecosystem resilience provides an overarching theoretical construct upon which social-ecological resilience was built. The image also shows how other key concepts such as community resilience and capitals are integrated into the framework. In this section, gaps in the literature are also identified.

2.2.1. Resilience

Resilience has become a buzz word across policy and science, but its conceptualisation remains contested. The adoption and widespread dissemination of the term in academic spheres, mainly engineering, ecological, and social sciences, occurred after the 1950s and grew exponentially towards the first decade of the 2000's through concepts such as: Disaster resilience, economic resilience, infrastructure resilience, organisational resilience, social and community resilience, psychological resilience, and socio-ecological resilience (Alexander, 2013; Stevenson et al., 2015a). The evolution and wide dissemination of the term throughout so many fields is partly what produced different interpretations that contribute to divergent perspectives on the topic. For example, the field of engineering understands resilience as a 'bounce back' attribute that provides stability (Hollnagel, 2011; Hale & Heijer, 2006; Omer et al., 2009; O'Rourke, 2007; Rose et al., 1997). Social and natural sciences have linked resilience to more dynamic ideas of well-being, evolution, change, adaptive cycles, transformations, and transitions from and to multiple stable states (Adger et al., 2005; Berkes et al., 2003; Folke et al., 2010; Holling, 1973; Holling & Gunderson, 2002; Moser et al., 2019; Paton & Johnston, 2001; Seligma & Csikszentmihalyi, 2000; Seville et al., 2015; Tiernan et al., 2019).

Holling (1973) contrasted and identified the limitations of the 'engineering conceptualisation' of resilience when describing ecological systems, and in so doing, focused attention on ecological resilience as the ability to absorb change while maintaining integrity as a whole (populations or state variables). Holling's seminal work in the early 1970s triggered the quick and prolific adoption of the term across several natural sciences. However, the widespread use of the term was not homogenous in terms of conceptual understanding. In actuality, the idea of resilience evolved through two theoretical pathways; engineering resilience (efficiency of function), and ecosystem resilience (existence of function) (Holling & Gunderson, 2002).

Engineering resilience closely relates to the ideas of stability and predictability. Holling (1973) defines stability as the capacity of a system to return to a state of equilibrium after a significant disturbance (near equilibrium-steady state). Therefore engineering resilience can be understood as

a two-fold attribute; as a system's capacity to absorb disturbances without affecting its stability, or the capacity to quickly recover stability after the occurrence of a disturbance (Pimm, 1984, 1991; Tilman, 1996; Tilman et al., 2006). This way of framing natural processes was strongly critiqued by Holling (Holling & Meffe, 1996; Holling, 1986). He argued that engineering resilience mistakenly implied that the natural world could be managed through top-down, command and control strategies that aimed to efficiently harvest its products, reduce its threats, and establish highly predictable outcomes for the short-term benefit of humanity; leading to 'the pathology of resource management' (Holling & Meffe, 1996; Holling, 1986, 1996; Holling & Gunderson, 2002).

The concept of ecosystem resilience popularised by Holling (1996) is distinct from the mechanistic views of engineering resilience, and conceptualises ecological systems as complex, unpredictable, and adaptive systems constantly transitioning through multiple stable states following a four stage adaptive cycle. This inferred that the behaviour of system parts could vary significantly (instability) or very little (stability) in space and time. Yet, the persistence of the system itself is understood as constituting resilience – beyond the variations within its individual components and through the multi-stage adaptive cycle transition to multiple stable states. The idea of ecosystem resilience spread rapidly through ecology, but this idea only focused on ecosystems and did not provide the comprehensive framework needed to integrate social and ecological systems. With international scientific recognition that different bodies of knowledge needed to be integrated through inter-and trans-disciplinary studies to comprehend social-ecological interactions at the systems level, the ideas of social-ecological systems (SES), social-ecological resilience, and panarchies came to the fore, as described in the following section.

2.2.2. Social-ecological resilience

The idea of SES emerged as a response to the systematic failure of scientific efforts during the second half of the 20th century to grasp the complexity in which current social and ecological predicaments were embedded, and to conceptualise how sustainable development pathways that bridge society and nature worldwide could be successfully implemented (Berkes et al., 2003; Gunderson & Holling, 2002). Built upon the pillars of general systems theory (Bertalanffy, 1968), complex systems (Berkes et al., 2003; Holland, 1995; Kaufmann, 1993; Waldrop, 1992), and ecosystem resilience theory (Holling, 1973), SES began to gain international recognition and scientific legitimation at the beginning of the 21st century. SES focused on underscoring the multi-dimensional social and ecological conditions that drive human decisions and answering questions

about how human societies might incorporate diverse political, social, cultural, and economic mechanisms that foster adaptive capacity across multiple scales to navigate safely through uncertain and changing socio-ecological conditions (Adger et al., 2005; Berkes & Folke, 1998; Berkes et al., 2003; Folke et al., 2016).

The incorporation of notions of ecosystem resilience, adaptive cycles and panarchies underpinned conceptualisations of SES as multi-scalar nested and interconnected systems. Such systems constantly transition through a four-stage loop cycle of exploitation (r), conservation (K), release (Ω), and reorganisation (α), but are bounded by three variables, potential, connectedness, and resilience.

Holling and Gunderson (2002) applied the term 'potential' to specifically refer to the boundary defined by the total availability of resources within any given system. The researchers suggested that the indicators used to measure a system's potential depend on the type of system being analysed. Ecosystem productivity can be equated to the total amount of biomass and nutrients accumulated in previous stages of the cycle. In social systems, potential can be established in relation to the accumulated resources (i.e., social, cultural, or economic capitals). The second boundary that restrained the adaptive cycle is 'connectedness', a slightly more complex idea than potential. Connectedness is defined by Gunderson and Holling (2002, p. 50) as '*the degree of internal control that a system can exert over external variability*' and thus have control over its own 'destiny'. The internal connectivity of any given system allows it to regulate its functions in a way that it can maintain stability in the face of external variability. And finally, the last boundary of the cycle is 'resilience', which determines how much pressure a system can take before it breaks the control set by the connectedness of the system. Resilience can be measured as the magnitude of disturbance that any given system can absorb before changing into a completely different stability domain.

Within these three boundaries, and as seen in Figure 3 and Figure 4, adaptive cycles perform an adaptive dance where movements from phase to phase (r - K - Ω - α - r ...) determine the evolutionary behaviour of the SES and are conceptualised as a panarchy (Holling & Gunderson, 2002, pp. 43-47). Panarchic order (adaptive cycles across multiple scales) can either transfer potential or hinder and cause damage from one order of magnitude to another (revolt) (Holling et al., 2002, pp. 63-102), resulting in a panarchy of nested adaptive cycles thriving, or entering into cascading cross-scale collapse (Gotts, 2007; Jaques, 2014; Pescaroli & Alexander, 2016).

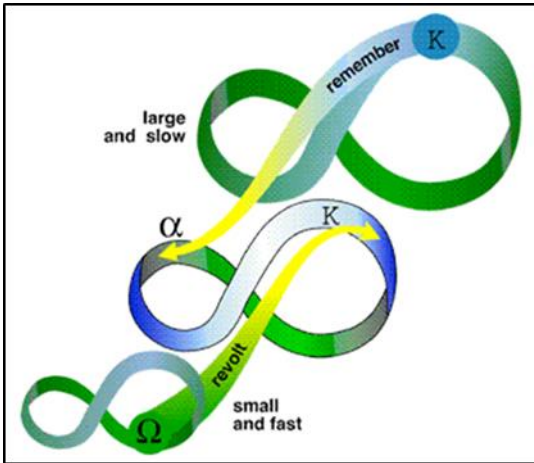


Figure 3. Figure representing the panarchical connections of adaptive cycles. Extracted from Holling and Gunderson (2002).

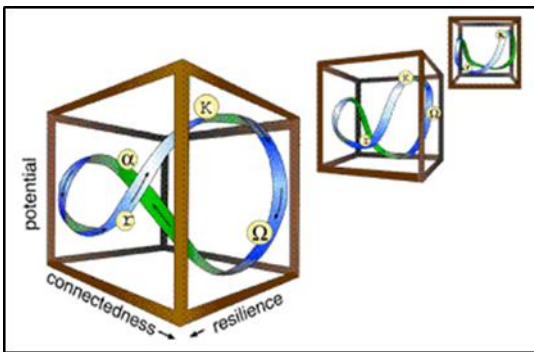


Figure 4. Figure representing the adaptive cycle, its four stages, and the three boundaries. Extracted from Holling et al. (2002).

Social-ecological resilience theory has been advanced by extensive research (Berkes et al., 2003; Holling & Gunderson, 2002; Holling et al., 2002), that has improved understanding of the concept and how to operationalise it, such as: the role of social learning (Kraker, 2017), the effects of globalisation on socio-ecological systems (Young et al., 2006), mental models and knowledge system integration (Folke, 2006; Van Riper et al., 2018), and the importance of incorporating traditional ecological knowledge (Folke, 2004), amongst other issues.

However, as useful and valuable as the SES concept has been to progress resilience thinking, recent literature has also warned about the limitations of uncritically adopting and following SES resilience rhetoric. This emerging literature points out that such SES resilience discourse is dangerously narrow because it does not effectively integrate cornerstone social science concepts, such as power relations, democracy, moral rights, subjective worldviews, and collective action (Boonstra, 2016; Duit et al., 2010; Fabinyi et al., 2014). These are foundational concepts for understanding the social, economic, and political conditions that shape social vulnerability (Phillips & Fordham, 2010; Smit &

Wandel, 2006). Understanding and incorporating social vulnerability and its economic and socio-political drivers is crucial for understanding practical community resilience processes such as the Waimakariri District's post-Canterbury earthquake sequence situation, and for progressing resilience thinking beyond ecological perspectives. What is more, uncritical conceptualisations of SES can reinforce the status-quo, and the underlying hegemonies such as neoliberalism that may compound social fragmentation, inequality, and thus social vulnerability (Chandler, 2014; Cretney & Bond, 2014; Joseph, 2013; Nelson, 2014). The concept of community resilience needs to provide a conceptual and operational framework that acknowledges and integrates these fundamental concerns, and expand resilience thinking beyond natural science framings of SES.

2.2.3. Community resilience

As highlighted previously, the conceptualisation of SES is rooted in ecology, with insufficient integration of core concepts from the social sciences (Davidson, 2010). To address this shortcoming, the concept of community resilience has been developed. According to Berkes and Ross (2013), this concept was built upon the convergence of several schools of thought, mainly, the concept of socio-ecological resilience (Berkes et al., 2003; Gunderson & Holling, 2002; Holling, 1973), and a range of social constructs that explore individual and community mechanisms to navigate adversity, like community development (Paton & Johnston, 2001) and community self-organisation (Norris et al., 2008). Community resilience can be synthetically defined as the ability of any given community to actively mobilise resources to change and adapt in the face of multi-scalar uncertainty and changing social and ecological conditions in order to reach sustained, higher levels of community well-being (Berkes & Ross, 2013; Kulig et al., 2008; Magis, 2010; Norris et al., 2008; Paton et al., 2006; Pooley et al., 2006). There are five conceptual pillars inherent in this definition: community, community well-being, adaptation, scales, and resources, each of which will be described below.

Discussions about the concept of 'community' are not new. Numerous works have been published on the subject and definitions are abundant and diverse, but some generalities can be synthesised. The conceptualisation of 'community' has generally centred on the type of relationships that we establish with ourselves and with our environment (Tonnies, 2001). Typologies of these relations have been developed (Tonnies, 2001; Weber, 1978), but, although useful, these typologies have been critiqued and are considered by some to be overly simplistic, utopian, and dichotomic. For instance, through these typologies 'society' is presented as a self-serving and rational form of collective; and 'community' is an altruistic form of collective constructed on shared feelings of

purpose and identity (Puddifoot, 1995). Empirical evidence suggests that communities work in a much more complex interweaving of power relations. Although homogenous in broader aspects, such as communitarian sharing of spatial boundaries, interests, norms, values, and cultural identities, power relations can also shape internal heterogeneity that contributes to significant inequalities. Such inequalities, through force of tradition and monopolisation of power, can become rigid, and very hard to dismantle (Agrawal & Gibson, 2001; Dalby & Mackenzie, 1997; Grodzins-Gold, 2001; McMillan & Chavis, 1986; Murphree, 1994; Nisbet, 1953, 1966; Pooley et al., 2006; Puddifoot, 1995). In addition, ecological elements can be incorporated into conceptualisations of community, for example through animism (Clammer, 2004), and the integration of, amongst others, plants, animals, rivers, mountains, and forests either as active and living members, or as significant spiritual elements of the community (Berkes & Ross, 2013; Descola & Palsson, 1996; Greider & Garkovick, 1994; Johnson & Murton, 2007; Kawharu, 2009; Norris et al., 2008; Pierotti & Wildcat, 2000; Salmón, 2000). These various elements enable communities to be framed and defined as SESs, and provide an opportunity to consider the well-being of a community beyond the human elements. An example of this can be found in the agreement between Ngā Iwi o Taranaki and the Crown where the well-being of Mt. Taranaki and its status as tupuna² is highlighted (Ngā Iwi o Taranaki and The Crown, 2017). Synthetically, it can be argued that communities are more than just an aggregate of individuals, communities are built upon multiple, complex, and heterogeneous social-ecological relations that allow beings to transcend from an individualistic form of self-awareness towards a collective perception of existence. The link between community resilience and community well-being warrants further exploration.

Community well-being is an important element in some of the community resilience literature (Miles, 2015; Pooley et al., 2006). Although the concept of community well-being is pervasive in academic literature and real-world policy provisions, a universal agreed upon definition is elusive for the concept is highly subjective and context dependent (Brown & Westway, 2011). Lee and Kim (2014) developed a framework to analyse community well-being definitions based on two variables: level of analysis (collective vs. individual), and scope of analysis (partial vs. comprehensive). They found that community well-being is most frequently defined as a multi-dimensional aggregation of individual well-beings. Although useful, this interpretation is contrary to the common understanding of community as being more than an aggregate of individuals. However, Lee and Kim (2014) also

² Singular and plural Te Reo Maori term for ancestor(s).

found that a few definitions conceived community well-being from a more comprehensive and collective perspective. From these definitions, one stands out as both practical and accurate in reference to the relational idea of community presented in this thesis. The definition is as follows:

The term 'community wellbeing' encompasses the broad range of economic, social, environmental, cultural and governance goals and priorities identified as of greatest importance by a particular community, population group or society (Cox et al., 2010, p. 72).

This definition is particularly relevant to this thesis because it recognises that 'community' is more than the sum of individual parts, and places emphasis on the well-being that stems from the perspective of the collective decision-making process rather than on the outcome per se. A further rationale is that the definition integrates the multiple layers (economic, social, environmental, cultural, and governance) that shape community capacity and community competence to adapt and thrive in an ever changing socio-ecological environment. A final justification is that by focusing on the decision-making process rather than the specific outcome, the definition successfully integrates subjectivity into the conceptual construct, acknowledging community well-being is shaped by context.

These last points are particularly important because there are many social phenomena that manifest a tendency to foster resilience for a segment of society but impose severe loss of well-being on others. Exemplars include poverty and inequality, authoritarian governance structures, and mafia organisations, all of which are highly resilient but are not desirable in a broader community well-being context (Agreste et al., 2016; Berkes & Ross, 2013; Hayward, 2013). As resilience can operate to facilitate the strengthening and degradation of community well-being, clarification of how subjectivity and decision-making processes can shape resilience building efforts is important in order to foster equitable community resilience building processes (Martin et al., 2018). Considering community well-being in the context of adaptive capacity and panarchies is equally as important, and this will be explored further.

Norris et al. (2008) assert that community resilience and adaptive capacity are synonymous. Community resilience can be interpreted as a '(...) *measure of how well people and societies can adapt to a changed reality and capitalise on the new possibilities offered. To accommodate the former the definition of resilience used here embodies the notion of adaptive capacity*' (Paton, 2006a, p. 8). This interpretation highlights the issue of scale (panarchies), and differentiation between individual and collective adaptive capacities allowing the construct of community

resilience as more than just an aggregation of resilient individuals. This is important to consider because cooperation through relational links between individuals can substantially increase the resilience capacity of the whole community (Norris et al., 2008; Paton, 2006b). As Brown and Kulig (1996/1997) state: *'People in communities are resilient together'* (p. 43).

From a panarchies perspective, individual, community, regional, and global scales (amongst others) are nested systems that are undeniably linked. Therefore the relation between individual, community, and other scales is a significant and non-trivial element to bear in mind in the operationalisation of community resilience (Berkes & Ross, 2016; Boon et al., 2012; Wilson, 2012). An example that links individual and community levels is the sense of belonging and attachment to community as a supra individual entity. This sense of community ties individuals to the collective and is grounded in the psychological concept of a sense of community (McMillan & Chavis, 1986), which has four components: membership (shared history, emotional safety, common symbols, and personal investment); influence (two way process in which the individual has an influence on the community and vice versa); integration and fulfillment (both individual and collective needs can be fulfilled at the same time); and shared emotional connectedness (the bond between members of community through important events) (McMillan & Chavis, 1986; Pooley et al., 2006). Another element of adaptive capacity and panarchies that needs to be considered in conceptualising community resilience is 'resources' which in SES thinking is closely linked to 'potential', one of the three variables that underpin adaptive cycles.

Resources constitute a key element in many conceptualisations of community resilience (Berkes & Ross, 2013; CCCR, 2000; Magis, 2010; Miles, 2015). As an exemplar, community resilience can be seen as the *'existence, development and engagement of community resources by community members to thrive in an environment characterised by change, uncertainty, unpredictability and surprise'* (Magis, 2010, p. 402). Thus, community resilience encompasses the ability to intentionally take collective action towards common goals and mobilise personal and collective capacities and resources to respond to change (Berkes & Ross, 2013; CCCR, 2000). Magis (2010) presents eight dimensions associated with resources that compose community resilience: Community resources; development of community resources; engagement of community resources, active agents; collective action; strategic action; equity, and impacts. The focus on resources and actions is found in the work of other theorists. Following the ideas of Brown and Kulig (1996, 1997), and drawing from community development literature, Pooley et al. (2006) refer to three operationally useful

elements of community resilience that clearly relate to resources, community capacity, community competence, and community sustainability, which require further consideration.

Community capacity emphasises community members' capacities, skills, assets or resources which they can use to effectively solve problems (Brown & Kulig, 1996-1997; Buckle, 2006; Magis, 2010; Pooley et al., 2006); *Community capacity is the interaction of human capital, organisational resources, and social capital existing within a given community that can be leveraged to solve collective problems and improve or maintain the well-being of a given community* (Chaskin, 2001). This quote shows the very close relation between 'community capacity' and 'resources' by highlighting how resources are centrally placed to 'solve collective problems' and secure community well-being. Similarly, Norris et al. (2008), building on Bruneau et al. (2003), proposed a dynamic framework based on four attributes (robustness, redundancy, rapidity, and resourcefulness) to explore, amongst other things, how resources may be mobilised when conditions threaten the community, thus building community resilience. However, the volume, diversity and resilient characteristics of community resources alone do not advance understanding about ways to build community capacity. A further consideration is the equitable distribution of resources within communities (Norris et al., 2008) because disaster research literature, amongst others, indicates that societies do not distribute risk evenly. In addition, individuals from lower socio-economic contexts and poor communities are usually exposed to higher levels of risk, and experience the worst psychological and material consequences of disasters (Norris et al., 2008; Cutter et al., 2014; Tobin & Whiteford, 2002). So, the equitable distribution of resources in response to variable levels of risk is essential for building community capacity, and thus, community resilience.

Although community capacity is essential for community resilience, having the ability to mobilise capacity into action is equally important, and this activity is referred to in the literature as community competence. Brown and Kulig (1996/1997) define community competence as a '*process by which groups, communities, and aggregates work together to identify problems and needs of the community. This process includes agreeing on goals, priorities, and implementing specific strategies to meet the problems*' (p. 33). Elements such as commitment, self-other awareness, articulateness, effective communication, conflict containment and accommodation, participation, management of relations with larger society, social support, and machinery for facilitating participant interaction and decision-making, are some of the pillars onto which community competence can be built (Brown & Kulig, 1996-1997; Eng & Parker, 1994; Norris et al., 2008; Pooley et al., 2006). Other

researchers, such as Norris et al. (2008), also include the abilities to construct and engage in group processes, navigate through conflicts, collect and analyse data, and resist undesirable influences. Therefore, community competence may be understood as the ability of community members to access and use resources to facilitate reasoned decisions that move the community towards collectively developing the most competent adaptive strategy for facing adversity and putting the strategy into action (Davidson, 2010; Iscoe, 1974; Paton et al., 2006; Sonn & Fisher, 1998). Norris et al. (2008) suggest that access to and use of community resources is usually shaped by collective action and decision-making, both of which, according to these authors, are built upon collective efficacy and empowerment or self-enablement.

Collective efficacy and self-enablement are highlighted by Norris et al. (2008) as important elements of community competence. Collective efficacy can be constructed as a combination of trust, and willingness to work collaboratively for the common good of the community (Perkins et al., 2002; Sampson et al., 1997). Self-enablement is the process through which community members who miss an equitable share and access to resources gain power over the resources from which they are being excluded (Rappaport, 1995). Community self-enablement can be enhanced by community development contexts where certain social conditions prevail, such as: community participation, enhanced perceived control, facilitation of community identification of problems, and developing problem solving strategies (Paton, 2006b; Paton & Bishop, 1996; Paton & Johnston, 2001). In contrast, social contexts where conflicts and mistrust predominate, community competence is hindered and thus the communities' ability to successfully face change, transform, and adapt is constrained (Paton et al, 2006).

In summary, human actions are dependent on community decision-making processes. These processes are in turn dependent upon the following: information individuals have access to; how they perceive its legitimacy and the legitimacy of the source; information complexity; information consistency with personal expectations and/or the extent to which it damages personal interests; and the presence of communal narratives that give the information meaning to the individual (Lubell, 2002; Norris et al., 2008; Paton et al., 2006; Seguin et al., 1999; Spash, 2002). Other elements that inform human decision-making processes that lead to individual and collective actions are found in the diverse cultural worldviews (values, norms, attitudes) present in a community, such as symbolic and cognitive environmental attitudes, shared personal and collective environmental and social values (e.g., sense of responsibility to others, concern for social and environmental justice),

and value prioritisation processes (Buckle, 2006; Corral-Verdugo, 2002; Jurin & Fortner, 2002; Kals & Russell, 2001; Lubell, 2002; Montada & Kals, 2000; Nordlund & Garvill, 2002; Paton et al., 2006). As value prioritisation processes are so important for community competence and resource mobilisation, further exploring the values underpinning community inter-generational sustainability is important, and this will be discussed in the following paragraph.

One interpretation of community sustainability is that it refers to the capacity of communities to access and use their resources in alignment with sustainability values. Exemplars include working towards inter-generational self-reliance, harmonising with nature, attaining community control, meeting individual needs, and building community culture (Brown & Kulig, 1996-1997; Pooley et al., 2006). Therefore, the key focus of such aims is achieving goals that enable communities to adapt to social-ecological changes across generations. A community member's involvement in activities that aim to look after their community's socio-ecological environment has been shown to help maintain social cohesion, improve social networking and strengthen people's attachment to place (Paton et al., 2006). This attachment to the socio-ecological environment that constitutes place also underpins community members' perceptions that they have investment in the community, which in turn stimulates motivation to protect the community's socio-ecological environment (Paton et al., 2006). Moreover, socio-ecological sustainability relies deeply on notions of inter-generational equity and fairness, as well as social justice principles to guide acceptance or risks, and associated decision-making processes that increase community awareness of the trade-offs involved in decision-making (Paton & Bishop, 1996; Paton et al., 2006).

The preceding discussion has focused on exploring definitions of community resilience and reviewing the main conceptual elements that underpin the concepts of Resilience, SES resilience, and Community Resilience. All of these concepts were important to be explored because they provide part of the conceptual elements to understand the story that unfolded in the Waimakariri District post-2010 and 2011 Canterbury earthquake sequence. The next section of this chapter explores ways in which these concepts are integrated into community resilience models and the introduction of the concept of capitals in the community resilience literature.

2.2.4. Community resilience models and community capitals

Several models (Boon et al., 2012; Cutter et al., 2008; Miles, 2015; Norris et al., 2008; Paton, 2006b) have emerged in recent years where all, or at least some, of the ideas and concepts presented in the previous paragraphs are put into operation. A previous section of this chapter described adaptive capacity as the ability of communities to adapt to changing environments (Paton, 2006a, p. 8). Paton (2006b) proposed a model of adaptive capacity building where community competence, community capacity, community empowerment, and conflict resolution mechanisms can be drawn on to enhance community adaptive capacity. Another example of a framework to operationalise resilience is the model of community resilience presented by Norris et al. (2008) where a process of stress, crisis, resistance and/or transient dysfunction, leads to an adapted outcome of community resilience or a return to pre-event functioning. This model does not follow the idea of multiple stable states and transformations that are predominant in the community resilience research literature. In contrast, it appears to be based on the conceptualisation of resilience as being aligned with the idea of stability and ability to 'bounce back'. Further to the work of Norris et al (2008), Cutter et al. (2008) has proposed a disaster resilience of place (DROP) model that merges six community resilience indicators that reflect six different dimensions (ecological, social, economic, institutional, infrastructure, and community competence) into a cyclical dynamic. Another perspective is taken by Boon et al., (2012), who present a model of how community resilience operates through various levels, micro (individual), meso (individual relations), exo (entities and organisations), and macro (cultural fabric), as well as chrono, through time. In addition, Miles (2015) integrates a comprehensive understanding of resources through the use of the community capitals concept. Although the introduction of the idea of capitals into the study of community resilience is not new (Cutter et al., 2014; Kenney & Phibbs, 2014; Norris et al., 2008; Stokols et al., 2013; Wilson, 2012, 2010), his proposed model is made more elaborate by including Flora and Flora's (2013) seven community capitals. These capitals have been classified as social, political, cultural, human, economic, built, and natural capitals from which services are provided to the community. At this point, it is important to also note that although intended to mean different things, the terms 'assets', 'resources', and 'capitals' are often conflated in the community resilience literature. To avoid confusion, it is necessary to clearly establish the boundaries and relations between these terms.

Flora and Flora (2013) use resources and assets as synonyms, but they distinguish capitals as *'resources, or assets, invested to create new resources'* (p. 10). Berkes (2007) uses the term

'resources' to refer to 'capitals', and Norris et al. (2008) equate 'resources' to 'assets' by stating that 'resources' are *'objects, conditions, characteristics, and energies that people value'* (p. 131). Miles (2015) clearly distinguishes capitals from other terms, but also uses the term 'assets' to refer to 'resources': *'capital refers to a stock of assets used to create or obtain additional assets or derive services'* (p. 110). Due to inconsistencies in use of these terms in various community resilience models, and the potential for confusion to arise, it is important to clearly distinguish each term. Taking into account the varied definitions in the community resilience literature, and the need for unambiguous plain language definitions, in this research the Oxford Dictionary definitions are used to distinguish these terms. According to Oxford Dictionary, assets are defined as elements valued by people, communities and organisations; resources are defined as assets in use; and capitals are resources used for the specific purpose of generating other or more resources.

Miles (2015) explicitly refers to capitals in relation to 'community capitals', but there is a lack of clarity about what exactly this term means and what kind of empirical evidence can be found to support its definition and characteristics. Flora and Flora (2013), who Miles (2015) recognises as having explored the concept of 'community capitals' in the context of rural communities, state that: *'Although some scholars define these [capitals] as individual characteristics, the authors find it useful to see them as community or group properties'* (p. 10). Defining 'community capitals' as community properties is useful but lacks conceptual depth. Using Flora & Flora's (2013) definition, Miles (2015) states that the construct of community capitals refers to *'any asset, whether corporeal, material or non-material, that is utilised as a part of the metabolic flows supporting human settlements'* (pp. 110-111), furthermore, he adds; *'There is no accepted set of community capital variables'* (p. 111). From the field of community development, Pigg et al. (2013) further argue that 'community capitals' can be understood as *'forms of "capital" existing in communities that can be used individually and in combination to produce community change'* (p. 492). Additionally, Pigg et al. (2013) also note that although some authors have explored the ways in which these 'forms of capital' relate to each other (Emery & Flora, 2006; Macias & Nelson, 2011; Stofferahn, 2012; Sturtevant, 2006), further empirical evidence is needed to develop the foundations of this concept from a relational and critical perspective.

This gap in the community resilience and community capitals literature is what this research aims to fill by, firstly, exploring the how capitals are conceptualised, and then, secondly, empirically verifying how these conceptual categories relate to each other by analysing the different voices

recorded during fieldwork in the Waimakariri District. In the following sections this theoretical gap in the literature will be addressed by explicitly integrating the capitals concepts through a critical review of the evolution of capitals and integrated multi-capital frameworks.

2.3. The 'capitals' concept: a critical review

Integrated capital frameworks, such as the one presented by Flora and Flora (2013), models popularised in community resilience literature internationally (Cutter et al., 2014; Miles, 2015; Norris et al., 2008; Stokols et al., 2013), and nationally in New Zealand (Stevenson et al., 2015a, b; Ivory et al., 2015), are products of theoretical and empirical analysis that trace back to the conceptualisation of capital itself (Smith, 1982). However, the process through which integrated multi-capital frameworks emerged did not come forth until after the early 1970s, when the hegemonic neoliberal model of economic development began to receive criticism for its contribution to and failure to respond to the consequences of the social and environmental crises that emerged in the last decades of the 20th Century (Carson, 2000; Daly, 1990; Ekins 1992; Meadows et al., 1972).

In an attempt to understand and overcome these social and environmental challenges, the concept of capital was extended by incorporating other dimensions of human life under the traditional economic conceptualisation of capital. Importantly, three distinct processes developed simultaneously with emerging conceptualisations of capital, namely the development of: (1) theoretical and empirical foundations of existing individual capitals; (2); integrated multi-capital frameworks, and (3) new forms of capital that emerged from debates about how to conceptualise capitals. This review of capitals concepts identified a total of ten integrated multi-capital frameworks, and twenty capitals. From these twenty capitals, only three have been systematically incorporated into integrated multi-capital frameworks (economic, social, and natural capitals). The other capitals, have been either incorporated recently, or have only been applied marginally or superficially in the past (Figure 5).

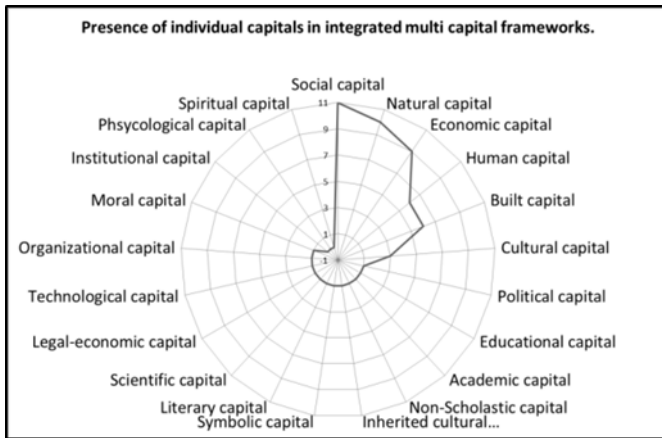


Figure 5. This figure shows capital types identified in literature by presence in multi-capital frameworks (figure developed by Martin Garcia Cartagena).

In the following sections each of the individual capitals identified, and the theoretical debates that inform each one of them, will be briefly outlined. Emerging integrated multi-capital frameworks that combine the use of individual capitals will be presented, and some forms of capitals that have recently emerged from capital discussions will be described. This multi-capital section will conclude with a brief reflection on the ways which all these elements can be brought together to strengthen the multi-capital concepts in the context of community resilience.

2.3.1. Capital

The first term that needs to be examined is the cornerstone to this entire analysis, the idea of capital itself. Adam Smith (1723-1790) introduced and developed the idea of capital as foundational for economics ('political economics' at the time), as a part of what he referred to as 'stock', shaping the basis for the idea of economic and financial capital as we know it today. According to Smith, stock is composed in part by the possessions of people that serve the purpose of fulfilling immediate consumption needs. Another component of stock comprises possessions that are accumulated beyond immediate consumption needs and used to procure a profit. This latter component is what Smith (1986) referred to as capital. Smith's (1986) definition has had a significant impact on the development of integrated multi-capital frameworks, and is the foundation for the development of other forms of capitals. Taking into account this foundation, and the various ways in which scholars have defined capital, a widely agreed framing of capital is the physical or metaphysical resources or assets (tangible and intangible) that can be invested or transformed to generate new or more resources. (Becker, 1993; Bourdieu, 1986; Coleman, 1988; Ekins, 1992; Flora & Flora, 2013; Marx, 1867; Ostrom, 2003; Porritt, 2005; Samuelson & Nordhaus, 2010; Scoones, 1998; Wilson, 2010;

Smith, 1986). However, the capital concept has been extended to encompass a wide range of ‘core’ capitals.

2.3.2. The core capitals

From the twenty forms of capitals identified in literature, six appear to be most frequently used in integrated multi-capital frameworks: economic, built, natural, human, cultural, and social capital (Table 1).

Table 1. Synthesis of definitions and debates on the most commonly used forms of capital.

Type of capital	Definition	Author/Year
Economic capital	In general terms both economic and financial capital are used to refer to the same type of capital, highly liquid resources (cash or equivalent) that contribute to the circulation of all forms of capital through consumption and production processes that enable people’s livelihood strategies	DFID, 1999; Flora & Flora, 2013; Porritt, 2007; Samuelson & Nordhaus, 2010; Wilson, 2010, 2012
Built capital	Built capital, manufactured capital, and physical capital are usually used indistinctly to refer to human constructed infrastructures (tools, machines, buildings, technologies, roads, bridges factories, etc.) used in production processes and to sustain human livelihoods	DFID, 1999; Ekins & Medhurst, 2006; Flora & Flora, 2013; New Zealand Treasury, 2011; Porritt, 2007
Natural capital	A way to assign value to natural resources (renewable and non-renewable) in order to incorporate them into national accounting systems, as well as private business accounts	Ahnad et al, 1989; Fisher & Krutilla, 1975; Solow, 2014; Thampapillai & Uhlin, 1997; Tietenberg & Lewis, 2015
	Natural capital, especially ecosystem services, as a fundamental factor for human well-being, health, livelihoods and survival. Some resources referred to as critical natural capital cannot be replaced if they are totally depleted	Constanza et al, 1997, 2014; Daly, 1990; Deutsch, Folke & Skanberg, 2003; Ekins, 1992, 2003; Millenium Assessment, 2005; Pelenc & Ballet, 2015
	The natural capital approach (commodification and pricing of nature) deprives and disregards the inalienable right of nature to exist independent of any economic valuation or service that it may or may not provide humans	Barnhill & Gottlieb, 2001; Gudynas, 2000, 2011; Manbiot, 2014; Naess, 1989; Oelschlaeger, 2014
Human capital	Assets that a person possesses such as health, formal education, skills, and knowledge, that enable an individual to be more innovative and productive	Becker, 1993; Blair, 2011; Flora & Flora, 2013; Porritt, 2007; Stroomberger et al., 2002
Cultural capital	Associated with subjective cultural interpretations of reality. Values through which we judge and construct our worldview, and it can exist in three forms: 1) Embodied states such as ideas, beliefs, traditions, values; 2) objectified states such as pictures, books, dictionaries, machines, sculptures, etc.; and, 3) institutionalized state such as educational qualifications	Berkes & Folke, 2013; Bourdieu, 1986; Flora & Flora, 2013; Throsby, 1999
Social capital	Although the concept has been stretched out and applied to almost all areas of social life across the globe, the core element of the concept continues to be the same: trust, formal and informal institutions, norms and obligations, networks, and individual and collective actions	Coleman, 1988; Fukuyama, 1995, 2000; Gambetta, 1988; Granovetter, 1973; Lin, 1999; Putnam, 2000; Ostrom & Ahn, 2003

Starting with economic capital, the following paragraphs will describe in general terms how each of these capitals has been conceptualised in literature, the theoretical debates behind each one, and why they are important for conceptualising community resilience.

Economic and financial capital³ is the oldest form of capital conceived and one of the most theoretically and empirically developed capitals (Smith, 1986), and its evolution has been twofold. Firstly, it provided the basis for the idea of capital itself as described earlier, and secondly, and with the diversification of capital conceptualisations, it also evolved as an individual capital.

In general terms, economic capital, is used to refer to highly liquid resources (cash or equivalent) that contribute to the circulation of all forms of capital through consumption and production processes that enable people's livelihood strategies (DFID, 1999; Flora & Flora, 2014; Porritt, 2007; Samuelson & Nordhaus, 2010; Wilson, 2010, 2012). Some researchers (Bourdieu, 1986; Flora & Flora, 2013; Porritt, 2007) agree that although economic capital has no productive value in itself, its importance derives from its dynamic nature and its capacity to act as a means for the transformation and circulation of all other type of capitals. However, from a Marxist point of view, economic capital does have production value.

Marx (1867) argued that the traditional 19th century economic models worked under the assumption that money is at the service of production, only valuable as a transaction tool to buy commodities in order to increase production. For example, in his C-M-C model, commodities (C) are sold for money (M) which in turn is used to buy more commodities (C). However, Marx' critique made in 1867, stated that money in a capitalist system becomes a means of production in itself. The commercial practice of using money to buy commodities in order to sell them later on for a profit (without any major transformations of the commodity itself), implies that money has productive value in the eyes of the capitalist (the M-C-M model). In any case, regardless of the production capacity of economic capital, it is widely accepted and recognised as a form of capital that allows all other forms of capital to circulate across society.

The importance of incorporating this form of capital into community resilience framework has been noted across a wide array of literature and can be understood to underpin the concept of community capacity (Cutter et al., 2014; Magis, 2010; Wilson, 2012). The availability and access to

³ The term economic capital has a broader connotation than financial capital because the former refers to ... and the latter refers to The former and will be used in the remainder of the thesis.

economic capital across a community significantly increases capacity in societies that heavily rely on this type of capital as the main form of exchange. For example, the delay or non-access to economic capital in the form of insurance pay-outs after disasters can have a major impact on the recovery process of communities after disasters, causing increased post-event stress and delays in housing rebuilds (Brookie, 2012; Wood et al., 2016). This also shows that although economic capital is important, built capital is also key (housing rebuild), and this form of capital (built) will be discussed next.

Built capital, manufactured capital, and physical capital are usually used interchangeably to refer to human constructed infrastructures (e.g., tools, machines, buildings, technologies, roads, bridges factories) that are used in production processes and to sustain human livelihoods (DFID, 1999; Ekins & Medhurst, 2006; Flora & Flora, 2013; New Zealand Treasury, 2011; Porritt, 2007). Much of the literature on economics has focused on the productivity capacity of this type of capital as an indicator of growth and development (Bishnu, 2013; Turner et al., 2013; Schundeln, 2013). However, recently, the literature has expanded the scope of built capital to include the capacity to sustain livelihoods, that is, to sustain life (DFID, 1999). Researchers such as Flora and Flora (2013) have taken a similar approach to the one developed by the Department For International Development (DFID) (1999) by stating that this kind of capital is often associated with community development. They argue that the existence and abundance of built capital does not guarantee community well-being, and that built capital can only be effective when it generates positive inputs across all other types of capital (Flora & Flora, 2013).

In terms of community resilience, built capital is also often associated with what is commonly referred to as infrastructural lifeline systems that ensure the provision of water, energy, transport, telecommunication and disposal systems, all of which are important to successfully overcome unexpected shocks in communities, and are also tied to community capacity (Hamada & O'Rourke, 1992; Kameda, 2000; Magis, 2010; O'Rourke, 2007; Omer et al., 2009; Rose et al., 1997). While built capital is key for community capacity, so is natural capital which emerged in response to strong criticism of the neoclassical economic models and the environmental degradation that began to be noticeable at a global scale in the 1960's and 1970's (Carson, 1962). As a response to criticisms, economic scholars began to incorporate environmental variables into neo-classical economic models and as a result the term natural/environmental capital was coined and developed.

This new concept became very popular amongst economists and it was typically defined as renewable and non-renewable natural resources, such as biodiversity, soils, water, forests, and different forms of minerals, as well as ecosystem services, such as absorption, neutralisation or recycling of waste, climate regulation, and others (Constanza et al, 2014; Flora & Flora, 2013; Porritt, 2007; Thampapillai & Uhlin, 1997; Wilson, 2010, 2012). Although the definition is generally agreed upon by most economists, the concept is contested by some economists like Gudynas (2004). Additionally, philosophical challenges have emerged about how to apply this concept. Gudynas (2004) suggests contending views arise from two contrasting schools of thought: environmental economics (associated with 'weak sustainability'⁴), and ecological economics (associated with 'strong sustainability'⁵) that are described in the following section.

Environmental economics, was framed by neoclassical assumptions (e.g., individualism, self-serving interests, competition, rational choice), and only incorporates natural capital as a way to assign value to natural resources (renewable and non-renewable). This enables the incorporation of natural resources into national accounting systems, as well as private business accounts, and is underpinned by the perspective that nature is a mechanical human controlled object that provides resources for production and consumption (Ahnad et al, 1989; Fisher & Krutilla, 1975; Solow, 1992; Thampapillai & Uhlin, 1997; Tietenberg & Lewis, 2015). The emergence of ecological economics presented a more critical perspective. Natural capital, especially ecosystem services, is positioned as a foundation for human well-being, health, livelihoods and survival (Constanza et al, 2014; Porritt, 2007). This conceptualisation also adopts a complex socio-ecological systems perspective and argues that some resources referred to as critical natural capital cannot be replaced if they are totally depleted (Constanza et al, 1997, 2014; Daly, 1990; Deutsch, Folke & Skanberg, 2003; Ekins, 1992, 2003; Millenium Assessment, 2005; Pelenc & Ballet, 2015). However, some authors (e.g., Gudynas, 2000, 2011; Naess 1989) are critical of the natural capital construct, and argue the commodification and pricing of nature deprives and disregards the inalienable right of nature to exist independent of any economic valuation or service that it may or may not provide to humans. These authors (e.g., Barnhill & Gottlieb, 2001; Gudynas, 2000, 2011; Manbiot, 2014; Naess, 1989; Oelschlaeger, 2014) also argue that the incorporation of the natural capital concept as a market

⁴ Weak sustainability refers to environmental economics approach to achieving sustainability through the integration and internalisation of nature into the market (Gudynas, 2004).

⁵ Strong sustainability refers to the ecological economics acknowledgement of nature's intrinsic values and rights (Gudynas, 2004).

mechanism for ecosystem conservation does not offer a solution. They also assert that this framing fosters a 'business as usual' approach that perpetuates the failures of neoclassical economic models, thereby sustaining the status quo and existing social and economic inequities.

The widespread application of the natural capital concept in environmental literature has contributed to uptake in the community resilience literature where it is associated with community capacity and has been recognised as key for community resilience building processes (Cutter et al., 2014; Miles, 2015; Stokols et al., 2013). Natural capital's sustainable and strategic use and conservation is perceived as essential for providing buffer zones for some extreme events and, above all, for sustaining life on the planet (Cutter et al., 2014; Miles, 2015; Stokols et al., 2013). As an exemplar, in August 2016, a news piece reported the case of a *Campylobacter* infection outbreak in the Canterbury community of Darfield which affected the provision of fresh water to this community (Mitchell, 2016). This same community was deeply affected by the September 2010 Canterbury earthquake (Gledhill et al., 2011), and the lack of fresh water provision due to environmental degradation of fresh water sources could reduce its resilience. According to the report, the sudden decrease in water quality of the Waimakariri River (combination of heavy rain and livestock practices on the margins of the River), together with technical errors of the water treatment systems ended up causing 138 cases of campylobacter infection in the community. Similar situations have also been noted across other parts of the Canterbury region (Small, 2016). Such occurrences significantly affect the resilience capacity of the region as access to clean water sources has been identified as a prime element to enhance public health and reduce the risk of epidemic outbursts in the aftermath of the occurrence of extreme events such as tsunamis and earthquakes (Gupta et al., 2007; Watson et al., 2007). This last element relates very closely to human capital as well because human health is closely associated with human capital.

The concept of human capital developed in the 1970s, almost in parallel with the emergence of natural capital. The genesis of human capital can be traced back to Adam Smith (1776). It is generally understood to be the assets that a person possesses, such as health, formal education, skills, and knowledge, that enable an innovation and productivity (Becker, 1993; Blair, 2011; Flora & Flora, 2013; Porritt, 2007; Stroombergen, 2002). Becker et al. (1990) defined human capital as embodied knowledge and skills in which individuals decide to invest through rational cost and benefit assessments. This definition, and Becker's (1990) framework, presents a conceptual embodiment of the neoclassical economic view of people who are conceptualised as individualistic, self-serving,

rational economic agents whose purpose is to serve as productive units in the mechanical production processes of capitalism. The practical consequence of this approach is that human capital can be quantified and reduced to a formula that monetises individual life (Becker, 2007). This quantitative approach to assessing human capital has been adopted by many international organisations (e.g. International Monetary Fund, 2004; World Bank, 2014; World Economic Forum, 2015). In New Zealand, the concept of human capital has also been applied by several social and economic research and policy initiatives (e.g., Bedford, 2014; Elkin, 1998; Le et al, 2006; Lees, 2003; Stroombergen et al., 2002). Regardless of its quick proliferation, this rather orthodox approach is subject to criticisms for its reduction of human 'worth' to a financial value. Porritt (2007) quotes an issue of the *New Internationalist* (2001) where the World Bank is mocked for its perspectives on human capital: *'Do the World Bank economists go home at night and tuck up their own units of human capital before reading them a bed-time story?'* (p. 164). Porritt proposed a broader framing of human capital by including the emotional and spiritual capacities that orthodox economists do not include in the commonly accepted human capital framework. However, this approach does not resolve the subjacent issue of conceptualising humans as the labour power of production processes. The inclusion of these new dimensions without modifying the neoclassical view of humanity merely suggests that the production units of the economy appear to have emotions that affect the production system itself.

In the community resilience literature, the concept of human capital has only recently been incorporated as a form of community capacity without regard to the previously mentioned debate and observations (Magis, 2010; Miles, 2015; Stokols et al., 2013). However, some of the ideas on which the concept of human capital is built like concepts from public health and education, have been part of community resilience discourses since this topic emerged as a field of disaster research. Human exposure to bereavement, injury, and life threat during the occurrence of an extreme event, such as an earthquake, are some of the reasons why such events are considered catastrophes and disasters (Oliver-Smith, 2002). Additionally, access to facilities and resources that enhance both public physical and mental health before, during, and after extreme events are elements that constitute, in part, community resilience (Cutter et al., 2014; Miles, 2015; Norris et al., 2008; Stokols et al., 2013).

An alternative, broader and more qualitative perspective on human capital emerged in the 1980s with the conceptualisation of cultural capital (Bourdieu, 1984). This concept is associated with

subjective cultural interpretations of reality, the values through which we judge and construct our worldview, and it can exist in three forms: 1) Embodied states, such as ideas, beliefs, traditions, values; 2) objectified states, such as pictures, books, dictionaries, machines, sculptures; and, 3) institutionalised states, such as educational qualifications (Bourdieu, 1986; Flora & Flora, 2013; Throsby, 1999). Cultural capital emerged from Bourdieu's (1984) scholarship and can be viewed as a critical counterpoint to Becker et al. (1990) notion of human capital.

Bourdieu's (1984, 1986) framing of cultural capital acknowledges that institutional educational achievements are deeply influenced by 'heavily disguised' and sometimes even 'invisible' social conditions, such as social class, access to good food, housing, and high-status cultural activities. This undermines the idea put forward by some orthodox human capital theorists, such as Becker et al. (1990), that some individuals may actually or naturally be more competent than others to perform certain tasks (Bourdieu, 1984, 1986). Bourdieu also posited that cultural capital (as well as social and economic capital) is accumulated and can be transmitted through social relations (social capital), such as family structures and other socio-culturally homogenous networks (Bourdieu, 1984). This capital transmission can enable some individuals and groups to monopolise valuable cultural and symbolic resources systematically facilitating their access to central positions in the field of power. Enacting that power may contribute to social fragmentation and economic inequity. In a way, this process is similar to what will be described in the next section as the 'dark side' of social capital.

Bourdieu's perspective is very well articulated, but systematic reviews of international empirical data seem to undermine Bourdieu's theory of cultural capital and social reproduction theories (Tittenbrun, 2014; Tzanakis, 2011). For instance, criticisms have been levelled by Goldthorpe (2007) and Lareau & Weininger (2003) about the difficulty to obtain empirically consistent measures of metaphysical characteristics (Schuller, Baron & Field, 2000; Throsby, 1999). However, one of the most trenchant critiques is by Latour (2005), who argues that Bourdieu's conceptualisation of capitals constructs actors as '*fully determined*' and mere '*placeholders*' in fields of power denying them of reflexivity and transformative agency (Latour, 2005, p. 155). Regardless of these criticisms, the idea of cultural capital endures in social science (Dumais, 2002; Hanquinet et al, 2014; Lee et al, 2016; Lewicka, 2013; Prieur & Savage, 2013), as well as in the environmental research where Berkes and Folke (1994), among others, introduce it as part of a three capitals formula that enhances the sustainable use of natural capital. In New Zealand, the concept of cultural capital has also been

recently applied as a framework for literacy-related knowledge (Prochnow et al, 2015; Wells, 2012), migrants' cultural contributions to New Zealand (Cruickshank, 2013; Watts, 2004), exploring Indigenous Māori values in capitalistic enterprises (Best & Love, 2010), and heritage building preservation (Marotta et al., 2017). This broader conceptualisation of human capital has rarely been incorporated into community resilience discourses. Only Stokols et al. (2013) and Miles (2015) use the term, but neither researcher appears to grasp the full potential of the cultural capital concept. Stokols et al., (2013), however, associates it with human capital and later presents the concept of moral capital, having disregarded the fact that moral capital emerged from Bourdieu's notion of embodied cultural capital.

Bourdieu was also responsible for introducing the last of the core capitals, social capital which can be understood as durable formal or informal social relationships (networks) built and sustained through mutual acquaintance, recognition, trust, norms, obligations, reciprocity, and collective identity (Bourdieu, 1986; Coleman, 1990; Flora & Flora, 2013; Porritt, 2007). Putnam (2000) identifies two types of social capital: Bonding social capital (interactions within a group), and bridging social capital (interactions between groups). However, Szreter & Woolcock (2004) and Woolcock (2011) also identify linking social capital which can be understood as the social interactions that occur across vertical power structures. Others like Ostrom & Ahn (2003) also explicitly place social capital as the cornerstone for collective action. Although the social capital concept is widely accepted in the social science literature, there are some slight differences, mainly between the authors that developed the term and related variations, namely Bourdieu, Coleman, and Putnam.

Bourdieu (1984, 1986, 1987) had a highly contextualised view of individual behaviour towards building relations, mainly influenced by his ideas of cultural capital, symbolic capital, and social reproduction. Coleman's view was highly influenced by Becker's idea of human capital and followed neoclassical economic models where individuals are seen as rational and self-serving beings, whose decisions are aimed at maximising their benefits in an ahistorical and market society context (Coleman, 1988, 1990). Beyond these differences, both authors perceive social capital as relational networks, a consistent element found throughout conceptualisations of social capital. The relational network construct was picked up by Robert Putnam who adopted a social capital approach to analyse regional governance processes, such as the success or failure of democratic and civic institutions in Italy and the US (Putnam, 1993; Putnam, 2000). Putnam's suggested that social capital

embodied in networks of civic engagement can foster social reciprocity, coordination, communication of information, collaboration, and economic development in communities. In contrast, Ostrom & Ahn (2003) argue that the consequences of accumulation of social capital in small groups can provoke social fragmentation, producing benefits for one group and disadvantages for another. This is what is often referred to as the 'dark side' of social capital (Narayan, 1999).

It is impossible to illustrate all the applications of the social capital concept, but in general terms it has been widely used to explore a diversity of issues associated with education (Algan et al, 2013; Munn, 2000; Field, 2005), immigration (Cyrus et al, 2015; Loizos, 2000; Stolle & Harrel, 2013), and health (Kawachi et al, 1997; Murayama et al, 2012). It has also been drawn on to explore environmental issues (Bodin & Crona, 2008; Ruseva et al, 2016), socio-ecological resilience and natural hazards (Adger et al, 2005; Hawkins & Maurer, 2013; Olsson et al, 2004), as well as community resilience (Aldrich & Meyer, 2015; Berkes & Ross, 2013; Ledogar & Fleming, 2008). In New Zealand, social capital has been used to explore policy issues (Statistics New Zealand, 2002), to assess adolescent well-being and health (Aminzadeh et al, 2013), and to explore environmental policy-making processes (Anstey, 2015). Anstey (2015) used social capital in a Māori cultural context, where *whānau* (family), *whakapono* (trust), *whanaungatanga* (social interaction and connectedness) were documented as the pillars of social life. Although the concept has been expanded and applied to almost all areas of social life across the globe, the core elements encompassed within the concept are consistent, namely: trust (Fukuyama, 1995, 2000; Gambetta, 1988); formal and informal institutions (Putnam, 2000); norms and obligations (Coleman, 1988); networks (Granovetter, 1973; Lin, 1999); as well as collective actions (Ostrom & Ahn, 2003).

In summary, six capitals, i.e., economic, built, natural, human, cultural, and social capitals, can be considered to be the core capitals. The following section will explore how these forms of capital were merged into integrated multi-capital frameworks.

2.2.3. Integrated multi-capital frameworks

After their initial theoretical development, these capitals were merged into integrated multi-capital frameworks. These frameworks (Table 2) aimed to broaden the capitals concept beyond social and neoclassical economic conceptualisations.

Table 2. This table shows the 9 integrated multi-capital frameworks found to be frequently referred to in literature as foundational documents, the funding authors, the year of the publication in which the framework first appeared, and the type of capitals that were incorporated.

Author	Year	Number of Capitals	Type of capitals
Pierre Bourdieu	1986	3	Economic capital
			Social capital
			Cultural capital
Paul Ekins	1992	4	Environmental capital
			Human capital
			Physically produced capital
			Social/organizational capital
Fikret Berkes & Carl Folke	1994	3	Natural capital
			Cultural capital
			Social capital
Ian Scoones	1998	4	Natural capital
			Economic/financial capital
			Social capital
			Human capital
Department for International Development	1999	5	Natural capital
			Financial capital
			Social capital
			Human capital
			Physical capital
John Elkington	1999	3	Economic capital
			Natural capital
			Social capital
Jonathon Porritt	2007	5	Natural Capital
			Human capital
			Social capital
			Manufactured capital
			Financial capital
Geoff Wilson	2010	3	Economic capital
			Social capital
			Environmental capital
Cornelia B. Flora & Jan L. Flora	2013	7	Financial capital
			Political capital
			Social capital
			Human capital
			Cultural capital
			Natural capital
			Built capital
Daniel Stokols, Raul Pérez Lejano, & John Hipp	2013	7	Economic/Financial capital
			Natural capital
			Human made capital
			Technological capital
			Social capital
			Human capital
			Moral capital
Martin Thomas & Mark McElroy	2014	5	Economic capital
			Social & Relationship capital
			Constructed capital
			Economic capital
			Natural capital

The first attempt to move beyond neoclassical economics through a critical perspective was developed by Pierre Bourdieu who presented his initial integrated model of three capitals (Bourdieu, 1984, 1986). Bourdieu's approach was highly qualitative and heavily influenced by the fields of sociology and anthropology, and became one of the most developed forms of integrated capital analysis, and has laid an important foundation on which other critical frameworks would be built.

Later, in the face of growing recognition of the ecological crisis, and influenced by Bourdieu, Ekins (1992) presented a four capital economic model deeply rooted in economics, seeking to incorporate the human and natural dimensions that were systematically left out by neoclassical economic theories for most of the 20th century. This approach critiqued the neoliberal economic model of unlimited growth and set limits to production by incorporating environmental variables into the integrated model being proposed.

Ekins framework would later be used by Porritt (2007) who followed Ekins economic theoretical tradition of criticising fundamental aspects of neoclassical economics (individualism, competition, and inequality) by framing growth as limited by the laws of thermodynamics. Porritt's framing differentiates itself from Ekin's model three ways: 1) by explicitly including financial capital; 2) by moving beyond reliance on economic analysis of each capital, and 3) by providing the first glimpse of moral and spiritual dimensions included in a framework under the category of human capital.

Bourdieu's critical and integral influence also influenced Scoones's (1998) multi-capital approach, which is also informed by the sustainable rural livelihoods approach developed by Chambers and Conway (1991). Scoones's proposal was to integrate five capitals as livelihood resources for rural communities and to focus on the combinations, trade-offs, and trends of each of the five capitals as rural community development indicators (Bebbington, 1999; DFID, 1999; Scoones, 1998). This work became the foundation on which Flora and Flora (2013) would build their community capitals framework.

With reference to the environmental field, the first appearance of an integrated multi-capital framework can be attributed to Berkes and Folke (1994). They proposed a three-capital framework to assess the sustainable use of natural capital. The movement towards application of this framework in the field of community resilience has occurred only recently but there is increasing uptake as stated early in this chapter.

In contrast, business-centred multi-capital frameworks were developed simultaneously, such as Elkington's (1999) *Triple bottom line*, which attempted to broaden business accounting systems by integrating financially quantified social and natural dimensions together with economic capital (three capitals) into accounting systems. Hawken et al. (1999) also pursued a similar path by incorporating notions of natural capital into traditional capitalist business models. These approaches were expanded by McElroy's introduction of the term *multi-capitalism* (Thomas & McElroy, 2014), multi-capital scorecard (McElroy & Thomas, 2015), and by the six capital framework presented by Gleeson-White (2015). However, this expansion was limited, as the framework maintained the simplistic multi-capital framing of business accounting where the 'triple bottom line' is expanded to five capitals instead of three. In addition to these multi-capital frameworks there are also a set of less well-known and emerging forms of capitals that are to be discussed in the following section.

2.2.4. Emerging forms of capitals

Moving beyond of the core capitals and the integrated multi-capital frameworks discussed in the previous paragraphs, there is a set of emerging forms of capital. These forms of capital are synthesised in Table 3. They will be briefly reviewed in this section with an emphasis on two of them: political and moral capitals, which are important elements to explore in relation to the issues of power and moral values that underpin many decisions about resource allocation.

Table 3. Synthesis of definition and debates on the emerging forms of capital.

Type of capital	Definition	Author/Year
Institutional capital	Formal and informal institutional contexts surrounding economic resources that can increase productivity	Bresser & Millonig, 2003; Oliver, 1997; Schneider, 2010
Intellectual capital	Intangible assets of a company such as intellectual property, organisational capital, and the intangible side of human capital	Edvinsson & Sullivan, 1996; Organisation for Economic Co-operation and Development, 1999; Wiederhold, 2013
Organisational capital	Company's embodied systems, procedures, structures, and interpersonal relations	Brynjolfsson et al, 2002; Fu et al., 2016; Tomer, 1998
Psychological capital	Positive traits of human resources such as self-efficacy, optimism, hope, and resilience	Avey et al, 2009; Luthans et al., 2004
Spiritual capital	Religious beliefs	Berger & Hefner, 2004; Finke, 2003; Iannaccone & Klick, 2003
	Attachment to God	Lillard & Ogaki, 2005
	What makes life meaningful	Rima, 2012; Zohar & Marshall, 2004
Legal-economic capital	Set of less developed individual capitals that can be directly associated with Bourdieu's concept of cultural capital	Bourdieu, 1984, 1987
Academic capital		
Non-scholastic cultural capital		
Inherited capital		
Literary capital		
Scientific capital		
Symbolic capital	Symbolic capital is a credit; it is the power granted to those who have obtained sufficient recognition to be in a position to impose recognition. Form that the various species of capital assume when they are perceived and recognised as legitimate.	Bourdieu, 1989
Political capital	Citizen's behaviours, attitudes, organisations, connections, voice and power that allow them to influence government, and turn shared norms and values into institutionalised normative systems.	Booth & Bayer-Richard, 1998, 2012; Flora & Flora, 2013; Sorensen & Torfing, 2003
Moral capital	Norms, values, and ethics that guide individual behaviour and establishes the pillars on which communities are built.	Kane, 2001; Porritt, 2007; Stokols et al., 2013; Wang, 2015

Various capitals have been developed in the field of business management and are used to assess organisational capabilities within companies and businesses. Institutional capital is used to refer to formal and informal institutional (regulatory/normative) frameworks that support economic capital mobilisation within companies in order to increase productivity (Bresser & Millonig, 2003; Oliver,

1997; Schneider et al. 2010). Intellectual capital is used in managerial, business and economic fields to refer to the intangible resources of a company, such as intellectual property, organisational capital, and the intangible side of human capital, such as knowledge (Edvinsson & Sullivan, 1996; Organisation for Economic Co-operation and Development, 1999; Wiederhold, 2013). Organisational capital has evolved as a specific form of social capital tied to management of private sector businesses; it is described as the embodied systems, procedures, structures, and interpersonal relations within a company or companies (Brynjolfsson et al, 2002; Fu et al., 2016; Tomer, 1998). Psychological capital is another form of capital deemed to increase companies' efficiency by enhancing positive traits of human resources such as self-efficacy, optimism, hope, and resilience (Avey et al, 2009; Luthans et al., 2004). Additionally, psychological capital as conceived by Luthans et al. (2004) has also been used in mental health research (Estiri et al., 2016; Leon-Pérez et al., 2016).

Spiritual capital is one of the most recent and less developed forms of capital. Liu (2015) has differentiated three main understandings of spiritual capital: as religious capital (Berger & Hefner, 2004; Finke, 2003; Iannaccone & Klick, 2003); as what makes life meaningful (Rima, 2012; Zohar & Marshall, 2004); and as attachment to god (Lilland & Ogaki, 2005). Rima (2012) states that at the roots of the global financial and ecological crisis lays a metaphysical crisis that is fed by deep moral, ethical and spiritual failures associated with the capitalist, neoliberal model of acquisition, use, and distribution of resources on the planet (Rima, 2012, p. 3). Spiritual capital arguments assert that the causes for humanity's current social-ecological predicament (e.g., global change) are neither ecological nor economical, but are cultural; which Rima (2012) asserts, means moral, spiritual, and political in character (Rima, 2012). Statements such as these highlight the importance of capitals such as moral, political, and symbolic capitals for exploring the metaphysical dimensions of human existence in the unfolding Waimakariri District's post-2010 and 2011 Canterbury earthquake sequence story.

Symbolic capital is a form of capital introduced by Bourdieu that constitutes the base of symbolic power (1989). The possession of symbolic capital enables its bearer to impose their values and worldview onto others. As Bourdieu states:

In the symbolic struggle for the production of common sense or, more precisely, for the monopoly over legitimate naming, agents put into action the symbolic capital that they have acquired in previous struggles and which may be juridically guaranteed. (1989, p. 21).

Therefore symbolic capital can be understood as a credit because its value does not only reside with the bearer of this form of capital, but in the broader social recognition that others have of the symbolic elements from which claims of legitimacy to form, represent, and/or subtly dominate social groups can be made (Bourdieu, 1986, 1989, 1993, 2005).

A further set of less developed capitals are directly encompassed by Bourdieu's concept of cultural capital, including legal-economic, scientific, academic, non-scholastic cultural, inherited, and literary capitals (Bourdieu, 1984, 1987). Although Bourdieu mentions these capitals, he does little to neither explain nor clearly define their boundaries. From these sets of capitals presented in Bourdieu's work, only scientific capital has been relatively widely used, mainly in association with highly technically qualified human resources which reflects the productive units perspective used by neoclassical economists (Bozeman & Corley, 2004; Dietz & Bozeman, 2005).

Finally, there are two individual capitals that have emerged in recent scholarship that require special attention due to their significance for community resilience research: political and moral capitals. In the following paragraphs both forms of capital will be showcased and the reason why they are important will be articulated.

The idea of political capital seems to have emerged as a complement to Putnam's framing of social capital explaining how civil society can influence government (Booth & Bayer-Richard, 1998). The concept then continued to be developed and became defined as citizen's behaviours, attitudes, organisations, connections, voice and power that allow them to influence government, and turn shared norms and values into institutionalised normative systems (Booth & Bayer-Richard, 1998, 2012; Flora & Flora, 2013; Sorensen & Torfing, 2003). This particular form of capital focuses explicitly on the issue of power and power distribution in a given community; something that is closely tied to the idea of community competence. And, although community competence has a long history, its integration into the capital framework through the idea of political capital is an element that is neither well-addressed nor researched, with the exception of Bourdieu.

Moral capital emerged much more recently and it refers to norms, values, and ethics that guide individual behaviour and sets the normative foundation on which communities are built. The concept of moral capital has been a key element in several social processes such as: human production systems (Wang, 2015), sustainable development (Porritt, 2007), political processes (Kane, 2001), and human-environmental resilience (Stokols et al., 2013). It is very important to note that although the specific term ‘moral capital’ has only recently emerged in scholarly literature on capitals, the philosophical issue of morality or moralities has been present in human thought since at least the classical Greek philosophers, and in practice underpins individual and collective decision-making processes. Moral values are also present in the way every form of capital is conceptualised and operationalised. The various framings of capital reflected in different schools of thought and disciplines, like the differences between neoclassical economics, ecological economics, environmental economics, and deep ecologists on natural capital, are a reflection of contending moral values that exist in society and that deeply influence and shape all forms of capital. As Stokols et al., (2013) state; ‘*moral capital is a crucially important, yet often overlooked asset*’ (Stokols et al., 2013), mainly because ‘high’ moral capital would produce a widely shared and consensual basis for community resource mobilisation, as Figure 6 shows. This framing places moral capital at the centre of the resource mobilisation process, or in the centre of the capital flows dynamic.

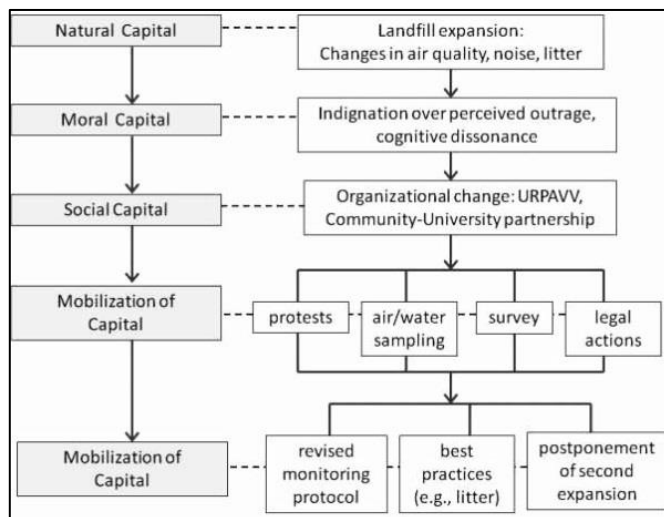


Figure 6. Model of capital mobilisation extracted from Stokols et al. (2013).

Although the ideas of political and moral capitals have only recently been incorporated as capitals concepts, and can be very difficult to grasp, they could provide a valuable foundation to move beyond business as usual integrated multi-capital frameworks, and help underpin and

operationalise community resilience building such as the one that unfolded in the Waimakariri District after the 2010/2011 Canterbury earthquake sequence.

2.4. Community Resilience Capital Framework

In summary, there is a significant amount of literature developed around the idea of integrated multi-capital frameworks, as well as around individual capitals. Empirical evidence supports the utility of applying these frameworks in many different fields. However, although the frameworks are evidently useful, most of them, as well as the individual capitals, are attached (to different extents) to a model of society that limits their scope. This limitation is rooted in the neoclassical conception of the term capital itself. For the last 300 years, the term capital has been tied to productivity: resources that have to be invested to generate more or different resources; at least, this is what is suggested by the results of this literature review. The problem with this characterisation is that it lacks specificity as to the purpose of the reproduction of resources. This limited scope of purpose has been effectively addressed by neoclassical orthodox economists who argue that the purpose of capital is development (growth, increased consumption and increased production). It is therefore not surprising that the term capital has not been critically reviewed in the integrated multi-capital frameworks developed that attempt to move beyond neoclassical economic models of society. Instead this conceptualisation of capitals is not only systematically reproduced, it is also expanded to cover all aspects of life. Therefore, the underlying framing of the capitals construct continues to be the production and consumption system itself; and this situates all forms of capital (e.g., social, human, cultural, built, natural) at the service of the production system (Mujica, 2012). The uncritical reproduction of this conceptualisation of capitals represents a significant theoretical gap, and the research presented in this thesis addresses this gap by explicitly and critically exploring a way in which multi-capital frameworks can be conceptualised to move beyond business as usual. In doing so, this research actively challenges the notion that all aspects of life should be placed at the service of production. Reviewing the way in which the term capital is constructed is the first step towards this critical reconceptualisation of capitals.

A starting point is to consider the etymology of capital. According to a historical review of the origins of the term by Cannan (1921), the origin of the word 'capital' can be traced to the classical Roman period when 'capitalis' was a term associated with what we now understand as 'head'. Under this conception, the authors of that time used to apply it associating the term with issues of 'crime', and 'punishment', to the sense of 'having to do with life', and also related the notion of what would be

‘most important’. The latter usage became very common in the French and English languages to refer to that which was ‘most important’, such as a capital city or capital argument, for example. However, in the 16th and 17th century, the term made its first appearances in documents used to teach accounting. These initial uses in the fields of economics and accounting were associated with ‘principal of a debt’, ‘the name for all the goods possessed’, ‘wealth, worth, a man’s principal or chief substance’, ‘the holdings of the individual members of a company’, and ‘the total holdings of a company’ (Cannan, 1921). Evidently, as mercantilism grew and gave way to capitalism that which was considered most important was clearly established as the production system itself, placing productivity as the driver and recipient of capital.

The argument advanced in this thesis is to return to the etymological roots of the concept, and recapture the original framing of the term capital, and conceptualise capital as an element at the service of life and that which is most important. In this manner, it is possible to conceptualise capital signalling that what is most important is life itself; not merely the production system. With this framing of the underlying logic of capital, the meaning of all forms of capital is redefined; all capitals are at the service of life, not at the service of production. So, with this reconceptualisation, the historical framing of capital can be retained but with a subtle, yet important addition: capital should be understood as all resources used to generate more or new resources for the purpose of sustaining and securing the well-being of all life forms on the planet.

This definition of capital aligns well with socio-ecological systems thinking within which the concept of resilience has been introduced; as well as with the need to refocus community resilience in the light of the concept of community well-being. In the context of community resilience in the face of the devastating consequences of earthquakes, this interpretation of capital, together with the incorporation of the notions of political and moral capitals, and community resilience, provide foundational pillars for developing a novel conceptual framework. This Community Resilience Capital Framework has explanatory power to integrate key social constructs such as power, politics, and moral values which are often overlooked in SES research and offer practical insights to inform community resilience building processes like the one that this research addresses through the story of the Waimakariri District response and recovery stories (Table 4).

Table 4. Resulting Community Resilience terminology (CRCa, CRCo, CRS) based on the explicit integration of community development and SES resilience concepts.

Community Development	SES Resilience	Community Resilience	Definition	Enablers	References
Community capacity	Potential	Community Resilience Capacity (CRCa)	Set of individual, collective, tangible, and intangible resources onto which adaptive community well-being priorities and strategies can be built upon the face of uncertainty and change	Robustness	Bruneau et al., 2003; Norris et al., 2008
				Redundancy and diversity	
				Rapidity	
				Resourcefulness	
Community competence	Connectedness	Community Resilience Competence (CRCo)	Process through which shared, or contending subjective resilience, sustainability, and well-being multidimensional priorities and strategies (CWBRs) are negotiated (de iure or de facto) across any given community, determining the social relations through which CRCa will be distributed and accessed across any given community.	Collective action	Iscoe, 1974; Eng & Parker, 1994; Rappaport, 1995; Paton & Bishop, 1996; Brown & Kulig, 1996-1997; Sampson et al., 1997; Sonn & Fisher, 1998; Seguin et al., 1999; Paton & Johnston, 2001; Lubell, 2002; Perkins et al., 2002; Spash, 2002; Paton, 2006b; Paton et al., 2006; Pooley et al., 2006; Norris et al., 2008; Davidson, 2010
				Collective decision-making	
				Collective empowerment	
				Information	
				Collective Efficacy	
				Commitment	
				Self-other awareness	
				Articulatness	
				Participation	
				Social support	
Constructive conflict resolution strategies					
Community Sustainability	Resilience	Community Well-being, Resilience and Sustainability (CWBRs)	Sets of shared or contending dynamic and variable subjective resilience, sustainability, and well-being multidimensional priorities and strategies found within any given community.	Social-ecological equity	Montada & Kals, 2000; Kals & Russell, 2001; Corral-Verdugo, 2002; Jurin & Fortner, 2002; Lubell, 2002; Nordlund & Garvill, 2002; Buckle, 2006; Paton et al., 2006
				Social-ecological justice	
				Social-ecological fairness	
				Collective social-ecological conservation activities	
				Social-ecological cohesion	
				Socio-ecological networks	

The framework builds upon the literature reviewed, but further explores two distinctive pathways that have not yet been taken, the integration of adaptive cycle boundaries to community resilience theory, and a novel multi-capital compilation to assess community resilience beyond business as usual.

In the discussion presented in the previous sections, the three boundaries of adaptive cycles (potential, connectedness, and resilience) were presented. Potential was described as the total amount of resources available in a system; connectedness as the internal control a system has over the resources to adapt to external variability; and resilience as the amount of pressure a system can absorb before changing into a completely different state. Furthermore, previous sections also described community capacity, community competence, and community sustainability as constitutive elements of community resilience. Community capacity was described as the total amount of resources available in a community; community competence as the ability of the

community to access and mobilise these resources; and community sustainability as the use of resources to work towards an aim aligned with sustainability values. If a community is constructed as a social-ecological system, then it can be argued that these conceptualisations share common ground, as seen in Table 4. For example, potential can be combined with community capacity given that they both refer to the total amount of resources available in a system. Connectedness can be combined with community capacity because they refer to the internal ability of a system (in this case a community) to access, distribute and use resources to adapt to changes. And, finally, resilience and community sustainability can be combined because they both speak to achieve sustainability or equate to trying to sustain or adapt to external variability and changes. As a result of this conceptualisation of the interrelationship between these six concepts, three new concepts were constructed to serve as conceptual pillars of the community resilience capital framework: community resilience capacity (CRCa), community resilience competence (CRCo), and community resilience, sustainability and well-being (CRSWB) (Table 4).

Combining adaptive cycle boundaries with the notion of community resilience enables the framing of community resilience as a social-ecological adaptive system. This can shed light on multi-scalar resource distribution processes that underpin resilience building of any given community within the bounds of SES resilience, thus contributing to this body of scholarship. This novel framework integrates three new concepts (CRCa, CRCo, and CRSWB) in an integrated multi-capital framework, built upon the critical review of the capitals concepts (Figure 7).

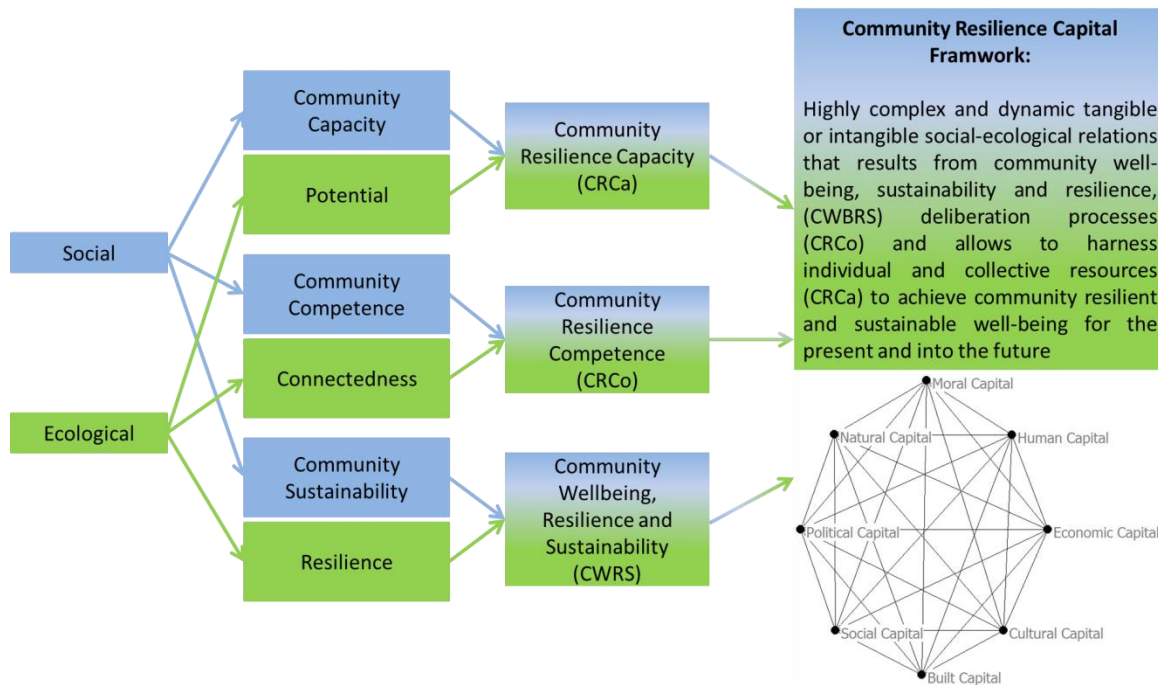


Figure 7. Incorporation of CRCa, CRCo, and CRSWB into an integrated multi-capital framework and the resulting emergence of CRCF.

This framework (Table 4 and Figure 7) is a way of conceptualising the dynamic and relational process of deliberately negotiating (*de jure* or *de facto*) the collective multidimensional priorities of CRSWB and more importantly, the pathways to achieve it. This framework was developed to be flexible so that it could be informed by the experiential knowledge of participants gathered through this research, as well as complemented and informed by the literature reviewed. This approach enabled exploration of the ways in which sectors of the Waimakariri District’s communities share and relate to each other’s cultural and moral capitals. The level of political capital that each emerging sector possesses and has access to, will determine the level of CRCo that certain collective subjectivities will have over others, and on the general distribution of CRCa across the entire community (hegemony, ethnocentrism) affecting the way in which community resilience unfolded in the Waimakariri District. Finally, informing the framework through participants’ voices also enables the identification of capitals that were not initially included, or that may have more or less relevant according to the situation in which they are used.

2.5. Conclusion

In this chapter key concepts, such as Resilience, Social-Ecological Resilience, and Community Resilience, were explored and a gap in literature was identified in relation to the shortage of

empirical evidence found in the scholarship to support and inform the definition of community capitals and how different 'forms of capital' relate to each other.

This gap in the community resilience and community capitals literature was initially addressed by critically exploring the conceptualisation of capitals and by drawing upon and integrating insights from SES, community resilience, and community capitals scholarship in a novel Community Resilience Capital Framework. In this framework, concepts drawn from SES scholarship, such as potential, connectedness, and resilience, were merged with the pillars of community resilience scholarship (i.e., community capacity, community competence, and community sustainability). As a result, a framework with resources and capitals as foundational was designed to deepen understanding about how the circulation of capitals in a community can shape community resilience. This framework purposefully includes physical and metaphysical capitals (such as built, natural, cultural, political, and moral capitals) as a way to include key social science constructs such as power, politics, worldviews, and moral values, thus addressing an important gap found in the SES and resilience literature.

This novel and flexible framework provides a conceptual foundation for exploring real-world case studies to identify how to access, use, and distribute resources and thus shape community resilience in practice, as well as to further develop the framework itself. In subsequent chapters, the lived reality of the consequences of the 2010/11 Canterbury Earthquake sequence in the Waimakariri District will be explored through the lens of this framework, and, in so doing, provide an empirical basis to test the framework against participants' lived experiences.

CHAPTER 3 - THE 2010/2011 CANTERBURY EARTHQUAKE SEQUENCE AND ITS SOCIAL-ECOLOGICAL IMPLICATIONS

3.1. Introduction

This chapter provides a general overview of the Canterbury 2010/2011 earthquake sequence and its social-ecological implications for the Greater Christchurch Area as the regional context in which the Waimakariri's response, recovery, and regeneration story unfolded. The overview was developed through a comprehensive review of literature that documented the earthquake events and related consequences for Canterbury and New Zealand. Participants' 'talk' is drawn on to illustrate key points noted during the literature review as well as to provide background and local perspectives. The rationale for informing this chapter with participants' talk before describing the methodological approach is to help tell the story in an authentic and human way that gives voices to local people. Using participants' talk is a device to bring to life and situate resilience and capitals as concepts that are visible in lived experiences beyond sober official reports and emphasise the multiple capitals in evidence within these narratives.

A description of the Canterbury 2010/2011 earthquake sequence is presented in chronological order commencing with the 4th of September earthquake followed by the 11th of February earthquake. Earthquake damage to infrastructure and land is briefly discussed. A description of the statutory provisions including the Civil Defence Emergency Management (CDEM) Act 2002, Canterbury Earthquake Response and Recovery (CERR) Act 2010, and Canterbury Earthquake Recovery (CER) Act 2011, as well as commentary on the ways these statutory provisions were implemented across Greater Christchurch and Waimakariri, is also presented. In addition, issues around the land zoning process, insurance, and housing are examined in relation to the Christchurch and Waimakariri recovery processes. Elements that pre-dated the earthquakes, such as the strong sense of community and community development team in the Waimakariri District Council (WDC) which determined response and recovery pathways in the Waimakariri district, are also weaved into the chapter. Finally, a brief overview of the current state of the process is provided with emphasis on the legacy of the Canterbury Earthquake Recovery Authority, the Greater Christchurch Regeneration Act (GCR) 2016, and the social-ecological changes across the natural, built, and economic

environments, such as changed land surfaces and waterways, changed infrastructure, and a recovering local economy. The chapter concludes by highlighting the broader complex context in which the Waimakariri District's response and recovery efforts unfolded. This broader national and regional context was characterised by strong central government interventions enacted under the protection of CERR Act 2010, and CER Act 2011 which produced both negative and positive effects in the area.

3.2. The Shaky Isles: A New Zealand earthquake prone context

Situated in the south western tip of the Pacific Rim, otherwise known as *The Ring of Fire* (Hinga, 2015), New Zealand is located along the intersection between the Australian and the Pacific Plates – making this land one of the most earthquake prone areas in the world.

Māori oral histories include many references to seismic events before Europeans arrived to settle New Zealand in the 18th century (Buck, 1950). The *Hao-whenua* earthquake in Wellington, which completely reshaped the shorelines of the area (King & Goff, 2006), constitutes an exemplar. The first major earthquake recorded after the arrival of European settlers was the 1848 Marlborough earthquake which had an estimated magnitude of 7.5 and epicentre in Awatere Valley (Marlborough district), and was felt across Canterbury to the south, and Hawke's Bay to the north (Grapes et al., 1998). The greatest damage to human settlement occurred in Wellington, where settlers had been unaware of the peril and built brick buildings that collapsed as a consequence of the shaking (Grapes, 2016). Only seven years later, a magnitude 8.2 earthquake in the Wairarapa causing a tsunami, and caused severe damage to brick buildings in Wellington which had been rebuilt in brick and stone after the 1848 earthquake (Downes & Grapes, 1999). In 1888, an estimated magnitude 7.0 - 7.3 earthquake struck on September the 1st and, while it was felt across both the South and North Islands, the damage was mainly concentrated in Canterbury (Cowan, 1991). In 1929, two more earthquakes with magnitudes greater than 7 occurred in New Zealand. One occurred in Arthur's Pass, and the second in Murchison (Eiby, 1968). However, neither of these earthquakes or the previously described quakes would compare in terms of the devastation caused by the 1931 Hawke's Bay earthquake. The Hawke's Bay earthquake resulted in 356 deaths. The built infrastructure of the city of Napier was all but destroyed by the earthquake and its aftershocks, and a large fire broke out in the city centre (Dowrick et al., 1995; Evans, 2006; Thomas et al., 2006). The Napier earthquake was a catalyst for the ongoing process of improving construction standards to reduce the death toll and structural damage due to earthquakes (Ingham, 2008).

Earthquakes continued to affect New Zealand in the 1940s. The 1942 magnitude 7.2 Wairarapa earthquake, and its subsequent aftershocks produced significant structural damage in Wellington (damage in over 5000 houses) that took many years to repair (Townend et al., 2005). This experience inspired the government to establish the Earthquake and War Damage Commission in 1944 in order to initiate an earthquake insurance program (EQC, 2018b). In 1993, the Earthquake and War Damage Commission evolved into the Earthquake Commission (EQC), the current government-backed New Zealand earthquake insurance scheme (Earthquake Commission Act 1993). Following the creation of the earthquake insurance program, large-scale earthquakes with localised damage (e.g., 1968 Inangahua earthquake, and 1987 Edgecumbe earthquake), continued to be documented over several decades. However, during the spring and summer of 2010 and 2011 respectively, the Canterbury Earthquakes sequence caused significant devastation in the region and resulted in a death-toll of 185 people.

3.3. Canterbury demographic and economic context

Home to Te Rūnanga o Ngāi Tahu, the local indigenous Māori tribe, and stretching from the Northern Kaikōura District to the Southern Waitaki River catchment and from the Eastern Pacific coastline to the western Southern Alps, the Canterbury Region is New Zealand's largest region (Environment Canterbury, 2013). In addition, the 2013 census, highlights that in 2010, the year of the first Darfield earthquake, a total of 521,832 people lived in the ten districts of Canterbury Region, making it the 2nd most populous region in the country at the time of the earthquakes (Statistics New Zealand, 2013b). Approximately 7% of the population identified as Māori (Statistics New Zealand, 2013b), and 81% of Canterbury's total population resided in the city of Christchurch (Statistics New Zealand, 2013b) where 145,000 dwellings were registered (Potter et al., 2015).

Rich soils, plains, hill country, and numerous rivers underpin Canterbury's strong agricultural economy, which has been shaped in recent years by the introduction of new technologies and changes in international commodity prices that have led to a transformation from sheep farming to intensified dairy farming (Pangborn & Woodford, 2011). Canterbury's landscapes and Christchurch's cosmopolitan urban scene have been a base for a vibrant tourism and recreation industry that has attracted hundreds of thousands of visitors a year to this region (Statistics New Zealand, 2016). In combination with other economic activities including retail, construction, and business services, the region contributed 12.4% of New Zealand's GDP when the earthquakes commenced in 2010 (Doherty, 2014). The first seismic event occurred on the 4th of September, 2010 and was centred

near Darfield, in Canterbury. The following section provides an overview of the earthquake event and its consequences.

3.4. The September 4th 2010 Darfield earthquake

On the 4th of September 2010 Canterbury experienced a magnitude 7.1 earthquake; the first of what would be a series of earthquakes that caused widespread structural damage but, remarkably, no loss of life in one of New Zealand's most populated and fastest growing urban centres at the time; the Greater Christchurch Area (Christchurch District, Waimakariri District, Selwyn District). The September earthquake occurred 40 km West of Christchurch, near Darfield, causing significant damage in Christchurch City, Selwyn District, and Waimakariri District, where local states of emergency were declared (Wood et al., 2010). The event occurred in the early hours of the morning, when most residents were home asleep and this may have had a protective effect by keeping people off the streets where falling debris could have caused more injuries or loss of life (New Zealand Police, 2010). The main structural damage occurred in urban areas and impacted unreinforced masonry buildings, usually brick buildings, chimneys and fences, which, due to their construction, were risk factors for injury and threats to human life (GNS Science, 2016; Ingham et al., 2010; Wood et al., 2010). Liquefaction in areas of low topography, such as wetlands, rivers, and river deltas, caused significant damage to water/waste-water networks and residential structures in both Christchurch and Kaiapoi (Ingham et al., 2010; Tonkin & Taylor, 2010; Wood et al., 2010). In rural areas, liquefaction and ground motion also disrupted energy supply and caused structural damage to silos, homesteads, wells, and water related infrastructure (Whitman et al., 2013). The total costs of the damage were estimated by New Zealand's Treasury as equating to NZ\$ 5.5 billion (Treasury of New Zealand, 2011). Immediately after the 4th of September earthquake, emergency responses were initiated.

3.4.1. The September 4th 2010 Darfield earthquake: CDEM Act 2002 and immediate response in the Greater Christchurch Area

Emergency services and local government responded under the guidance of the legal, political, and institutional emergency management infrastructure of New Zealand; the Civil Defence Emergency Management (CDEM) Act 2002, the CDEM Strategy, and the CDEM Plan guidelines. The CDEM institutional arrangements in place at the time established an institutional structure, as well as roles, powers, and processes for an integrated, coordinated, multi-agency, all-hazards approach to

emergency management across public agencies at the national, regional, and local levels. The approach encompasses four priority actions: reduction, readiness, response, and recovery, and traverses four environments: Social, Built, Economic, and the Natural environments (Brookie, 2012; CDEM Act 2002, Section 3).

The Ministry of CDEM links disaster responses to the declaration of states of emergency. In turn, the declaration of states of emergency under the CDEM Act 2002 activate the CDEM response governance structure which provides very detailed special emergency powers to the Minister, the Director of CDEM, the CDEM Groups (and the regional council and local authorities within it), and to persons working under the authority of any of the previously mentioned invested public officials (CDEM Act, 2002, Sections 74-94). Some of these special powers, such as the power to require information, power to enter premises, and requisitioning powers amongst others, are meant to expedite initial responses to the emergency, and provide officials with the capacity to quickly make decisions and obtain information that may mitigate risks to lives and property. In the case of the 2010 Darfield earthquake states of local emergencies were declared in three Districts: Christchurch City, Waimakariri, and Selwyn. In the following paragraphs the responses of Christchurch city and Waimakariri District under states of local emergency will be described in further detail.

With regard to the Christchurch City Council' response, initial response teams were deployed throughout the District. A command centre was established in the Christchurch City Emergency Operations Centre, two Welfare Centres were opened (Addington and Linwood), and multi-agency emergency services task force teams mobilised across the city to undertake building evaluations and safety checks (CDEM, 2010). The information gathered was collated in the command centre and the regional emergency co-ordination centre (CDEM, 2010). A curfew was also enforced in Christchurch's central business district (Ministry of Culture and Heritage, 2016). At the community level, networks of individuals began to spontaneously contribute to the response and coordinate volunteer work. Exemplars included the Student Volunteer Army (CDEM, 2012; Johnson, 2012; Lewis, 2013), the Māori Earthquake Recovery Network (Kenney & Phibbs, 2014), the Lyttelton Timebank and Information Centre (Everingham, 2012), and the Canterbury Community's Earthquake Recovery Network also known as CanCERN (McBrearty, 2012). These community initiatives helped clear liquefaction throughout the entire region, coordinated information and skill sets provision across community-based organisations and state agencies, and sought to provide means for local voices to access centralised government response efforts (CDEM, 2012;

Everingham, 2012; McBrearty, 2012). While this was occurring in Christchurch City, across the Waimakariri River to the north, the WDC was developing its own brand of response and recovery.

In the Waimakariri District, Kaiapoi, and Pines and Kairaki Beaches were the three most affected suburbs of the Waimakariri District. A significant portion of the housing stock of these three suburbs was severely damaged by liquefaction and lateral spreading. Daily social and community life was disrupted; many businesses were forced to shut down and were unable to reopen again (Vallance, 2013). *Arayan*, a staff member of a regional economic development agency, partially funded by the WDC, recalled (See Chapter 4 for methodological considerations and details):

'(...) at half past four we had that rude awakening, and I probably was called in, because I am part of the... I don't know what they call it, the recovery team? Or... Anyway, it was formed in a storm that day for environment, economic, community, so we all had our own roles, so I was called in on the Sunday. (...) I had my team pretty much the next day which was a Monday go out – up and down the streets of Kaiapoi. There were people standing outside their buildings in tears, knowing it was their business and buildings destroyed. So were their homes, many of their homes, so you know a third of the homes in Kaiapoi were destroyed as well. So, they were all in a pretty bad state' (Arayan).

In the Waimakariri district, infrastructure damage to roads, bridges, water mains and pump stations, and sewers left around 5,000 people without drinking water and sanitation services for 12 days (Vallance, 2013). Five and a half hours after the earthquake, an Emergency Operations Centre was set up at Council offices in Rangiora, and by 10 am a state of local emergency had been declared by the Mayor. Council staff members immediately made themselves visible in the hardest hit areas of Kaiapoi. They helped restore services, gathered and provided information as well as reassurance to residents by responding promptly and making visible Council's response efforts (Vallance, 2013). Council staff members were then brought together with consultants and contractors in the Kaiapoi Community Hall to deliver coordinated response efforts. By the 16th of September, services were restored to people's homes (not merely to the boundary of their property as required by law), and facilitated the transition from emergency response to recovery (Vallance, 2013).

3.4.2. The Civil Defence and Emergency Management (CDEM) Act 2002, Canterbury Earthquake Response and Recovery (CERR) Act 2010, and recovery in the Greater Christchurch Area following the September 4th 2010 Darfield earthquake

Recovery is a part of the CDEM statutory structure and is integrated into the CDEM Strategy goals and Plan. According to the CDEM plan guide at the time of the earthquake, recovery was understood as:

'(the) process to re-establish the quality of life of the community following an emergency. Recovery starts as soon as possible in the local community and addresses the social, economic, natural and built environments (...) Recovery begins on day one of an emergency' (CDEM Plan Guide, 2006).

Officially, states of emergency have a limited lifespan, thus, the special powers given to authorities under states of emergency also have a specific duration in time (seven days after the state of emergency comes into force, and possibly another seven days if an extension is processed) which in all cases must be specified within the declaration of the state of emergency (CDEM Act, 2002, Sections 70-71). However, beyond this timeframe, governance structures should return to routine procedures (Brookie, 2012). It is precisely in this transition from states of emergency back to an ordinary state that the CDEM Plan and Guide place emphasis. The transition from response (state of emergency) to recovery is expected to be discussed and agreed between local, group, and national controllers, and a specific exit strategy, recovery action plan, and communication plan must be created to ensure a fluid transition (National Civil Defence Emergency Management Plan Order 2005, Section 87). Beyond this transition, leading recovery at a national level is the responsibility of the CDEM Director who coordinates recovery through a National Recovery Manager (assisted by the National Controller) while still responding directly to the Minister (CDEM Plan Guide, 2006, Section 25, pp. 7-8). At regional and local levels, recovery responsibility falls on the local authorities, the CDEM Group Recovery Managers and Local Recovery Managers. However, the recovery process did not strictly follow statutory procedures as the following paragraphs will show.

On the 6th of September, the regional Canterbury CDEM Group activated its recovery structure, appointing leaders for recovery efforts across the four environments (social, built, economic, natural). Within a week, local authority recovery managers in partnership with the CDEM Recovery Manager, developed and initiated the implementation of a regional recovery plan that broadly

identified key local recovery issues and needs (Brookie, 2012; Johnson & Mamula-Seadon, 2014). However, the effective transition from response to recovery became a real concern for national authorities because of the extent of the infrastructure damage being reported by emergency services and local governments (Brookie, 2012). National political leadership believed that returning to routine administrative procedures would significantly delay the recovery of Christchurch. This perception was based on the severity of the damage, the significant number of insurance claims being submitted to the national earthquake insurance programs (156,670 EQC claims for damaged houses and land), the level of national resources that could be devoted to reconstruction, and standard lengthy issuing processes for council construction and demolition consents (Brookie, 2012; Gall, 2012).

On the 6th of September, and as the first major national decision for the Canterbury recovery process, then Prime Minister John Key appointed Gerry Brownlee as the Minister for Canterbury Earthquake Recovery, and announced that a Cabinet Committee on Canterbury Reconstruction would be formed to coordinate the government's response (Brookie, 2012). In the days following Gerry Brownlee's appointment, and while the regional and local authorities continued to work on the recovery efforts, national authorities searched for ways to expedite the Canterbury recovery process. Although regional and district councils considered the statutory framework to be sufficient for facing the challenge, they also agreed that a series of legislative changes to certain acts (Building Act, 2004; Land Transport Act, 1998; Local Government Act, 2002; and Resource Management Act, 1991) would make the recovery process more efficient (Gall, 2012). Given requests posed by Canterbury districts and the constantly changing conditions resulting from subsequent aftershocks, national authorities made a recovery governance decision in relation to the Canterbury recovery governance structure and process. They introduced the highly controversial CERR Act 2010 to the New Zealand Parliament. The CERR Act's main purpose was to facilitate and speed up the Canterbury recovery process by establishing a new advisory body the Canterbury Earthquake Recovery Commission (CERC), and a statutory framework that allowed government to make uncontested decisions regarding resource allocation, law making, coordination of recovery efforts, while at the same time remaining protected from the liability that might emerge from these decisions (CERR Act, 2010).

Although CERR Act was compliant with the CDEM Act and was meant as a complimentary piece of legislation, two major issues caused alarm within parliament, the legal profession and in the region.

Firstly, the Act enabled the transfer of all governance powers to the executive branch of the government through the Orders in Council provision (CERR Act, 2010, Section 6). The second concern was the fast-tracking process through which this piece of legislation was passed in parliament, as the CERR Act was introduced in Parliament on the 14th of September and then passed on the same day (Brookie, 2012; Gall, 2012; Johnson & Mamula-Seadon, 2013). Both issues are discussed in the following paragraphs.

The Orders in Council provisions enabled the Prime Minister to modify any existing piece of legislation by the sole and unreviewable (in court) recommendation of a relevant Minister. This ensured that executive branch powers in regards to the response and recovery were not constrained by judicial and/or legislative powers (Johnson & Mamula-Seadon, 2013). Additionally, Section 6 and section 19 of the CERR Act provided broad protection from personal liability to any individual acting under the CERR Act. The CERR Act 2010 was strongly challenged by members of parliament as well as legal experts across the country who assessed the Act as contrary to long standing constitutional and democratic principles, and setting a dangerous precedent for future emergency situations (Brookie, 2012; Gall, 2012; Johnson & Mamula-Seadon, 2013; Kerkin, 2018; McKillop, 2010; Scoop, 2010). Despite critiques, not only was the CERR Act 2010 passed unanimously in Parliament, it was also exempted from ordinary public consultation processes and from compliance assessments. This meant that it was not subject to potential constraints in relation to the New Zealand Bill of Rights Act 1990, Human Rights Act 1993, the Treaty of Waitangi 1840, the Privacy Act 1993 or any other international legislative standards (Gall, 2012). Subsequent to passing into law the new act had a significant effect on the recovery of Christchurch and the following paragraphs describe these legislative impacts in relation to the local recovery context in more detail.

The public in Christchurch perceived the recovery process to have stalled within the first months after the earthquake despite the region having a fully functional regional Canterbury CDEM Group recovery structure and plan, and the “fast tracking” of recovery procedures enabled by the CERR Act 2010 (Brookie, 2012). This stalling of the recovery process was attributed by the public to poor recovery leadership in Christchurch City (Brookie, 2012, p. 22). Christchurch City Council (CCC) did not establish any specific recovery planning process, nor did it appoint a Recovery Manager as the Canterbury CDEM Recovery Plan suggested. This made coordination and communication between recovery related agencies difficult in the City. This lack of clear recovery leadership in the CCC led this entity to rely on CERC to take charge over its recovery efforts which slowed down the recovery

process because CERC was an advisory group with no political decision-making power (Brookie, 2012; Johnson & Mamula-Seadon, 2013). Additionally, the general public in Christchurch felt that they were being excluded from participating in the recovery process which was being handled strictly within governmental spheres (Brookie, 2012; Johnson & Mamula-Seadon, 2013; Vallance, 2011).

By contrast, the Waimakariri Districts promptly adopted governance structures mandated by CDEM Act 2002 and placed community engagement at the core of their strategy (Brookie, 2012; Johnson & Mamula-Seadon, 2013). On the 6th of September, at the same time as the Canterbury CDEM Group activated its recovery structure and assigned leaders for the recovery of all four environments (natural, built, economic, and social), leaders were also designated for the Waimakariri District (Vallance, 2013). Recovery leaders and Local Waimakariri Council staff worked collaboratively together and immediately began networking with representatives from regional and national organisations involved in the recovery process. The recovery stakeholders also engaged community members directly through deploying a community engagement team (Vallance, 2013). However, *Chajá*, a Council staff member deeply involved in the recovery explained that these community-based actions were supported by a broader process of Council sponsored community development investment efforts:

'We're really lucky in this community because we have thanks to Ñandú and her amazing work ten years previous to the earthquakes in consolidating out the social service structure within our community - We all talked to each other, we all meet regularly, there is no duplication of services within our community, and that collaboration and that trust that is needed in times of disaster was already there, there was already trust between people, there were already relationships built, and I think that a huge amount of praise needs to go to Ñandú for her foresight with that many years before and building a culture in our community of collaboration' (Chajá).

Ñandú, another Council staff involved in the response and recovery, reinforced *Chajá's* perspective, stating:

'I started at the WDC nineteen years before then, so I'd been there for a long time, so that is where I started my work and it was with an injury prevention pilot based on the World Health Organisation community model, and Rangiora had been selected (...) And it was all new, it

was very new for a council to be involved (in community development) (...) we had some very forward thinking, probably older women at the time who really valued community and could see that there was real value in bringing people together, so it was twenty years in the making this recovery' (Ñandú).

Participants' talk highlights that community-based recovery was only possible because WDC had invested in community development for the past twenty years, generating important trusting relationships between Council and communities in the Waimakariri. During the following months after the transition from state of local emergency to mid- and long-term recovery, the WDC continued to build and strengthen its platform of community-based recovery by going beyond the mere 'repair and replace' statutory mandate and sought to provide new and better infrastructure for the community (Vallance, 2013). The WDC also showed flexibility by modifying its management structure and transformed its institutional configuration to adapt to the new circumstances; establishing new long-term recovery, social recovery, and infrastructure recovery roles, as well an Earthquake Recovery Committee. Committee membership included the Mayor, Councilors, and the Kaiapoi Community Board Chair (Vallance, 2013). The first action taken by the WDC Social Recovery leadership was to establish a longer-term Recovery Assistance Centre (RAC) in collaboration with local NGO's and closing the Welfare Centre. *Guasubirá*, another Council staff involved with the response and recovery referred to the process of developing the RAC in her interview talk as follows:

'(...) we were physically there; we made a conscious decision that we would put all the services and took over a reserve and had a Kaiapoi earthquake hub or something like that. And, we had somebody who was responsible for, or leading on just about every aspect of recovery, whether that was an outside agency, department or whether we employed somebody in to do that' (Guasubirá).

The main idea behind the RAC was to create a Centre in one of the hardest hit areas (Kaiapoi) where numerous services directly associated with recovery needs could be centralised, coordinated, and delivered, in order to provide a "one-stop-shop" for affected residents to be assisted through integrated and holistic 'case management' approaches (Vallance, 2013; WDC, 2014). The RAC proved to be practical and above all, flexible in how it approached the needs of the community as the recovery process evolved. As one participant commented:

'(...) we had realised at the RAC that we had a number of services in place, but we had people coming in and saying 'my landlord has ripped the red sticker off my house and said I could live there, and I have to keep paying rent, what do I do?' It didn't fit with any of the particular services that we had in place so worked out that we needed an advocate who could help that person navigate their way through the tenancy tribunal or contact the landlord in their behalf' (Ñandú).

As the RAC users grew in numbers and the needs of recovery continued to evolve in terms of reconstruction, the WDC expanded the RAC in order for it to also lodge public and private building and infrastructure services becoming a comprehensive 'Hub' of recovery services (Vallance, 2013; WDC, 2014). By the end of January 2011, 'The Hub' had become the coordination centre for the recovery where residents could find building and social services, but more importantly they could also access WDC's recovery leaders including the Social Recovery Manager, the Infrastructure Recovery Manager and his team, as well as 15 Earthquake Support coordinators. The WDC also operationalised a community engagement strategy outside of 'The Hub' through meetings, barbecues, morning and afternoon tea's ('cuppas'), where the council's leadership would be directly accessible to the community. In this space, leadership members answered questions about as well as, received input for recovery and rebuild plans for affected neighborhoods, or simply discussed the recovery issues surrounding the affected resident's daily life (Vallance, 2013).

These multiple and parallel community engagement actions based on a twenty-year community development investment by the District Council, enabled the WDC to stay constantly in touch with the affected residents and local social services, which allowed a community-based recovery process to develop in compliance with CDEM statutes. This demonstration of recovery statutory leadership helped the Waimakariri avoid central government interventions based on the CERR Act 2010. Central government interventions were also avoided in part, because Waimakariri District did not present the significant financial and political risks that were issues in Christchurch's recovery, such as the high real-estate values found in the city and the size of the population. *Piraju*, a research participant involved with the infrastructure recovery of both Waimakariri and Christchurch City explained:

'(...) [In Christchurch City] there are more interests at play. So, you take a small town like Kaiapoi, you compare it to the central city of Christchurch, and there is more property value

in one block of Christchurch than there is in the whole of Kaiapoi. So, the financial, political, and economic interests at play are much, much, much more complex than they are in Kaiapoi' (Piraju).

Piraju's talk indicates how the high concentration of economic capital in Christchurch made political interests in the City's recovery much more complex than in the Waimakariri District. This is consistent with findings in the literature, which suggest that the central government's focus and interventions in Christchurch through CERR Act 2010 were designed with the view of reducing political and economic risks associated with the complexities of Christchurch's urban environment (Brookie, 2012; Gall, 2012).

The government's focus on Christchurch City, in conjunction with the WDC's good CDEM compliant recovery practices, allowed the Waimakariri local authorities to remain aligned with central government and avoid intervention during the first six months of recovery. However, the increasing complexities in Christchurch City and the impacts of the February 22nd 2011 earthquake increased the need for more central government interventions in the Greater Christchurch Area. The precedent set by the CERR Act 2010 enabled central government to pass the CER Act 2011 after the February 22nd 2011 earthquake. CER Act 2011 extended the executive powers of the Minister under CERR Act 2010 for five years who, in response to the emerging insurance, housing, and land damage crisis, made executive decisions that began to significantly impact recovery in the Waimakariri District. These recovery governance decisions and their impacts are discussed in the following section.

3.5. The February 22nd 2011 Christchurch Earthquake

With its epicentre significantly closer to Christchurch's Central Business District (CBD) (10 Km south-east of CBD) and shallower (5 Km deep) than the 4th September earthquake, coupled with the timing of the seismic shock at 12:51pm, the 22nd February 6.3 magnitude earthquake caught Christchurch city and surrounding districts in a very vulnerable situation. The earthquake compounded the consequences of, and caused much more damage than the first earthquake in localised areas such as Christchurch's CBD and several eastern suburbs. In addition, the earthquake caused the deaths of 185 people, and injuries to 7171 members of the population (EERI, 2011; Stevenson et al., 2011; Cubrinovski et al., 2012; Potter et al., 2015). This high death-toll was mainly associated with the collapse of buildings that were green tagged (deemed safe to occupy) during the 4th of September

earthquake. These buildings performed very poorly during the 22nd February earthquake leaving numerous people trapped, dead or injured, under the rubble (Elwood, 2014; Stevenson et al., 2011). A key issue, that was later investigated, was that almost half of all deaths occurred as a result of the collapse of one single reinforced concrete building (EERI, 2011; Stevenson et al., 2011). Liquefaction again caused much of the damage across the affected parts of the region, and was considered to be significantly worse than that observed after the 4th of September earthquake, as there was widespread damage to lifeline utilities, transport infrastructure, and thousands of dwellings which resulted in mass evacuations (EERI, 2011; Stevenson et al., 2011; Cubrinovski et al., 2014).

Southeast from Christchurch and located very close to the epicentre, the port-town of Lyttelton suffered extensive damage to its town centre, where 60% of buildings were structurally damaged, and became inaccessible by land due to the collapse of the only tunnel that connected Lyttelton with the rest of Canterbury (Stevenson et al., 2011). The eastern suburbs of Christchurch were also subject to severe damage. Suburbs such as New Brighton, Mount Pleasant, Bexley, Avonside, and Dallington, had to face major issues due to liquefaction, landslips, rockfalls, damaged roads, and becoming isolated (EERI, 2011; Stevenson et al., 2011). Education was also affected: 419 early childhood education centres and approximately 215 primary and secondary schools across Christchurch were closed due to structural damage (EERI, 2011; Potter et al., 2015). Additionally, community support services were also affected, and although the Christchurch hospital suffered little structural damage, 160 patients had to be evacuated to prevent loss of life amongst intensive care patients (EERI, 2011). In addition to the damaged built environment, economic consequences were also becoming evident.

Economic projections (Stevenson et al., 2011) indicated a serious loss of productivity across multiple sectors. Tourism was expected to lose millions of dollars of income in the following months, while retail spending was estimated to decrease together with business presence in Canterbury. In combination, these trends translated to lower income for the region as well as reduced tax revenue for the National Government (Stevenson et al., 2011). By April, the Earthquake Commission (EQC) had reported over 99,000 insurance claims, and early counts reported that an estimated 10,000 dwellings would have to be demolished and land abandoned due to irreparable damage. The estimate of buildings needing demolition continued to increase as time elapsed after the earthquake (EERI, 2011). These compounded consequences led to 65,000 people leaving the City of Christchurch during the first couple of months after the earthquake (Stevenson et al., 2011).

Waimakariri was not as heavily affected. *Kururú*, a Waimakariri-based emergency responder involved with the response in Christchurch commented: *'you drove out of a very small part of Christchurch (CBD) and people were washing their cars, and then you get to the Waimak and people were mowing their lawns as if it was an ordinary day'*.

3.5.1. The February 22nd 2011 Christchurch earthquake: CDEM Act 2002 and responses in the Greater Christchurch Area

The February earthquake affected the Canterbury region on a significant scale, and the resources needed to respond to the situation were judged by central government to exceed local capacities. Additionally, at the time of the earthquake, the interactions between the CCC and the CDEM group were considered as uncoordinated (Brookie, 2012; Mamula-Seadon & McLean, 2015). Given the level of destruction and imminent threat that further aftershocks and weakened buildings posed for the residents of Christchurch, national authorities intervened declaring the first state of national emergency in New Zealand's history (Brookie, 2012; McLean et al., 2012). Leadership was assumed by the National Controller, and an Emergency Operations Centre (or Christchurch Response Centre, CRC) was established in Christchurch. The centre merged the CCC Emergency Operations Centre with the CDEM Group in order to increase the capacity and coordination of both organisations (McLean et al., 2012). However, the unprecedented merger caused confusion within the response teams in Christchurch, who had to adapt to the newly formed structure, while the national response management team in Wellington adapted to the relocation of leadership to Christchurch (McLean et al., 2012). The newly formed response organisation also lacked roles associated with welfare and community engagement, which in conjunction with the coordination issues and role confusion made the National Controller's strategies hard to implement and disconnected from community needs (McLean et al., 2012).

While these institutional rearrangements were taking place, in Christchurch's CBD people were trapped in collapsed buildings and the imminent threat of ongoing aftershocks continuously threatened to further increase the death-toll. The immediate response to these urgent needs was carried out by New Zealand Police and Firefighters who together with the civil response managed to carry out the majority of the initial rescues before the Urban Search and Rescue teams got to the site (McLean et al., 2012). Medical personal had difficulties addressing the demands of the over 7,000 injured due to the loss of power and communication systems in Christchurch hospital, but still managed to care effectively for the injured (McLean et al., 2012). Although Waimakariri was not

directly affected by the February earthquake many of the emergency services staff members were called into the Christchurch's CBD to assist with the response as *Kururú*, a Waimakariri-based emergency responder, noted:

'The February one didn't affect us (...) For me in particular, I happened to be in the city that day, in a meeting, so we were all immediately in there. And the other thing was that there was a group of North Canterbury Police staff, Waimak-based staff, who were in there doing a search warrant for an offender who had done some crime here but lived in Lynwood, so they went there. And four of them were actually from Kaiapoi, they were there, and then the earthquake hit, so there was a substantial number of Waimak-based staff in Christchurch, who were affected by the worst part of the earthquake, to the effect that the Operations Commander of Kaiapoi at the time was in charge of the CTV building for the first three hours after its collapse. So, we had all our staff in there. We were in two different radio channels, Christchurch and rural, he was in the rural channel, he had switched over, and he was yelling about CTV, so the staff in this building [Rangiora Police Station] heard all of it, and went to Christchurch. So, there was very little here, because they all went there' (Kururú).

As reports continued to provide information regarding the extent of the damage in other suburbs outside of the city, no reports seemed to point towards the threat to life in any place other than in the Christchurch's CBD. As a result, response efforts continued to focus on this area drawing on as many resources as possible, including Waimakariri-based emergency responders (McLean et al., 2012). The New Zealand Defence Forces were also involved in the initial response and assisted the New Zealand Police and Fire Service to cordon off and evacuate the Christchurch's CBD, which by the 23rd of February was only occupied by the relevant emergency services staff (McLean et al., 2012). Lifelines were significantly affected, but most of the organisations in charge of the multiple services (power, communications, water, waste water) managed to generate temporary solutions as an immediate response and almost fully re-established the majority of the services within the first few weeks after the event (McLean et al., 2012).

Similarly, to the September event, the February earthquake prompted communities across Christchurch (especially in Lyttelton and the Eastern suburbs) to come together and actively engage in the response efforts across the region. Some of these community response initiatives were built upon the experiences gained in the immediate aftermath of the 4th of September earthquake, such

as the Lyttelton information Centre and Timebank (Everingham, 2012), the Student Volunteer Army (Lewis, 2013). Other community response efforts were new, such as 'The Grace Vineyard Church Response' in New Brighton (Appley, 2012; Harvey, 2012), and the Māori Earthquake Recovery Response Network (Kenney & Phibbs, 2015; Lambert, 2014; Paton et al., 2014).

3.5.2. The February 22nd 2011 Christchurch earthquake: CDEM Act 2002, CER Act 2011 and recovery in the Greater Christchurch Area

Given the lack of central government aligned and confident recovery leadership and community engagement demonstrated by the CCC during the September event, the subsequent recovery process to the February 22nd 2011 earthquake was deeply questioned by central government and the general public. After the February event, the compounding magnitude and extension of damage from the series of earthquakes, which affected almost the entire city and neighboring districts led to questioning of the CCC's response by central government. The central government considered that the amount of resources needed to undertake such a recovery process, in combination with the political and fiscal risks that recovery decisions entail, required full alignment with central government priorities (Brookie, 2012). Neither CDEM institutional structures nor the CERR Act provided the required legal framework for the level of power centralisation needed to guarantee alignment of recovery interests. Consequently, on the 18th of April 2011 central government introduced the Canterbury Earthquake Recovery (CER) Act 2011 into parliament. As already indicated, the development and introduction of this legislation was highly contested.

The CER Act 2011 extended the Orders in Council mechanism established with the CERR Act 2010 from a period of eighteen months to a period of five years. It also replaced the CERC with another advisory panel to the minister, and it created a new government department, the Canterbury Earthquake Recovery Authority (CERA). CERA was tasked with directing and coordinating the multiple organisations involved in the recovery process of the Greater Christchurch Area under the direct mandate of the Minister (CER Act, 2011, Section 3). CERA was provided with wide operational powers that would facilitate its mandate, so within its scope of authority, CERA could determine reconstruction priorities, make compulsory land acquisitions, enter premises, undertake works, as well as demolish and dispose of dangerous buildings (CER Act, 2011; Brookie, 2012; Gall, 2012). With the Orders in Council mechanism attributed to the Minister, CERA and the Minister became two of the most powerful actors of the entire earthquake response governance structure, and had a monopoly in regards to recovery-related decision-making and response implementation.

This deviation from the standard CDEM governance structure and monopolisation of power concerned many members of parliament, public and academics who perceived a significant risk to democracy emerge in terms of the earthquake response and recovery process (Brookie, 2012; Kerkin, 2018). However, the counter-argument from central government was that the newly created CERA and the Minister's decision would be strongly guided and informed by communities through several mechanisms established in the Act itself. These mechanisms included the cross parliamentary forum, and a community forum of 38 members from the Greater Christchurch Area (Brookie, 2012; Johnson & Mamula-Seadon, 2013). Additionally, an unprecedented provision to include Ngāi Tahu as statutory partners of CER Act 2011 was also included in the Act making Te Rūnanga o Ngāi Tahu's Deputy Kaiwhakahaere (administrator/manager/CEO) also one of the most powerful stakeholders in the recovery. This was seen as a very positive Treaty implementation pathway by Ngāi Tahu as *Timbó*, an Iwi leader heavily involved with recovery efforts in the Greater Christchurch Area, indicated:

'(...) we [Ngāi Tahu] were legislated into the CER Act, that was the first time we ever heard about that! We hadn't asked for that, but they [central government] did it. And I sort of went around amongst Ngāi Tahu saying 'really, this is probably the best Treaty response we've ever had!'. We were granted full access to the table, and I was integrated right from CERA's inception all the way through to the Minister's post-CERA advisory committee [transition out of CERA] dealing with all the issues with CERA' (Timbó).

As analysis of *Timbó's* interview talk indicated, granting Ngāi Tahu '*full access to the table*' was a unique situation in the history of New Zealand and '*the best Treaty response we've (Ngāi Tahu) ever had!*', the statutory inclusion of Ngāi Tahu in recovery decision-making structures set an important Treaty implementation precedent for future recovery actions in the country. However, and despite the central government's measures to include Ngāi Tahu as statutory partners of recovery, literature reports that broader community engagement implementation still fell short in Christchurch City (Vallance, 2011). *Yarará*, a member of the community forum created through CER Act 2011 spoke to this point:

'(...) there were sometimes where I felt that we were just there as a rubber stamp, but there were some times where for example, as a member of that community forum, I was able to say to the Prime Minister, look, your people got it wrong, the reason I was meeting with

cabinet was as a member of the Community Forum. I had access to the prime minister, the most significant person in New Zealand, and could say, 'you bureaucrats have got it wrong, these are the implications and something was done', so, that's pretty influential (...) The problem is that CERA, in my view, was a total failure, in terms of what it should have been doing, because it was again, bureaucratic, ran effectively from Wellington, and at the end of the day, Treasury, Treasury controlled everything' (Yarará).

Although the newly created advisory role of the Christchurch community forum was constructed in the research literature (e.g., Brookie, 2012), as a token gesture, and Yarará's talk confirms this by stating that in fact *'Treasury controlled everything'*, Yarará's talk also highlights that the community forum did offer some opportunities for community members to influence central government's decisions. Yarará provided an example of how he, as a community forum member, was able to influence recovery through this participation space for Waimakariri's benefit:

'(...) I said [during a community forum meeting] 'yeah John [Key], but you are making it very hard for yourself, and for me, and other who are trying to work in the community, frankly its appalling', and he said, 'what are you talking about?'. I said, 'well, you just had your bureaucrats stand up in a public meeting and say that the State will only provide accommodation money when the insurance part of it is over if people have a mortgage', and he said, 'yes'. And I said, 'do you realise that the majority of the elderly folk in Kaiapoi, and probably in Christchurch, the only asset that they have is their home, that they have spent their whole lives paying off, they have nothing else apart from their pension, got no money, and they are going to have to spend money now'. And he said, 'oh, I didn't know that, why wasn't I told?', and he called over Paula Bennett, who was in charge at that stage and said 'have you heard this?', and she said 'oh no, no, we are doing it ok', she got all defensive. And I said 'no Paula, you are actually putting a whole lot of people in tents', and he said 'leave it with me Yarará, Cabinet will discuss it this afternoon'. Well, three days later it was changed' (Yarará).

Having access to high level state officials such as the Prime Minister and the Minister of Social Development gave community members such as Yarará opportunities to speak out and influence the recovery process. However, as Yarará also notes, the level of influence might have been very limited making the community forum a 'rubber stamp' participatory space when in actuality

decisions were being driven by the Government's Treasury department. Therefore, it can be argued that CERA's and central government's community engagement strategies fell short in the Greater Christchurch Area (Brookie, 2012; New Zealand Controller and Auditor-General, 2017a, b; Vallance, 2013). Despite this, research participants also indicated that there were positive elements to the central government's community engagement actions in the region, such as Ngāi Tahu's inclusion as statutory partners in recovery, and some opportunities that arose from the community forum space.

As complex as the implementation of community engagement strategies were becoming for CERA and the CCC, the WDC whose initiatives aligned closely with the CDEM recovery model and its initial and successful community engagement strategies, continued to respond effectively to community needs and demands. Moreover, community views were incorporated into the WDC's recovery plans through the initial months after the 22nd February 2011 earthquake (Vallance, 2013, 2015). Yet, as time went by, complexities around housing and insurance grew. As central government began to exercise its newly acquired and exclusive decision-making powers to intervene and attempt to disarm the growing recovery complexities such as insurance, housing, and land damage issues, local governments such as the WDC were slowly displaced in the overall decision-making structures of recovery (Johnson & Mamula-Seadon, 2013). These complexities are discussed in the next sections.

3.5.2.1. Increasing complexities in Greater Christchurch Area's recovery: The red-zoning process and buy-out program

After the February 2011 Earthquake, and due to the now significant damages to land and buildings across the Greater Christchurch Area, a series of decisions had to be made regarding the land and properties that were damaged beyond repair or were situated in highly hazardous areas.

Although re-categorisation of land usually falls within the remit of local authorities, central government overrode local government. Based on a series of land damage and new fault assessments, central government ordered the re-categorisation of certain areas of the Greater Christchurch Area. Land categorisation was based on four zoning criteria that were color coded. Green equated to good to live in. Orange was understood as meaning wait and see. White referred to assessing landslip and rockfall risks. Red meant uninhabitable due to high liquefaction and landslide hazard risk (Blundell, 2014; Miles et al., 2014). At the time of this initial assessment (June 2011), a total of 5,175 properties were categorised as red, and over 9,000 properties were labeled

as orange leaving the property owners in a further state of uncertainty and waiting for further assessments to determine whether properties would finally tip towards the red or the green side of the categorisation spectrum (Mitchell, 2015). Towards the end of the assessment process, a total of 8,060 properties were red tagged, mainly in Christchurch (CBD, eastern suburbs, near the Avon River, as well as areas in the Port Hills), and in Waimakariri (Kaiapoi, Pines Beach, and Kairaki) where the red-zone covered a quarter of the properties in Kaiapoi, half of the properties in Pines Beach, and all the properties in Kairaki (Vallance, 2013; CERA, 2016).

This decision was accompanied by a buyout program sponsored by central government for those property owners whose properties had been red-zoned. Through this program the government made voluntary offers to buy the red-zoned properties off the owners and established two broad groups of red-zoned property owners to which it extended two different offers. The first group was composed of red-zoned residential building owners who had earthquake insurance (either EQC or private), and central government extended two possible options to them. One option was to have central government buy their land and house at 100% of the 2007/2008 ratable value of both, while also acquiring the insurance claim which the government would pursue freeing owners from the burden of dealing with the insurance providers. The other option for property owners with insurance was for central government to buy only the land at 100% of its 2007/2008 ratable value and leave owners to pursue the house insurance claims directly with the insurance provider without government intervention (CERA, 2016; Miles et al., 2014). The second group composed of red-zoned insured commercial buildings, uninsured residential buildings, and owners of vacant land, received a different offer. Central government offered to only buy their land at 50% of the 2007/2008 ratable land value, but nothing was offered for the improvements of the property (CERA, 2016).

This program sparked major controversy which resonated in the media (Cairns, 2011). Some of the owners who belonged to the first group and received full offers for land and improvements claimed that the 2007/2008 property values were not nearly enough to buy new property in 2011 post-earthquake. At this time greater Christchurch housing markets saw house values rocketing due to the reduced accommodation stocks, and competition to acquire and build real estate property. As a result, some owners were forced to seek new bank loans and further increase their mortgages (Cairns, 2011; Goodyear, 2014; MBIE, 2013; Vallance, 2013). Other homeowners directly questioned the valuation metrics being used because they were perceived as too broad, and thus inadequately reflective of the estimated individual property values. In some instances, valuations were well over

the real worth of the property while in other cases well under (McCrone, 2013). Other owners from this same group perceived that the deadline set by the government to accept the offer, together with comments and ‘vague threats’ (McCrone, 2013), being made regarding land becoming uninsurable and services being cut off from those areas, were all coercive measures to push owners into accepting the government deal (McCrone, 2013).

Owners who belonged to the second group, specifically residential owners who found themselves in a more vulnerable position due to not having insurance and commercial building owners, were the worst affected. Some of these individuals managed to organise themselves under the denomination ‘Quake-Outcasts’ and placed a legal claim in court demanding the government to extend the same offer to them that they gave to those who had insurance (Young, 2016). This claim was pursued until 2015, when the Supreme Court ruled that an individual’s insurance status was not an adequate attribute to merit a differential offer (CERA, 2016; Young, 2016). This rule triggered a review of the offer which, although improved, still did not extend the same offer to all the affected, independent of their insurance status (CERA, 2016; Small, 2016; Young, 2016).

Regardless of the conflicting situations, and only three years after the implementation of the program, 6,879 properties had been sold to the Crown, and of these, 1,259 owners had accepted the offer but were still in the settlement process; and only 261 owners had refused the offer (Human Rights Commission, 2013). CERA’s indicators also seem to point towards very positive results six years after the implementation of the scheme. According to a CERA survey, 82% of the property owners who accepted the Crown offer felt that having an offer was better than not having one, and 70% of the property owners who accepted the offer felt certain that it was the right decision to make at the time (CERA, 2016).

3.5.2.2. Increasing complexities in Greater Christchurch Area’s recovery: Insurance issues

New Zealand’s earthquake insurance and reinsurance structure at the time of the earthquakes was complex, and according to some researchers (Brookie, 2012; Merkin, 2012), inadequate for the circumstances posed by the Canterbury earthquake sequence. Built upon New Zealand’s Earthquake and War Damage Act 1944, the prevailing legislative cornerstone of the earthquake insurance structure was the Earthquake Commission Act 1993, together with the Earthquake Commission Regulations 1993, which provided the statutory basis for the existence of the Earthquake Commission (EQC). The Earthquake Commission is in charge of administering the multiple aspects

of 'Natural Disaster Fund' (EQC Act 1993, Section 5). Anyone in New Zealand who acquires fire insurance is automatically covered for natural disaster damage through the EQC Act (EQC Act 1993, Section 18), and if such damage does occur and claims are posed, EQC can make the payments out of what was established as the Natural Disaster Fund (EQC Act 1993, Section 15), which in turn is also reinsured by international reinsurers (EQC Act 1993, Section 5.1., Subsection d).

At the time of the earthquake, EQC had a total of 20 staff members (Wood et al., 2010), and had an estimated NZD 5.9 billion in the Natural Disaster Fund (Merkin, 2012). According to a Parliamentary research paper, in the months after the 2010/2011 Canterbury earthquake series, a total of 407,549 insurance claims were posted (Feltham, 2011), leaving private insurers and EQC understaffed and in a very vulnerable position to cover the total payable claims (Feltham, 2011; Merkin, 2012; Wood et al., 2010). Eventually, the government financially intervened with AMI Insurance Limited, which was one of the largest insurance providers in New Zealand, in order to provide financial backup that would bring some kind of certainty to the market (Feltham, 2011). EQC had to increase its staff from the original 20 to a total of over 1,000 staff members to be able to cope with the continuous and overwhelming stream of claims (Wood et al., 2010; Brookie, 2012). On top of this difficult situation were additional complexities involving legal loopholes, contradictory interpretations of broadly written legislation, and additional financial complexities relating to the international reinsurance process, which made the resolution of such an unprecedented insurance situation appear ever more distant (Brookie, 2012; Merkin, 2012; Human Rights Commission, 2013, p. 45-49).

This complex situation had two consequences that affected the recovery process. Firstly, the insurance claim settlements process provided the certainty and support needed to ensure a longer-term recovery process (Parker & Steenkamp, 2012). However, the settlements were significantly delayed due to the particular geological characteristics of the event and the overlapping legal and financial complexities of the insurance scheme (Brookie, 2012; Brown et al., 2013; Fitzsimmons, 2016; King et al., 2014; Stylianou, 2016; Wood et al., 2016). Secondly, after the earthquakes, a significant rise in household and business insurance premiums was observed. Private insurers were faced with increased reinsurance costs and large excesses that needed to be covered and these costs were transferred to consumers, which made insurance inaccessible for many people in Canterbury, who without insurance cover had to bear an enormous risk on top of the already pressing burden of recovery (Brookie, 2012; Feltham, 2012; Parker & Steenkamp, 2012; King et al., 2014; Van Den Bergh, 2011).

3.5.2.3. Increasing complexities in Greater Christchurch Area's recovery: Housing shortages issues

It is estimated that close to 90% of the Greater Christchurch's residential building received some kind of damage from the earthquakes, and over 9,000 became uninhabitable (Goodyear, 2014). This extent of damage generated three key movements of the population: one minor movement outwards from the Greater Christchurch Area towards other parts of New Zealand; a second and significantly larger internal movement, within the Greater Christchurch Area itself, were displaced people moving from the heavily damaged areas of the city to other areas of the city and neighboring districts; and a third, also significant movement, of construction workforce capability into the area for employment opportunities in the rebuild (Newell et al., 2012; Parker & Steenkamp, 2012). These population dynamics placed enormous pressure on the reduced Greater Christchurch residential building stock and had significant effects on the housing market (Newell et al., 2012; Human Rights Commission, 2013; CERA, 2014). Additionally, insurance payouts also influenced the housing rental market. *Queguay*, a research participant involved in state driven temporary housing solutions during the recovery in the Greater Christchurch area stated:

'There was a lot of not even necessarily landlords; there were people who were trying to ride that wave of really high rentals, so there were ludicrous amounts [of speculators] coming in asking for fully furnished places for two thousand a week. So, you know, there was just... and because the insurance companies were in a position of potentially putting people in motels, sometimes those motels would cost that per week, so the ability to offer a full house for the same price of the motel was there' (Queguay).

The limited housing availability, due to the destruction caused by earthquake damage and re-zoning processes led to increases in housing demands, which were compounded by the shifting local population and inflow of labor. In addition, the sudden inflow of large insurance pay-outs drove up real estate market house price inflation and house rental inflation by 11% in July 2013 whereas in other parts of New Zealand increases of only 4% were recorded (Human Rights Commission, 2013). An estimated total of over 1,000 social housing units were also lost in the earthquake, and most of the social housing stock that remained habitable did so with damages that needed to be repaired (CERA, 2014; Human Rights Commission, 2013). However, as social housing stock dropped, demands for low cost, emergency, and temporary housing simultaneously rose (Human Rights Commission, 2013). This situation led directly to an estimated housing shortfall of around 7,100 residential

buildings (MBIE, 2013), and an increase in homelessness (Human Rights Commission, 2013). As a result, large numbers of people were exposed to housing insecurity issues that undermined their personal recovery (CERA, 2014; Fuatai, 2012). Confronted with this particular challenge, multiple community, policy, and market actions were undertaken in an attempt to bridge the housing availability, affordability, and habitability crisis.

Multiple government agencies, such as Housing New Zealand, the Christchurch City Council, the CDEM Group, and the Ministry of Business, Innovation and Employment, amongst others, provided a variety of temporary housing options such as campervans and temporary accommodation villages for displaced residents. Financial relief options in the form of grants and council rates reliefs for some of the displaced were also offered, as well as more social housing, and rebuild or repair programs for residential buildings that did not need extensive repairs or could be made habitable until insurance settlements were finalised (Human Rights Commission, 2013; CERA, 2014).

Beyond these measures for directly supplying housing solutions, the executive branch of the national government, through Minister Brownlee, also undertook major changes in land use reconfiguration in order to identify greenfield land upon which new housing stock could be built. The Land Use Recovery Plan (LURP), a planning instrument approved in 2013, is an exemplar. The LURP was developed by Environment Canterbury by order of the Minister for Canterbury Earthquake Recovery under the CER Act (2011) and provided the legal planning framework to enforce changes in all local and regional planning instruments to facilitate re-development in the Greater Christchurch Area in response to the housing crisis. For the Waimakariri in particular, the LURP provided the framework and mandate in the shape of numerous actions (Actions 3, 4, 12, 16, 20, 21, 25, 26, 34 and 38) to amend the Waimakariri's District Plan, Town Centre Plan, and Infrastructure Program. Key initiatives included identifying appropriate sites for residential and business greenfield development (including brownfields), enabling community facilities, prioritising development of existing greenfields, and removing airport noise contours that were posing obstacles for greenfield development. In addition, there were two special actions contained in the LURP and implemented in the Waimakariri District; Actions 20 and 21, which aimed to facilitate a housing development on Māori Reserve (873) land at Tuahiwi, as a local Ngāi Tahu research participant commented:

'And what happened out in Tuahiwi was that land was [originally] set up as a reserve, but straight after the lands were given or set aside as a reserve, the then Councils of the day put

in regulations that the minimum size block to build on was five acres. So, Tūāhuriri⁶ have been fighting over the years to get this reversed. It was specifically set aside for our housing, and they won't let us build there. So, through the processes of the aftermath of the earthquake, they went into dialogue with the Waimakariri Council to change the district plan to accommodate this. And the Council was upfront, they acknowledged it was wrong and they did want to change it, but there was a process they needed to go through to change their plan' (Timbó).

As Timbó's talk indicates, the processes that unfolded after the earthquake, Ngāi Tahu's statutory access to the decision-making spheres of recovery and the Minister for Canterbury Earthquake Recovery's special executive powers, enabled executive changes to land-use planning instruments such as the Waimakariri District Plan which facilitated Ngāi Tahu to develop their own land. This is particularly meaningful under the light of the previous statement which indicates that pre-earthquake Western-European institutions ('they', 'Council') still exercised power over the local hapū through legal instruments ('regulations') which hindered local Māori from exercising ancestral rights over their land ('they won't let us build there'). Having their ancestral rights to the land acknowledged by Western European institutions post-earthquake, and having such institutions changed ('there was a process they needed to go through to change their plan') to reflect this acknowledgement could be interpreted as a significant breakthrough in the Treaty of Waitangi implementation process for the local hapū and the broader New Zealand context.

3.6. The 2017 Greater Christchurch Post-Earthquake Situation

The 2010/2011 Canterbury Earthquake sequence left a changed ecological, built, economic, and social environment in the Greater Christchurch area. From an environmental perspective, changes in the land surface and waterways caused by floodplain subsidence in the Avon and Heathcote Rivers during the earthquakes has made certain areas of the city more vulnerable to flooding by uplifting 60% of the Avon-Heathcote Estuary by 0-0.4m (EQC, 2017; Hughes et al., 2015). In the Waimakariri district, similar land shifts and destruction of the stop banks also substantially increased the regions vulnerability to flooding (Duncan, 2011). These changes in the land also affected coastal area processes. Changes to the Avon-Heathcote Estuary dynamics, compounded added

⁶ Ngāi Tūāhuriri are a hapū of extended family collectives of Ngāi Tahu that have mana whenua status at Tuahiwi.

complications to coastal vulnerability, sea level rise, and its effects on future coastal liquefaction and flooding processes across the entire Greater Christchurch coastal region, including Pines and Kairaki Beaches in Waimakariri (Kelland, 2013; Tonkin & Taylor, 2013; Eaves & Doscher, 2015; Risken et al., 2015).

In terms of the built environment, after some months of delay due to late insurance payments and continuous aftershocks, the construction industry began accelerating early in 2012 and in 2016 still surpassed its pre-earthquake levels of building rate by 150% (Wood et al., 2016). This movement mediated the effects of the post-earthquake employment situation, which rose by 16%, and also increased the speed of gaining council residential building consents to over 1,200 consents per month at the end of 2014 (Wood et al., 2016). The building upsurge brought significant economic resources into the Greater Christchurch Area and helped revitalise the economy, which as a result seemed to overcome the financial shock of the earthquake rather quickly and was soon in alignment with national economic indicators (Wood et al., 2016; Statistics New Zealand, 2017). Despite how well economic indicators appear to have performed, and the peak in construction, the housing market still remained an issue, with house price inflation set at 40% above pre-earthquake values, and a 50% rise in weekly rent prices in Christchurch by 2015 (Wood et al., 2016).

These economic trends seem to correspond with some social perceptions regarding quality of life, which overall, and according to a well-being bi-yearly monitoring survey developed by CERA, showed that 77% of the Greater Christchurch population judged their quality of life to be extremely good or good (CERA, 2015). Despite high quality of life perceptions recorded by CERA across the entire region of Canterbury, indicators in the Waimakariri noted a decrease in community well-being. Social Services Waimakariri, which is a collaborative forum of social and mental health service providers in the area, noted a steady increase in mental and social service demand for three consecutive years 2016, 2017, and 2018 (Social Services Waimakariri, 2016, 2017, and 2018). Issues such as extreme anxiety, depression, self-harm, drug misuse, family violence, complex family breakdowns, and stress and anxiety in young children have all been steadily increasing over the years after the earthquakes. These complex issues have fueled an increasing demand for social and mental health services in the Waimakariri (Social Services Waimakariri, 2017, 2018). These increases in service demands have put enormous pressure on social workers and mental health workers in the area who still respond with the same level of resources available pre-earthquake, or in some

cases, even less, which has negatively impacted the well-being of workers in this sector (Social Services Waimakariri, 2017).

The recovery process also left a changed social perception of government decision-making processes (CERA, 2015). Throughout the four years the CERA survey was conducted, a very low percentage (30%) of the Greater Christchurch population expressed being satisfied with the level of opportunities on offer for participating in the earthquake recovery decision-making process (CERA, 2015). Confidence that agencies were acting in the local communities' best interest was not particularly high, placing CERA at its lowest point in 2015 with 29% of the respondents expressing their confidence in the institution, while the remaining 71% expressed themselves as either neutral (35%), or not confident (36%) (CERA, 2015). Only two district councils reached higher levels of confidence, Selwyn (45%), and Waimakariri (46%), which may have been the result of these districts' continuous efforts to enhance social recovery and community engagement in resilience building activities.

The 2010/2011 Canterbury Earthquake sequence not only left a completely changed natural, built, economic, and social environment in Canterbury, it also left behind the seeds of an incipiently changing legal and institutional framework for emergency management across the country. At a national level, the CER Act 2011 was replaced by the Greater Christchurch Regeneration Act (GCR) 2016, which could be interpreted as a transitional act between the extraordinary legal circumstances laid by the CER Act 2011 and a return to pre-earthquake legislative provisions, such as the Local Government Act 2002. The GCR Act 2016 (in Section 3.1, Sub-section d) explicitly recognised the leadership of local authorities over the regeneration (rebuilding, renewing, and improving land, infrastructure, environment, economic, social, and cultural well-being elements) of the Greater Christchurch areas. Yet the Act also conceded a powerful role to the Minister for intervening in the planning and implementation process (Section 12.1, Sub-Section i). Additionally, other institutional reforms have been introduced.

Since 2013, major reforms have been proposed to the Resource Management Act 1991 based on the argument that there was an urgent need to improve the national consistency of and direction between national, regional, and district plans (Ministry for the Environment, 2015). Amongst these reforms, and following recommendations made by the Canterbury Earthquake Royal Commission, it was proposed that the management of risks derived from the occurrence of natural hazards had to be introduced into the RMA's Section 6 (Matters of National Importance) (Ministry for the

Environment, 2015; Amos, 2016). This reform was approved in April 2017 and it aims to ensure that resource management decisions are made in alignment with following risk-based approaches to natural hazard management. These include taking a broader policy perspective on natural hazards, including slow onset events such as sea level rise and climate change (Amos, 2016). In contrast, reforms to the Building Act were introduced in Parliament in 2013 and have recently been assented (New Zealand Parliament, 2017a), in order to include special provisions for earthquake-prone buildings that will help reduce the risk of building collapse (Greenland, 2016). The Earthquake Commission Act 1993, the legal backbone of New Zealand's earthquake insurance scheme has also been placed under review and suggestions made regarding modification of claim lodging procedures, insurance coverage, monetary caps, excesses, and premiums (New Zealand Treasury, 2015). A new CDEM strategy has also been recently approved (April 2018) as well as the National Disaster Resilience Strategy (April 2019), both of which situate resilience as the foundation and the outcome of CDEM efforts.

At a regional level in Canterbury multiple institutional transformations have occurred. The Canterbury Regional Policy Statement 1998 (Environment Canterbury, 1998), which was under review at the time of the earthquakes, was finally revised and adopted in 2013. The statement now contains a special section on the recovery and rebuild of the Greater Christchurch Area (Section 6), and an updated section on natural hazards that has been explicitly aligned with CDEM frameworks (Section 11). The Canterbury CDEM group also adopted a new CDEM Group Plan in 2014, which introduced the concept of resilience into the newly developed plan goals (Canterbury CDEM Group, 2014, p. 11), as well as into future documents to be developed under this overarching plan, such as the Canterbury CDEM Group Community Resilience Strategy (Canterbury CDEM Group, 2014, p. 15). In addition, in 2016, the Canterbury Regional Council in partnership with multiple Māori and local authorities updated the Greater Christchurch Urban Development Strategy (2016), and defined resilience, one of the seven guiding principles of the document, as: *'Increasing the capacity of individuals, whānau, communities, institutions, businesses and systems to survive, adapt and thrive no matter what kinds of chronic stressors and acute shocks they experience'* (Greater Christchurch Urban Development Strategy Update, 2016, p. 1).

Multiple planning policy transformations have occurred at the local level as well. In 2013, two years after the earthquake series, Christchurch City (together with Wellington City) was selected by the Rockefeller Foundation as one of the 100 Resilient Cities Network with the aim of increasing

resilience. The first assessment report produced under this framework pinpointed several aspects that needed to be strengthened in order to achieve this objective. Key elements identified are as follows: Improving housing affordability and accessibility, increasing community and social cohesion, enhancing community leadership, and building trust between communities and decision-makers (Resilient Christchurch, 2015). In addition, local planning instruments had to be rewritten and land re-categorised to accommodate the new housing demands, the newly formed red-zones, and the newly emerging flood risks from land deformation in river and sea coastal environments (Vallance, 2013; Canterbury Earthquake Order, 2014; WDC, 2016a). New plans were also created, including the Christchurch Central Recovery Plan, the Ōtākaro Avon River Corridor Regeneration Plan, and in the Waimakariri the Waimakariri Residential Red Zone Recovery Plan.

3.7. Conclusion

This chapter has described the pre-earthquake Canterbury setting as well as the 2010-2011 earthquake sequence and post-earthquake situation characterised by significant levels of physical and social disruptions. Such devastation and the consequent imminent risk of loss of life warranted the declaration of a State of National Emergency in New Zealand, a legal mechanism which had never been used before in the country. The national scale of the disaster meant that both the response and recovery processes in the Waimakariri were embedded in broader social-political recovery contexts that span well beyond local political, geographical and administrative boundaries.

As an exemplar, by advancing CDEM principles, best-practices and statutory provisions, the WDC was able to develop their initial response and recovery in alignment with central government support and decisions placing community well-being at the centre of their local recovery framework. However, complexities around Christchurch's CBD rebuild intensified. Housing, insurance, migration, and land zoning issues all required that further statutory changes be made to centralise power in the remit of the Minister for Canterbury Earthquake Recovery. These changes were enacted through the Canterbury Earthquake Response and Recovery Act 2010, and later through the Canterbury Earthquake Recovery Act 2011. Both these acts were highly controversial because they enabled the transfer of all governance powers to the executive branch of the government through the Orders in Council provision, and provided broad protection from personal liability to individuals acting under this unexpected legal framework. Additionally, these legislative instruments were fast-tracked in parliament avoiding public consultations. These legislative measures sought to speed up the Canterbury recovery process by establishing a statutory framework that allowed

government to make uncontested decisions while at the same time remaining protected from emerging liability. However, the decisions made by Ministerial approval such as the Land Use Recovery Plan 2012 generated both positive and negative outcomes for the Waimakariri and the Greater Christchurch Area.

Some positive effects generated significant housing opportunities for displaced residents from Christchurch and the Waimakariri. New development also increased demographic growth in the Waimakariri, which triggered intensified economic development in the area (specially associated with the building industry). Additionally, the Land Use Recovery Plan, CER Act 2011, and the inclusion of Ngāi Tahu as statutory partners in recovery, removed the planning barriers that had kept Ngāi Tūāhuriri, the local hapū, from developing housing facilities in Tuahiwi, their own land (Maori Reserve 873). Negative consequences of central government interventions made under the CER Act 2012 occurred with the implementation of the red-zoning process, which resulted in a large percentage of the local residents of Kaiapoi, Pines and Kairaki Beaches being forcefully displaced from their homes. Local government also began to lose power to advocate for the well-being of these communities and in the long-term the increasing insurance, housing, and central government interventions negatively affected community well-being. Social indicators such as family violence, stress, depression, self-harm, and drug misuse rose while the political legitimacy of central government dropped significantly in the area.

These dynamics, and how they unfolded, are the focus of chapters 5-7 which will develop a more detailed analysis of the post Canterbury earthquake sequence and its implications for people in the Waimakariri through the use of the novel Community Resilience Capital Framework described in the previous chapter. However, before exploring results, it is important to present the methodological considerations and practices which underpinned the application of the Community Resilience Capital Framework.

4.1. Introduction

In this chapter an overview of the development of this research is presented. The epistemological and methodological perspectives that frame this research are briefly outlined before describing the qualitative research design and methods. The research design was envisioned as a Community Based Participatory Research design that applied a mixed-methods approach, which combined a pilot study and subsequent fully developed case studies, to conduct the research. Justifications for both pilot and case studies are also presented in this chapter. The case studies are briefly described and a rationale for their selection presented. The selection and recruitment of participants is outlined in detail. The way in which participants' narratives and perspectives were gathered and processed (semi-structured interviews, focus group, verbatim transcription) is explained. The data analysis framework which draws on content and narrative analysis is discussed, and issues of trustworthiness and reliability are addressed. Finally, given the trauma that many participants may have experienced during and in the aftermath of the earthquakes, the ethical integrity of the research process has been a key concern and ethical considerations are presented. The following sections begin by presenting overarching epistemological and theoretical underpinnings of this research.

4.2. Epistemology

Epistemology concerns the nature and forms of knowledge, how we come to know the world (Crotty, 1998; Scotland, 2012). This particular research is grounded in social constructionism and draws on a critical inquiry theoretical approach informed by three distinct authors; Pierre Bourdieu, Michel Foucault, and Rom Harré. In this section, both the epistemological stands, and the theoretical approach and influences will be presented.

Social constructionism suggests that meaningful reality is constructed through a relational process that links human beings with the perceived world (Crotty, 1998; Moon & Blackman, 2014). As Schwandt (1998) indicates, *'knowledge and truth are created, not discovered by mind'* (p. 236). According to Crotty (1998), from a constructionist perspective (amongst other perspectives such as objectivism), human beings rely on the world and its objects to construct meaningful realities that bind people and objects together. In this sense, Crotty (1998) states; *'The world and objects in the*

world may be in themselves meaningless; yet they are our partners in the generation of meaning and need to be taken seriously' (p. 44). Social constructionism in particular emphasises the social origin of meaningful reality. In this case, culture is interpreted to direct our behavior and frame how human beings perceive experiences, and thus construct meaning (Crotty, 1998). Synthetically, the 'social' element of constructionism refers to the 'social' and collective way in which meaning is constructed through shared cultural frameworks (Schwandt, 1998).

In this doctoral thesis, grounding the research in social constructionism means that the concept of capital and its multiple expressions (social, natural, political, moral, cultural, economic, built, and human) are social constructions. 'Capitals' should not be interpreted to exist as an objective reality, but rather to constitute a set of conceptual categories through which capital mobilisation processes in communities can be approached and described. The results described in the following chapters 5 through to 7 will show how the ways in which capital mobilisation processes are depicted can vary according to the social or temporal position from which one observes the underpinning social relations. For instance, capital mobilisation was not the same for people in a Motorcamp in the Pines and Kairaki area during immediate response (Chapter 5), than for community leaders in Kaiapoi during recovery (Chapter 6), or for developers during the regeneration phase (Chapter 7). In addition, critically approaching these differences is key to constructing an understanding of capital mobilisation and community resilience building processes through integrating social underpinnings such as power relations and moral values. In order to achieve this outcome, a critical inquiry theoretical approach was adopted that complements the social constructionist approach described in the following section.

4.3. Theoretical influences

Critical inquiry also understands that knowledge is socially constructed, however, it underscores that the construction of meaning is underpinned by power relations (Freire, 1970; Scotland, 2012). The ontological position of the critical paradigm is historical realism which in turn understands reality as shaped by social, political, cultural, economic, ethnic, and gender values (Guba & Lincoln, 1994). Language is another key aspect of the construction of reality as understood by critical inquiry and historical realism because it shapes reality through constant interactions with the world. However, because language is also embedded in power relations critical inquiry challenges naturalised systems of value, language, and cultural assumptions which often hide power inequity within and between communities (Freire, 1970; Scotland, 2012). Additionally, critical inquiry is

associated with research methods that can be used to disrupt power relations between the researcher and participants. Exemplars include dialogical approaches to interviewing and participatory and/or action research approaches, which construct research participants as active participants rather than passive objects of study (Freire, 1970). Finally, to be able to approach the research from a critical theoretical perspective that bridges capitals (e.g., social, cultural, human, political, moral, natural, built, and economic capitals), power relations, and social positioning, three distinct critical social theorists were drawn on: Pierre Bourdieu, Michel Foucault, and Rom Harré. These three authors will be briefly introduced in the following paragraphs and will later be further linked to the analytical process itself (Section 4.7.4.).

4.3.1. Pierre Bourdieu

Bourdieu developed his theory of fields, as a series of relational, dynamic, competitive, hierarchical overlapping and permeable social arenas (e.g., the economic field, the cultural field, the educational field) in which actors seek to achieve their interests based on accrual of multiple forms of physical and metaphysical forms of capital (Bourdieu, 1993). The structure and boundaries of fields are determined by the way in which individuals accrue and mobilise capitals seeking to occupy dominant positions in the field which can also be divided into autonomous sub-fields with porous boundaries. Additionally, fields can be structured hierarchically in relation to each other and also provide a structure in which actors hierarchically position themselves and or are positioned by other actors within the field. Central positions in the field are usually held by actors who have accrued significant capital and can mobilise it to maintain dominance in the field through establishing the rules and norms that regulate the field's dynamics (Bourdieu, 1993). Actors who hold less accrual of economic or symbolic capitals are displaced from central roles in the field (Bourdieu, 1993).

A second concept developed by Bourdieu is capital. Bourdieu defines capital as follows:

*Capital is accumulated labor (in its materialised form or its 'incorporated', embodied form) which, when appropriated on a private, i.e., exclusive, basis by agents or groups of agents, enables them to appropriate social energy in the form of reified or living labor. It is *avis insita*, a force inscribed in objective or subjective structures, but it is also a *lex insita*, the principle underlying the immanent regularities of the social world. (Bourdieu, 1986, p. 46).*

As indicated in Chapter 2, Bourdieu conceptualised four core forms of capital; cultural⁷, economic⁸, social⁹, and symbolic¹⁰ capitals. Habitus refers to the embodiment of cultural capital as mental and bodily dispositions such as mannerisms, use of language, knowledge of social dynamics of a particular group, corporal expressions, clothing, skills, that shape the way in which individuals and groups see the social world and position themselves within it (Bourdieu, 2012, 1990, 1986). Additionally, habitus is developed through human life experiences in relation to the social environment and is understood as constituting individual and/or collective social practices (Bourdieu, 2012, 1990, 1986). Shared habitus is what enables social proximity amongst individuals; shaping social groups or class and thus, constituting an essential prerequisite for the creation of social capital (Bourdieu, 2012, 1986). Shared habitus enables individuals to recognise symbolic claims of legitimacy regarding representativeness for example, and the power accrual by other members of the same group or class. This in turn constitutes symbolic capital. Habitus may be understood as simultaneously structuring and being structured by experiences as well as reflecting the symbolic structures that shape power relations in the social world.

Symbolic capital is only such as long as it is recognised by other actors, thus arguably, a form of capital that exists only if there is a claim of legitimacy of representativeness or discourse where others recognise and acknowledge that claim as legitimate (Bourdieu, 2010, 1989). In a way, all forms of capital are in fact underpinned by symbolic capital in that every capital requires social recognition or legitimacy to hold any value (Bourdieu, 1989). As an exemplar, a New Zealand fifty dollar bill is materially only a piece of paper with drawings, letters and numbers on it. The holder of such an item would be holding a useless piece of paper if it wasn't for the shared social recognition of the institutions that give it symbolic value. In arguing that positions in the field are determined by capital accumulation, and that the multiple forms of capital are ultimately underpinned by symbolic capital, Bourdieu infers that (symbolic) power is always associated with symbolic capital and cannot be exercised '*without the complicity of the whole group*' (Bourdieu, 2012, p. 195). The notion of symbolic power is associated with the power of 'world-making', that is, the power of

⁷ Subjective cultural interpretations of reality and values through which we judge and construct worldviews. It can exist in three states: embodied, objectified, institutionalised (Bourdieu, 1986).

⁸ Highly liquid resources (cash or equivalent) that contribute to the circulation of all forms of capital through consumption and production processes that enable people's livelihood strategies (Bourdieu, 1986; DFID, 1999; Flora & Flora, 2014; Porritt, 2007; Samuelson & Nordhaus, 2010; Wilson, 2010, 2012)

⁹ Social relations that network individuals into collectivities, membership to a group (Bourdieu, 1986).

¹⁰ Symbolic credit; it is the power granted to those who have obtained sufficient recognition to be in a position to impose recognition (Bourdieu, 1989).

changing *'the vision of the world and the practical operations by which groups are produced and reproduced'* (Bourdieu, 1989, p. 23). In addition to Bourdieu's body of theory on capitals, Foucault's social theories were also introduced to address power relations in community resilience building and capital mobilisation processes.

4.3.2. Michel Foucault

Foucault is often portrayed as a 'post-structuralist' and describes himself as an 'anti-structuralist'. He understands power as;

'(...) dispositions, manoeuvres, tactics, techniques, functionings (...) a network of relations (...) (power) is exercised rather than possessed; it is not the privilege, acquired or preserved, of the dominant class, but the overall effect of its strategic positions – an effect that is manifested and sometimes extended by the position of those who are dominated' (Foucault, 1995, p. 26).

Foucault conceives power as reticular, historical, always changing and circulating through society (Geciene, 2012; Laval, 2017). Foucault's perspective articulates a genealogy of power relations and how these function historically in society from micro level social relations within families, school, and sexual practices to macro social relations such as sovereignty, discipline, governmentality, and biopower (Foucault, 1981, 1995, 2007, 2008a). Two key concepts from Foucault's body of theory were drawn on as theoretical influences to construct an understanding of the power relations underpinning community resilience and capital mobilisation processes: Regimes of truth, and technologies of power and self. These will be described in the following paragraphs.

The concept of regimes of truth (or regimes of veridiction) is a concept that links knowledge, truth and power together. Foucault understands knowledge as the *'historical and circumstantial result of conditions outside the domain of knowledge (...) Knowledge is not a faculty or a universal structure (...) knowledge will only belong to the order of results, events, effects'* (Foucault, 2000, p. 13-14). What can be interpreted from Foucault's words is that knowledge does not exist as an objective and external element that can be found or discovered, but that it is the result of a process through which humans attempt to order and structure the unknown. Put another way, knowledge can be understood as a relation of power through which unknown things are appropriated (ordered, compared, structured) by humans. However, not all knowledge falls into the category of true knowledge or truth. According to Foucault, the status of truth is sanctioned by social institutions,

actors, procedures, techniques, and mechanisms that separate true and false discourses (Foucault, 2008a, 2003, 2000). Put differently, truth is also socially and politically produced, and the 'truth' production system is what Foucault calls 'regime of truth': *'Truth is to be understood as a system of ordered procedures for the production, regulation, distribution, circulation, and operation of statements. Truth is linked in a circular relation with systems of power that produce and sustain it (...) a regime of truth'* (Foucault, 2000, p. 132). An exemplar can be found in the way Western European societies' scientific discourse, methods, and institutions are considered as the legitimate truth producing social spaces and constitute an important element of the Western European regime of truth (Foucault, 2000). Therefore, discourses that are produced outside of the sciences can be legitimately displaced or dismissed under the Western European doxa. The concept of regime of truth was an important theoretical element to consider because it helped understand how government-centric hegemonic discourses about the state of the land were shaped during the recovery phase.

Finally, technologies of power refer to a group of techniques, mechanisms, and/or apparatuses used to *'determine the conduct of individuals and submit them to certain ends or domination'* (Foucault, 1988, p. 18). The pastorate is a type of technology of power based on the ancient shepherd-flock metaphor through which some people allow others to govern them through the use of formal and informal procedures and/or techniques as well as rules and laws (Foucault, 2007). Discipline is also a type of technology of power which enables some to govern the bodies of others through the structuring of space, time, and bodies (Foucault, 1995, 2007). Technologies of self are a group of techniques, mechanisms, and/or apparatuses *'which permit individuals to effect by their own means or with the help of others a certain number of operations on their own bodies and souls, thoughts, conduct, and way of being, so as to transform themselves in order to attain a certain state of happiness, purity, wisdom, perfection, or immortality'* (Foucault, 1988, p. 18). The concept of technologies of power in its different variations (technologies of self, discipline, and pastorate) was key to construct an understanding of how individuals or sectors of the communities were tied in different power relations across immediate response, recovery, and regeneration fields affecting community resilience and capital mobilisation processes after the Canterbury earthquake sequence in the Waimakariri.

4.3.3. Rom Harré

Harré's positioning theory is a social constructionist conceptual apparatus designed to analyse narratives under the understanding that social reality is constructed through three narrative practices: conversations, institutional practices, and the use of rhetoric (Harré & Langenhove, 1999; Tirado & Gálvez, 2007). Through the narrative practice of conversation, people construct personal stories in which they position themselves and others in reference to moral and personal attributes, thus assigning fluid 'roles' to themselves and others: *'The act of positioning thus refers to the assignment of fluid parts or roles to speakers in the discursive construction of personal stories that make a person's actions intelligible and relatively determinate as social acts'* (Langenhove & Harré, 1999, p. 17). Additionally, although positioning theory is predominantly used to assess interpersonal encounters, Tan & Moghaddam (1999) argue that positioning theory can also be used to assess intergroup power relations and positioning through the use of linguistic devices such as 'we', 'they', 'us', 'them', 'I', and 'you'. Because Foucault's approach to power is relational, these linguistic devices were utilised to highlight how participants position themselves and others, both individually and as members of a group, across the different fields of power (e.g., immediate response, recovery, and regeneration) articulated from Bourdieu's theory.

These three theorists (Bourdieu, Foucault, and Harré) informed the critical theoretical approach which has underpinned the social constructionist epistemological stance that has been adopted as a foundational perspective for developing this research. These theoretical aspects also informed the design of the methodology and choice of methods which will be described in the following two sections.

4.4. Methodology

Crotty (1998, p. 7) defines methodology as a *'strategy or plan of action'* designed to implement the research, a *'research design'* used to justify the choice and use of specific research methods to develop research outcomes. In recognising communities as heterogeneous and often underpinned by power asymmetries, this research sought to record and explore the way in which multiple subjectivities and perspectives co-exist and relate to each other at a community level in the pre and post-Canterbury earthquake sequence Waimakariri situation. Therefore, a Community-based Participatory Research design was developed that applied a mixed-methods approach to conducting the research. Both the design and approach will be described in the following paragraphs.

4.4.1. Community Based Participatory Research

Thinking critically of the community resilience building processes described in Chapter 2 without community engagement and participation in the co-creation of knowledge is problematic. This is because traditional research approaches are often heavily underpinned by power relations that place the researcher in a hierarchical position and exacerbate exposure of traumatised research participants to further emotional distress. Fostering participation in resilience building processes is recognised in resilience literature as a fundamental pillar on which resilience building processes rely and power asymmetries between research and participants disarticulated (Biggs et al, 2012; Glavovic, 2015; Thompson et al, 2015). Therefore, in order to contribute to New Zealand communities' resilience building processes, a Community-Based Participatory Research (CBPR) approach has been used to frame the design and conduct of the research.

CBPR is underpinned by two core research methodologies: action research, and participatory research (Hacker, 2013; Wallerstein et al., 2018). Action research emerged as a form of research that aims to bridge theory and practice gaps by generating solutions to real world problems. This critical approach rejects the positivist view of the object of study as something external, unrelated to the researcher, which could be approached from a supposedly 'objective' standpoint. Instead, Action research approaches acknowledge the relation between researcher and the object of study and draw from subjective points of views to generate actions directed towards solving particular issues or problems (Bradbury, 2015; Fals-Boarda, 1987, 2001; Israel et al., 1998; Kemmis & McTaggart, 2005; Lewin & Gold, 1999; Wallerstein & Duran, 2003). Participatory research also critiques traditional positivist views, and recognises the importance of including community members in the research process as co-producers of knowledge instead of as objects from which data must be extracted. Participation can range from specific involvement of a community in research phases such as research design, to a deep inclusion of community members through-out all phases of the research (Freire, 1970; Funtowicz & Hidalgo, 2008; Wallerstein & Duran, 2003). CBPR emerged from the combination of these two methodological branches and has been developed globally in fields like public health, social welfare, education, community planning and environmental justice (Wallerstein et al., 2018). There are many definitions of CBPR, though the following definition presents this concept with clarity:

'...CBPR embraces collaborative efforts among community, academic, and other stakeholders who gather and use research and data to build on the strengths and priorities of the

community for multilevel strategies to improve health and social equity' (Wallerstein et al., 2018, p. xlvii).

In New Zealand, CBPR approaches are gaining credibility amongst researchers active in natural hazard and risk research (Thompson et al., 2015), particularly in some National Science Challenge and Centre's of Research Excellence research programmes. At a practical level, the CBPR approach was actioned through applying a mixed-methods research approach that enabled exploration of the wide diversity of perspectives present in the Waimakariri through the use of quantitative analytical methods, as well as in depth analysis of specific narratives through implementing qualitative methods. This mixed-methods approach will be described in the following section.

4.4.2. Mixed-methods

Plano Clark & Ivankova (2016) define mixed-methods research as a term used to describe research processes through which qualitative and quantitative data gathering and/or of analysis are integrated to address a research problem or question. Literature acknowledges numerous typologies to classify mixed-methods approaches such as the four types of mixed-methods (triangulation, embedded, explanatory, and exploratory designs) described by Creswell & Clark (2007), or Leech & Onwuegbuzie's (2007) partially/fully concurrent/sequential design as described by Doyle et al. (2012). However, there is no single mixed-methods framework that is applicable to all research contexts (Doyle et al., 2012; Plano Clarke & Ivankova, 2016).

In this research, a mixed-methods approach was designed that integrated the concurrent use of quantitative and qualitative data gathering and analysis methods and techniques. This approach was designed and implemented in a manner that enabled simultaneous exploration of the inherent diversity of the Waimakariri communities' post-disaster reality while developing a deeper understanding of how participants construct meaning in relation to resilience building and capital mobilisation experiences lived before, during and after the 2010/11 Canterbury earthquake sequence. Figure 8 shows the resulting CBPR research design with the embedded mixed-methods approach to data collection and analysis implemented through the use of specific data gathering and analysis methods (e.g., pilot study, case studies, semi-structured interviews, focus groups, content analysis, narrative analysis) to achieve the research objectives. The methods will be described in the following paragraphs.

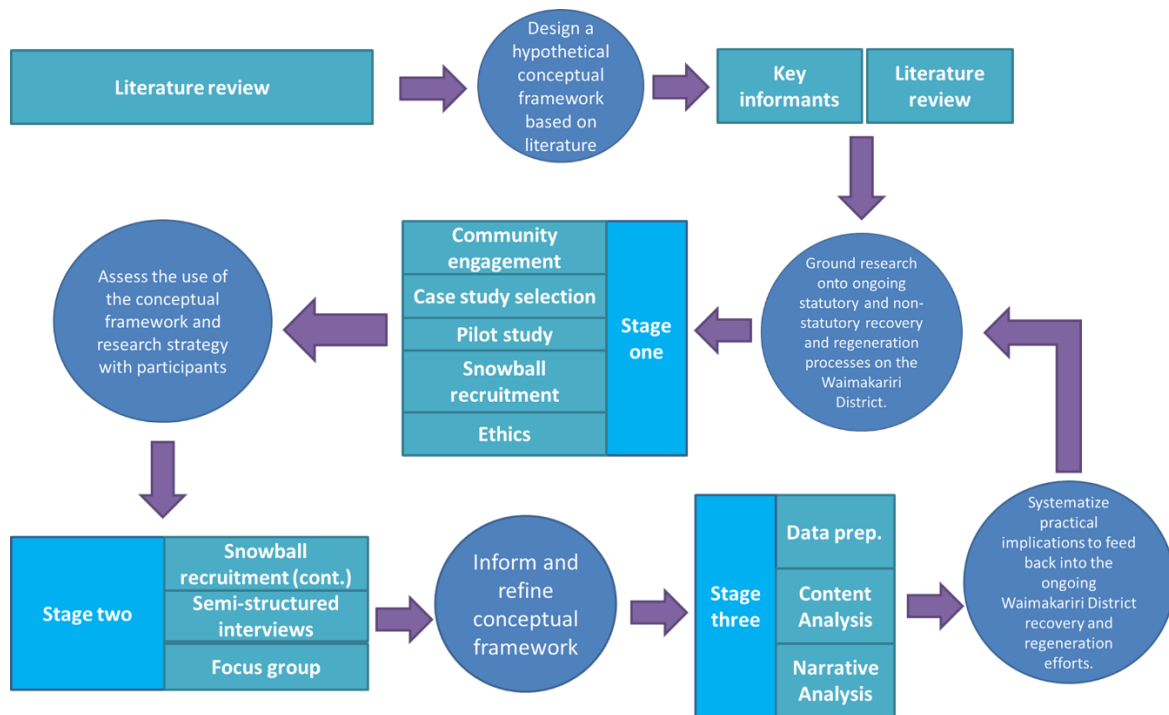


Figure 8. Schematic flowchart describing the CBPR design.

4.5. Methods

This section will provide a brief overview of the different qualitative and quantitative data collecting and data analysis methods and techniques used in this research. Mainly, these methods and techniques were the following: Pilot study, case studies, snowball recruitment, semi-structured interviews, focus group, coding techniques, content analysis, and narrative analysis. The way in which this research was conducted and these methods and techniques were practically utilised will be developed later in the chapter in Section 4.7 (Conducting Research).

4.5.1. Pilot study

Pilot studies in social science research can be conceived of as a small scale version of proposed major research, and are conducted to trial feasibility and/or pre-test research instruments such as an interview agenda (Schreiber, 2008; Van Teijlingen & Hundley, 2010). This research used a pilot study to begin the participant recruitment process, and explore the usefulness of the interview agenda as well as some ethical considerations pertaining to the research process, with key participants.

Eight interviews were conducted with five participants from the Waimakariri District Council; one welfare centre coordinator, two staff members of the earthquake recovery assistance centre, and one individual associated with the Local Council’s recovery management structure. Additional

interviews were conducted with, a community leader from the Kaiapoi area, another individual associated with the Ministry of Social Development, a community leader from the Pines and Kairaki area, and another Council staff member involved in the provision of public infrastructure. All these participants were suggested by the first key informant who recommended these individuals because for their varied knowledge of different sectors of the community and their position in mobilising community capitals in the aftermath of the disaster.

The conversations and interviews conducted as part of the pilot study informed the overall research and fieldwork design. More specifically, results from this initial participant engagement process shaped ethical considerations, the participant recruitment process, as well as interview questions and interview rational. Additionally, the findings from the pilot study supported the feasibility of conducting the research in two case studies: Kaiapoi, and Pines and Kairaki Beaches.

4.5.2. Case studies

Case study research is described in literature as a research method through which phenomena can be studied in depth and in its real-life context (Blatter, 2008; Yin, 1984; Zainal, 2007). Yin (1984, p. 23) specifies that case study research method is especially applicable in occasions *'when the boundaries between phenomena and context are not clearly evident'*. Case study research was utilised as part of the methods of this research to effectively explore community resilience and capital mobilisation processes occurring in the real-life context of post-disaster communities in the Waimakariri District.

The case study localities explored in the research were selected based on two criteria: geographical situation in the Canterbury region of New Zealand; and risk for seismicity. Case study localities were also chosen because they were significantly impacted by the 2010-2011 Canterbury earthquakes, and were engaged in building community resilience to earthquakes. As a result, two localities were selected; Kaiapoi, and Pines and Kairaki Beaches. Rangiora, which is the commercial and political centre of the district, was included as an important contextual element of the district and its interactions with the chosen study locations at various stages of post-disaster recovery were addressed but were not the focus of the study. The case study localities enabled an exploration of how community capitals (as described in Chapter 2) were drawn on and mobilised in the District. Further to the literature review, in which the story of the Waimakariri District Council's recovery process after the 2010 Canterbury earthquakes was highlighted, this area of Canterbury was chosen as a key case study site because of the potential it offered to explore capital mobilisation in the real-

life context of a post-disaster situation. The case study context is described in the following paragraphs.

Home to the Ngāi Tūāhuriri hapū of the indigenous Ngāi Tahu tribe, and with an estimated population of 49,989 people in 2016 (WDC, 2016b), the Waimakariri District is a small district located north of Christchurch on the northern banks of the Waimakariri River (Figure 9).



Figure 9. Map of the Waimakariri District (designed by the author using satellite images from google maps).

With abundant fertile flat lands, this District has historically been dominated by agricultural and pastoral farming activities, although recently horticulture and forestry have gained importance (WDC, 2016b). Its two main townships, Rangiora and Kaiapoi, host half of the total population, and have grown at an accelerated pace in the past ten years (WDC, 2016b). The 2010/2011 Canterbury earthquake sequence significantly affected life in the Waimakariri region.

Three suburbs in particular were severely damaged during the 4th of September 2010 magnitude 7.1 earthquake: Kaiapoi, Pines Beach, and Kairaki Beach. Later, the land assessments that were carried out by ministerial orders throughout June 2011 and in response to the 22nd of February 2011 M6.3 earthquake, led to a red-zoning process that deemed a fourth of the Kaiapoi, half of Pines Beach, and all of Kairaki Beach housing stock uninhabitable (Brookie, 2012; Vallance, 2013). Although the

Waimakariri district was spared from much of the damage caused by this second earthquake, its recovery plans were dramatically affected by political decisions triggered by the February 2011 event. The Waimakariri District Council (WDC) developed an Integrated Community Based Recovery Framework to address recovery and regeneration challenges. Recognised as 'best practice', the framework and leadership model developed by the WDC placed community engagement at the core of its actions (Brookie, 2012; Vallance, 2013, 2015). Therefore, this district, and more specifically, the Kaiapoi, and Pines & Kairaki localities were chosen as the sites for exploring how the accrual and mobilisation of capitals can affect community resilience processes.

4.5.3. Snowball recruitment

Snowballing is a legitimate and frequently used approach to participant recruitment in qualitative research (Tenzek, 2017; Patton, 2001). Snowballing offers the potential to engage participants from mainly hegemonic and highly networked subsets of the population, but it may also exclude representation from groups residing in the margins (Kirchherr & Charles, 2018). Therefore, in order to ensure breadth of diversity in participants from hegemonic and marginal positions, variations of measures developed by Kirchherr & Charles' (2018), were drawn on in the data collection phase. Measures used included: prior researcher personal contacts, sample seed diversity, communication technologies as substitute for face-to-face interviews, respectful and mindful persistence, and repeated recruitment of participants.

4.5.4. Semi-structured interviews

Semi-structured interviews were used to collect participants' perspectives and stories, because this form of interview enabled participants to answer questions predetermined by the interviewer whilst ensuring that participants were able to freely voice their narratives and perspectives on the themes being discussed (Galleta & Cross, 2016; Gill, et al., 2008; Rabionet, 2011). A dialogical or conversational approach was applied when interviewing because power dynamics shape the social construction of knowledge as this approach to interviewing helped reduce asymmetries in power between interviewers and interviewees, and also fosters reciprocity between participants and the researcher (Roulston, 2008; Freire, 1970). Detractors of this approach such as Kvale (2006) critique the approach by pointing out that conversational interviewing can be conducive to subjective biases. However, from a Social constructivist perspective, all knowledge (including scientific) can be understood to be underpinned by subjectivities. In fact, in this type of qualitative research, the acknowledgment and exploration of subjectivity enriches analysis. Conversational interviewing also

allows building closer, empathetic, and trustworthy bonds with participants thus facilitating deep and meaningful exploration of participants' experiences (Knapik, 2006). Further, this approach recognises that the interviewing process is a collaborative effort between two people during which both participant and researcher co-create the narrative and create opportunities for self-reflection and change (Fontana & Frey, 2005; Freire, 1970). This choice of interviewing method sought to elicit narratives across three thematic blocks: perceptions on community well-being and its evolution post-earthquakes; capital priorities and distribution for community well-being post-earthquake; and factors that strengthen or weaken community well-being (Appendix E).

4.5.5. Focus group

Focus groups are a qualitative interviewing research technique developed with a small number of participants (between 6 to 12) who can provide insights on a focalised matter (Dilshad & Latif, 2013; Morgan, 2011; Rabiee, 2004). Morgan (2011) suggests that focus groups can be more or less structured. In addition, the size of the group is also important, although the standard focus group is usually considered to be between 6 to 12 participants, there are increasing trends to hold mini-focus groups composed of 4 to 6 participants when these have a long and substantial experience in the topic being explored (Krueger & Casey, 2015; Dilshad & Latif, 2013). However, these smaller groups also have limitations in terms of number and diversity of perspectives being represented (Krueger & Casey, 2015).

In the case of this research, the aim of the focus group was to explore participants' views in regards to some of the community capitals and community well-being trends emerging in the Waimakariri and the ways in which these trends are related to the earthquake situation. Therefore, a mini-focus group was conducted using a relatively unstructured approach to facilitate an open discussion amongst participants to explore the way in which the real-life post-earthquake long-term recovery was affecting and being affected by the mobilisation of community capitals.

4.5.6. Coding

Coding is a widely accepted technique to process and organise qualitative data in order to identify patterns and interrelations within interview texts (Joffe & Yardley, 2004). It is also an exploratory technique to aid the process of navigating through a narrative while linking ideas and theory to experiential knowledge provided by the participant (Saldaña, 2010). The coding process applied during this research drew on NVivo 11, a qualitative data analysis (QDA) computer software package

in order to map key community capital and community resilience associated thematic categories and archive related extracts of participants' interviews.

4.5.7. Content Analysis

Content analysis is an analytic method used to interpret text or video data from individual or focus group interviews, printed materials such as newspaper articles, text from social media, video-tapes, amongst other sources (Mathison, 2011; Hsieh & Shannon, 2018). This type of analysis tends to be descriptive and may provide insights into potential code relations and patterns that can lead to deeper analysis (Maier, 2018; Hsieh & Shannon, 2018). In this research content analysis was performed through quantitative techniques, that is, through measurements (Weber, 2011), and code networks (Pokorny et al., 2018) which allowed to elicit broader capital trends across all interview material. However, in order to provide a deeper understanding of how participants constructed meaning through their experiences of the post-disaster situation in the Waimakariri, narrative analysis was used.

4.5.8. Narrative analysis

Riessman (2008) defines narrative analysis as '*... a family of methods for interpreting texts that have in common a storied form*' (p. 11). Narrative inquiry embraces subjectivity in a two-fold manner. It highlights the role of subjectivity in the construction of social worlds, identity, agency, and power (Squire et al., 2017; Riessman, 1993), while also embracing the interaction of subjectivities between listener/questioner and story-teller in co-constructing a narrative (Riessman, 2014, 2008).

A narrative can be conceived from micro to macro scales. Put in other terms, a narrative can consist of a very brief yet meaningful expression, a short story about a particular event, long enunciations expressed in reference to personal life elements, long oral or written expressions about the passing of time such as an entire lifetime, or even accounts of historical political events at a macro level (Holstein & Gubrium, 2015; Riessman, 2014, 2008). Polkinghorne (1988, p. 13), for example, conceives narratives as stories; '*narrative can refer to the process of making a story, to the cognitive scheme of the story, or to the result of the process – also called stories, tales, or histories*'. He states: '*As I use it, the term story is equivalent to narrative*'.

Narrative inquiry was used to analyse participants' interview talk because as Riessman (2014) states '*personal narratives are deeply social*' (p. 4). Narratives are situated in or reference specific places and time. Personal narratives also reflect influences of contemporaneous societal, political, and

historic externalities and thus communal and societal stories. As the aim of this research encompassed the interactions of these narratives at a community, relational level, the various voices of participants were placed in dialogue with each other to reflect participants' different experiences and perspectives in relation to capital mobilisation in the context of the post-disaster lived reality of the Waimakariri district.

Overall, the use of this mixed-methods approach to the research allowed exploration of diverse points of view as well as in depth analysis of narratives present in the post-disaster real-life context of the Waimakariri district. However, the application of these data collection and analytical methods or techniques in a post-disaster context also had significant ethical implications. An overview of these ethical implications will be presented in the following section.

4.6. Ethics

Participants were an active part of earthquake recovery efforts, and perhaps even victims of the devastating consequences of the earthquakes themselves. Consequently, the interviewing process could have easily generated emotional discomfort. A Massey University Human Ethics Committee low-risk notification (application No. 4000017421) was applied for and obtained in June 2017 to conduct the pilot study and assess the ethical implications of the envisaged research with key local informants. The findings of the pilot study demonstrated the merit of submitting a full ethics application (application No. 17/28) which was later lodged and approved in September 2017. Both the low-risk notification (application No. 4000017421) and the full ethics application (application No. 17/28) provided important opportunities to reflect on the ethical implications of this research and strategies to mitigate risks for participants and researcher (Appendices A and B). The following sections will describe specific considerations which were of particular ethical concern for this research.

4.6.1. Privacy

Privacy is an important ethical aspect to consider because it enables the research to be structured in a way that guarantees research participants right to control who has access to his or her information. To ensure privacy, interviews were conducted in physical locations chosen by participants. Once participants expressed their willingness and interest to be a part of the research, they were invited to select an interview location that suited them in terms of public exposure, emotional safety and physical accessibility. This process recognised participants' agency in relation

to the research, as well as helped ensure privacy, comfort, and accessibility for participants. Some participants opted to meet in public spaces, such as the local library and cafés, others opted to conduct the conversation in their private residences, and others opted to conduct the conversation in their private workspace.

4.6.2. Informed and voluntary consent

Informed and voluntary consent from participants is especially important to avoid any kind of deceitful or unethical engagement with participants. Information sheets containing background information on the research and consent forms were always provided for participants to review, discuss, and sign before interviews or any other form of research engagement occurred. Participants were provided with opportunities to discuss the information sheet before signing the consent form (Appendices C and D). Discussions also ensured that potential participants understood the nature of the research and their participation rights, stated in the information sheet.

Interviews were conducted, recorded and transcribed only with the permission of participants who were free to decline to answer specific questions on topics, or withdraw completely from the project or interview at any time. In addition, buy-in and approval for the research was sought from community leaders who were recommended as individuals with deep knowledge of and good standing within the communities. Thus, the research obtained symbolic approval and consent from the community.

4.6.3. Anonymity and confidentiality

Anonymity and confidentiality are two important ethical elements to consider because guaranteeing both can help keep participants safe from possible harm derived from their opinions expressed in confidentiality during interviews. Emotional distress and embarrassment, social punishments, or even conflicts at work could occur if participants' views were publicly linked to their actual identity. To avoid this, data was managed carefully in accordance with the Massey Ethical Code, and the Privacy Act 1993. Pseudonyms were used to avoid direct individual identification and help ensure personal confidentiality, unless participants indicated otherwise and wished their identity made public. Pseudonyms were assigned randomly by the researcher using Tupi Guarani¹¹

¹¹ Indigenous language spoken by people across the central and central south regions of South America. This language was chosen due to its significance to the researcher and his cultural roots.

names of plants, animals, and geographical features (rivers, mountains, lakes) from the Uruguayan region, and bore no similarity to participant's legal names.

The data (recordings, transcripts, field-notes) are being kept in two separate private hard-drives for the duration of the Ph.D. research and may be destroyed thereafter. Some of the interview transcripts were printed and these were kept in a locked drawer in the researchers' private desk, the researcher was the only individual with access. Printed transcripts may also be destroyed after the Ph.D. is completed. That said, despite all the proactive measure taken to protect participants' privacy and confidentiality, the researcher may only assure confidentiality to the extent allowed by the law and this was made clear in all consent forms.

4.6.4. Minimisation of potential harm to participants

To minimise potential harm to participants, eight participants were approached to discuss the minimisation of potential harm to participants. These participants were selected because they had been either working in community development and/or mental health environment in the Waimakariri for almost seven years, or because they held significant experiential knowledge of the community and its vulnerable members. The advice of these experienced professionals and community leaders was considered extremely valuable and they were engaged through the pilot study to discuss safe interview designs and the potential for emotional distress in participants. These eight participants were identified by a Council informant as participants with relevant post-disaster community knowledge and experience. All interviewees were asked the following two questions:

Did you experience any kind of emotional distress at any point during the course of this interview?
Do you think it could provoke any kind of distress to residents of Kairaki, Pines, and/or Kaiapoi?

Every interviewee agreed that they did not feel any type of emotional distress during the course of the interview. However, regarding the second question, interviewees agreed that although it was unlikely that the interview would generate distress for most residents, it could be distressing for some. When interviewees said that it was possible that the interview might generate distress, a follow-up question was posed regarding what strategies would mitigate the risk of engaging participants who would likely feel distressed by the interview. Multiple answers were provided and helped inform the design of a risk mitigation strategy.

One of the recommendations was to get referrals from local key informants to avoid randomly selecting people who could be particularly vulnerable. This action was taken and a Kairaki and Pines

community leader, and community development staff at the WDC provided the names of residents who could represent a diversity of opinions in the area, but not be distressed by the interview topics. These community leaders acted as liaisons, approaching appropriate residents and seeking their consent to participate in the research. They then forwarded contact information to the researcher, and the risk of exposing residents to unnecessary distress through a random sample was therefore reduced to a minimum.

The aforementioned approach reduced risks to participants but it did not eliminate it completely, so, a second level of risk mitigation was conducted in relation to where and how the interview was conducted. Multiple approaches were suggested by participants. Initial research informants suggested that interviews with Kaiapoi residents could be conducted in the Kaiapoi library where the WDC has staff located that could offer support in cases of emotional distress. In regards to interviews held in interviewees' private residences, three strategies were suggested. These included requesting the contact details of a person (e.g., family member, friend) that the interviewee would like notified if they experienced unmanageable distress; providing the contact details of a councillor, and, agreeing to having a support person present at the interview, if requested by the participant. These strategies helped reduce psychosocial risks to both participants, and myself as researcher.

4.6.5. Challenges for the researcher

A researcher's personal emotional and physical safety is a well-recognised concern in social science research (Kenyon & Hawker, 1999; Mitchell & Irvine, 2008; Stahlke, 2018). During this project, the researcher's exposure to physical harm was minimal, and initially the risk of exposure to emotional distress was considered minimal. However, during the fieldwork, occasions arose where the distressing nature of some of the narratives recorded and interviews negatively affected myself, the researcher.

Emotional distress was also experienced while transcribing some recorded interviews which referred to delicate topics including emergency responders' and social service providers' increased levels of stress and exposure to extreme situations. Interviews also discussed the increase in self-harm incidents in the community, and the negative psycho-social consequences of the earthquakes on children and families. Less explicit elements of the narratives such as emerging power inequity, forced displacement, and stigmatisation of residents who decided to stay in the red-zones also created emotional tension for the researcher. The exposure to some of these narratives and

underlying elements through the transcription and analytical process created situations in which strong, but manageable emotions arose. This cumulative effect of frequently revisiting the distressing narratives with deep levels of mental engagement and concentration which places the transcriptionist/analyst in a vulnerable emotional position has been recently noted by researchers such as Stahlke (2018) and Kiyimba & O'Reilly (2016).

Strategies used to reduce my risk and distress after interviews and during transcription included conversations with supervisors, taking regular breaks from transcription activities to avoid intensification and/or magnification of the emotional response to distressing narratives. In addition, regularly practicing sports and playing music helped distract and relax the mind. Introspective meditation also helped to identify and acknowledge the emotional processes that were unfolding which in turn enabled emotional awareness and well-being.

4.6.6. Inconvenience and hazards

The time participants were dedicating to being a part of the research through the interviewing processes was important and acknowledged during fieldwork. Interviews were scheduled to minimise inconvenience for participants and took place on a day and at a time that suited participants. Some interviews took place in private offices during the participants' working hours. On these occasions, although financial retribution for participants' time was not provided, participants were re-consulted in order to double check the time was still appropriate, and that they had permission from employers to devote work time to the interview. On occasions where participants chose to conduct the research in a café, drink and food were offered and purchased for the participants in recognition of the time they were dedicating to the research.

4.7. Conducting research

The following section will provide an overview of how the previously described CBPR design and mixed-methods approach was applied in practice, during the research.

4.7.1. Participant recruitment: Snowball

Community engagement to support the snowball participant recruitment process was initiated in several phases. Initial engagement began in March 2017, with a first visit to the field, when a meeting with three high level Waimakariri District Council officials was conducted. The objective of this meeting was to explore the openness of the Council to have this research nested in the District, and begin building relations with one key informant from the Council.

Further community engagement occurred in July 2017 and was focused on embedding the research in the field. This was achieved through meetings with Council staff. The aim of the meetings was to develop a deeper understanding of the regeneration processes acting in the Waimakariri. Engagement with community leaders and council staff also triggered the process of recruiting participants through using snowballing methods.

Participant recruitment was specifically developed through the collaborative support of community leaders from Kaiapoi, Pines-Kairaki Beach, and from the Waimakariri District Council. The aim of the recruitment process was to elicit participants that: (1) represented diverse opinions and experiences in the way they viewed how capitals could have been mobilised post-disaster; (2) were directly impacted or working with any or all of the stages in the earthquake process (immediate response, recovery, regeneration); and (3) represented multiple stakeholders including the public, local authorities, central government, and the private sector. A total of 124 potential research participants from these various sectors were identified.

Social network software was used to graphically represent and analyse the network of participants identified and ensure that a wide range of community viewpoints were represented in the final cohort of research participants. The result of this analysis is shown in Figure 10 where the nodes which are depicted as small shapes such as triangles and squares represent individuals, the lines represent a stakeholder identifying a potential participant, and the arrow head indicates which participant was the referred and which the referee (the arrow starts from the stakeholder recommending a participant and moves towards the potential participant).

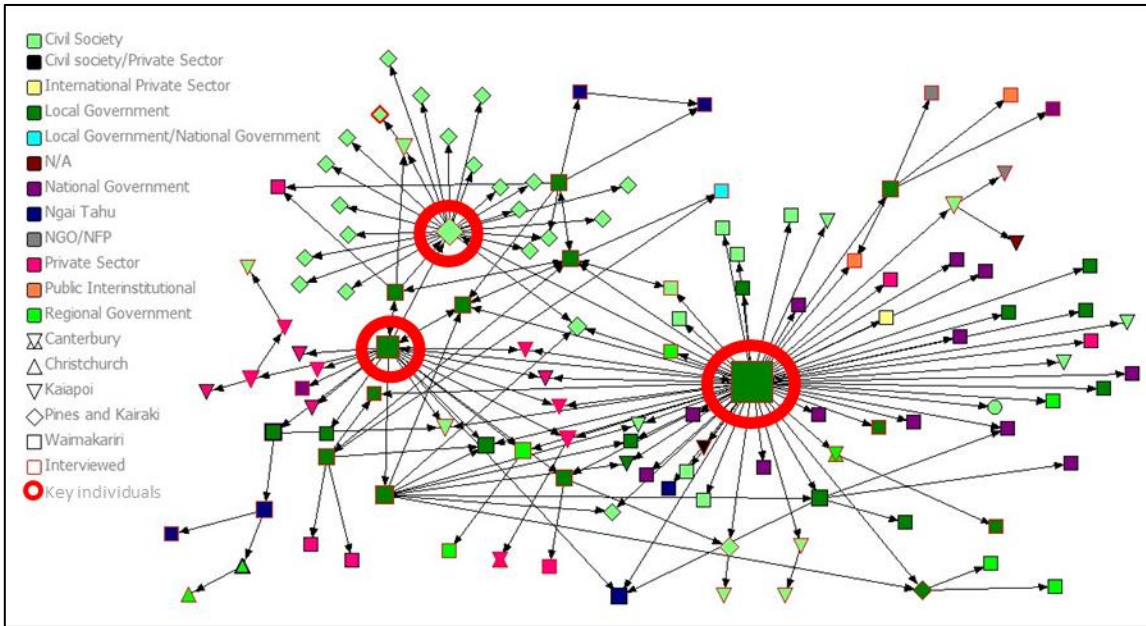


Figure 10. Total network of stakeholders identified through the stakeholder mapping process.

The nodes were classified by geographical distribution and place of influence (shape of the node), by sector (color of the node), whether or not they were part of the participant cohort (red rims indicate those who were interviewed), and their importance (based on number of relations) in the network (size of the nodes). As the network shows, the objective of reflecting geographical, sectorial, and governance diversity was achieved by identifying diverse social actors associated with the Waimakariri’s response, recovery, and regeneration story. Some of the social actors identified were affiliated with regional and local authorities (such as EC, WDC, and local Rūnanga¹²), the building and real-estate industry (developers and real-estate agencies and agents), as well as being involved as private residents and members of community organisations (Residents Associations, individual home owners and renters). The expansion of the participant cohort continued until data saturation was achieved. Data saturation was considered as a process rather than a specific point in time or number of interviews (Saunders et al., 2018). Data saturation occurred when the narratives, themes, and characteristics of participants began to become repetitive. As a result of this process, a cohort of 51 research participants was developed.

Finally, the purposive recruitment of participants was developed through two approaches. Recruitment encompassed individual stakeholders, who were engaged in statutory recovery and

¹² Local tribal Councils.

regeneration efforts that were referred by an intermediary. Residents and ex-residents of the red-zone areas were approached differently. Key informants consulted privately and obtained the potential participants consent to share contact information then passed on their details and contextual information to the researcher at which time they were approached about participation in the research.

4.7.2. Data collection: Semi-structured interviews and focus group

The choice of semi-structured interviews allowed the design a flexible and open interview agenda to co-create a deeper understanding of how each participant perceived, experienced, and narrated capital interactions in direct relation to ideas of well-being and earthquake recovery. Interviews started with a request by the research for the interviewee to briefly introduce herself/himself, her/his activity before the earthquakes, and how they came to get involved in the different stages of the post-earthquake landscape. This allowed the interviewee to immerse herself/himself in the memories of that time, and provided referential elements to introduce the questions in a way that best fitted the emerging narrative. This process allowed dialogue to flow naturally and address key discussion themes. Conversations generally progressed in ways that provided the necessary space for participants to refer back to parts of their narratives, reflect on those, and pose questions in reference to the themes of the interview. After the interview, a follow-up call or email would be generated to reiterate the researcher's appreciation for the participant sharing their time, and an explanation regarding the interview transcription and textual analysis process was also provided.

The mini-focus group described previously in this chapter was coordinated with Social Services Waimakariri, a network of local social and mental health service providers who meet monthly in order to collaborate in tackling the emerging social issues. Four staff members of local and regional social service providers participated in the mini-focus group and the conversation took place in a meeting room in the local Ministry of Social Development offices in Rangiora. The mini-focus group began with a very brief overview of this research. The purpose of the focus group was explained, and the topic prompted conversation. Participants enthusiastically dialogued with each other. Moderation was minimal, as the conversation seemed to organically flow to cover the overarching question and emerging social issues. Similar to the semi-structured interviewing process, the conversation was recorded, transcribed and sent back to participants for verification.

4.7.3. Data processing: Transcription

Transcriptions were made verbatim and transcribing began on the same day of the interview to facilitate the iterative process of assessing and checking for saturation while gaining familiarity and closeness to the data. Verbatim transcription is often taken for granted or overlooked (Davidson, 2009; Lapadat, 2000; Poland, 1995), not always needed and perceived as significantly time, physical, and human resource consuming, (Halcomb & Davidson, 2006). However, it is also considered an early and essential part of the qualitative analytical process in that it significantly affects how participants are understood and narratives portrayed (Oliver et al., 2005; Poland, 1995). Additionally, when verbatim transcriptions are completed by the researcher, this enhances researcher's familiarity with participants' narratives and facilitates data analysis (Lapadat, 2000; Poland, 1995). This approach to transcription was selected for this reason.

4.7.4. Data interpretation and analysis: Coding, content analysis, and narrative analysis

Thematic analysis of participants' talk informed coding designations and in-depth analysis of interview data. The process was reflexive or as Braun et al (2019) state, coding was '*an organic and open iterative process; it is not fixed at the start of the process*' (Braun et al., 2019, p. 848). Thus, although a limited number of codes and categories had been pre-determined before the data analysis phase, these initial codes evolved and changed. During analysis a set of ten initial codes (representing an initial set of capitals and community well-being as a separate code) were created as well as proxies which were associated with each capital code. The initial code social capital and related proxies presented in (Table 5), constitutes an exemplar.

Table 5. Example of capital proxies for social capital.

Capital	Proxy	References
Social Capital	Relationships	Bourdieu, 1986; Coleman, 1990; Flora & Flora, 2013; Fukuyama, 2000; Ostrom & Ahn, 2003; Porritt, 2005; Putnam, 2000; Schuller et al, 2000; Szreter & Woolcock, 2004; Woolcock, 2001
	Acquaintance	
	Collectivity	
	Trust	
	Formal and informal rules	
	Reciprocity	

As the coding process evolved informed by analysis of participants' talk and theoretical influences, initial codes or capitals were re-shaped, thus reshaping the conceptual framework. Examples of changes to the codes can be found in the way spiritual capital was initially included as a code (and proxies) but finally excluded from the framework because it did not appear with the frequency or magnitude as initially anticipated. In addition, analysis of participants' talk also resulted in the

subdivision of the initial codes into two code groups, one group contained the positive codes or proxies associated with a capital, the other the negative codes. These groups were shaped by the positive or negative connotations that interviewees gave to any particular reference to a capital proxy. Within each of these sub-groups, a third group of codes was introduced to list the specific proxy that linked a reference in the transcript to a specific capital as well as both positive and/or negative aspects (Table 6).

Table 6. Example showing coding groups and their titles.

First code group	Second code group	Third code group
Built Capital	Positive	No significant damage to private property (buildings)
		Access to diggers and trucks
	Negative	Damage to public infrastructure
		Informal and sub-standard building practices

Initial data analysis of the 51 interviews generated 225 coding categories across all coding groups. Additionally, and as Table 7 illustrates, two further code groups were also created. The first code group was associated with each case study (Kaiapoi, Pines and Kairaki Beaches), and the second code group with time, under which the phases of disaster risk reduction associated with ensuring resilience to earthquakes are listed as sub-codes.

Table 7. Example showing coding groups and their titles.

First code group	Second code group
Kaiapoi	Pre-event
	Immediate Response
	Recovery
	Regeneration

Following the coding of participants’ interview transcripts a combination of content and network analysis was conducted to search for patterns in the data through measurements. Measurement procedures in content analysis usually consist of the simple numeric frequency with which a particular word, phrase, code, or theme appears in the analysed piece of text. In the case of the transcriptions being analysed, because multiple codes and sub-code groups were created, it was possible to analyse how frequently positive or negative references to ‘capitals’ were made in each individual transcript, or across transcripts. This facilitated an exploration of the frequency of capital

references across case studies (Kaiapoi, and Pines and Kairaki Beaches) and time (pre-event, immediate response, recovery, and regeneration).

In addition, coding allowed the researcher to conduct a novel type of analysis that is characterised by Pokorney et al (2018) as a network analysis of codes. Network images were created using network analysis to graphically illustrate positive and negative capital code relation across narratives, case studies, and time. Because the coding was developed using NVivo 11, it was possible to extract raw cross-tabulated tables of code interconnections from NVivo 11 as '.xlsx' files. These matrixes consisted of rows and columns containing the selected codes for this analysis, and the intersecting cells between rows and the columns would contain the number of times the code in the row overlapped with the code in the column, indicating a relation between both codes. These files were later opened in Office Excel and the cross-tabulated matrixes were structured to fit a two-mode network format readable by UCINET 6, a software designed for the analysis and processing of social network data. These newly formatted networks were then imported into UCINET 6 and transformed the file extension from '.xlsx' to a UCINET system file which then enabled the file to be opened in Netdraw, a computer program specifically designed to visualise social network data. As a result, visualisations of capital interrelations across space and time were able to be explored as code networks, where the nodes of the network represented the capitals, and the edges of the networks represented the in-text interrelations between them.

Following these procedures, data could be organised in a way that analysis and navigation through the multiple community voices could be done while maintaining the reference of which participant was speaking, the specific case study to which the interview extract was referring to, and the broad time to which these extracts were referring to (e.g. pre-event, immediate response, recovery, regeneration). Additionally, having positive and negative capital codes that crossed transversally across capitals, case studies, and recovery phase, enabled exploration of the ways in which participants' voices intersected in space (case studies) and time (stages of the recovery). These intersections were indicative of the divergent and convergent points of view that exist in what have traditionally been constructed as homogeneous communities, and how these perspectives influenced the way capitals were drawn on and mobilised across the community in the context of disaster response and recovery. This approach facilitated recognition of broader themes such as the marginalisation in response and recovery, hierarchies, and metaphysical aspects such as identity and sense of place of built capital. In addition, this approach enabled key word searches through

Google for online news articles that were used as secondary sources of data to inform and contextualise analysis of primary data, participant's voices. Lastly, identifying emergent code patterns enabled further in-depth inquiry through narrative analysis of participants' talk which was prioritised as the primary source of data. This will be described in the following paragraphs.

Narrative analysis was conducted by first selecting a reduced number of interviews through the use of phronesis. These selected interviews represented the diverse community voices and exemplify the emerging themes of interaction of capitals such as the importance of metaphysical capitals, and their relation to community well-being across all stages of the earthquake recovery in the Waimakariri. Phronesis can be understood as the cultivated practical wisdom developed by the analyst to hear the stories that speak out and ask to be told (Frank, 2015; Kinsella & Pitman, 2012). Phronesis involves careful deliberation informed by reflection and guided by the researchers' familiarity with participants' stories. Key to this process is the researcher's understanding that the selected stories are partial accounts of individuals who will continue to reconstruct their narratives beyond the time of the interview in a continuous evolving process (Flyvbjerg et al., 2012; Frank, 2015). Phronesis is a practice, a craft; it results from the iterative process of analysing in reference to research questions, developing arguments, revising story selection, and writing (Frank, 2015). A total of eight participants' narratives were selected and subjected to further narrative inquiry, using an approach developed by Bell (1999) and synthesised by Ezzy (2013). This narrative enquiry approach consisted of identifying narrative segments of transcript, examining the structure of the statements, examining the telling of stories and how they relate to each other, and exploring the connections between the personal narratives and broader cultural and political processes (Ezzy, 2013, p. 100).

Personal narratives were told in the first person. The participant's told stories of their daily life after the earthquakes, meaningful moments and events, and discussed their role(s) and position in the community as well as the role(s) of others. Participants also shared their perspectives on the multiple pre and post-disaster phases as well as their expectations about the future. These personal experiences and perspectives became the focus of the narrative inquiry and informed the development of the conceptual framework.

Narrative inquiry relies heavily on the interpretation process (Bold, 2013; Kim, 2016; Riessman, 2008), which is in turn significantly associated with finding narrative meaning (Kim, 2016; Polkinghorne, 1988). Narrative meaning can be defined as 'a cognitive process that organises human

experiences into temporally meaningful episodes' (Polkinghorne, 1988, p. 1). Polkinghorne goes on to state: *'The goal of research into the production of meaning (...) is to provide a kind of knowledge that individuals and groups can use to increase the power and control they have over their own actions'* (p. 10). However, meaning is elusive, it is not tangible, or static, and only accessed through the story-teller's narrative which in turn, are also context-sensitive (Polkinghorne, 1988). As meaning is found through interpretation, the researcher's subjectivity also contributes to shaping the meaning through the interpretative process (Kim, 2016; Finlay & Gough, 2003). A reflexive approach became essential to the research because it allowed placement of the researcher (myself) as *'a central figure who actively constructs the collection, selection and interpretation of data'* (Finlay & Gough, 2003, p. 5). In this sense, a mixed use of reflexivity as social critique and reflexivity as ironic deconstruction was used to address and explore issues of power around the mobilisation of capitals in post-disaster community relations and situations. The social theories developed by Bourdieu, Foucault, and Harré described previously in this chapter were crafted into an analytical framework that shaped the way participants' narratives were interpreted as indicated below.

In this research, Bourdieu's concept of fields has been applied to frame analysis in chapters 5 through to 7 understanding each of them as permeable social arenas in the Waimakariri district, in which different stakeholders drew on and mobilised different forms of capitals following the Canterbury earthquakes (Figure 11).

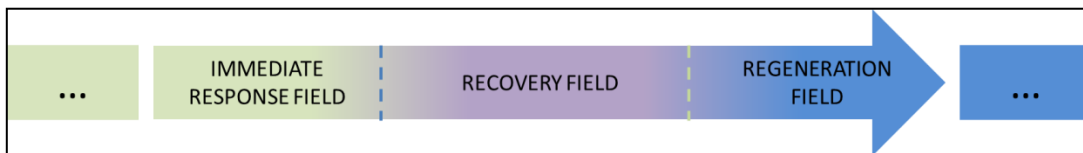


Figure 11. Timeline illustrating the interrelated temporal and spatial continuum of post-disaster fields.

More specifically, the response to the earthquake is conceptualised as the concurrent and permeable fields of immediate response, recovery, and regeneration. Each of these fields was developed into a chapter that showcases the stories of actors who accrued and mobilised different capitals (e.g., economic, social, cultural, moral, symbolic capitals) within their respective fields. Bourdieu's conceptualisation of capitals were utilised as the main theoretical framing for exploring the ways in which capitals were accumulated and mobilised to secure participants' positions within the fields of response, recovery, and regeneration. However, it was the voice of participants and their experiences that helped further develop the framework, reflected in excluding capitals which

were expected to be relevant (such as spiritual capital), and including others (such as symbolic capital), that were not considered relevant, based on findings from the original literature review.

Foucault's concept of discipline also provided an analytical reference point in chapter 5 to highlight the disciplinary mechanism ('training') through which an emergency responder (*Kururú*) built his identity as response 'professional'. In chapter 6, the concept of discipline was also linked with the notion of police as a surveillance technology through which central government exercised power in the red-zones. Analysis illustrated how the government's management of the red-zones was characterised by the hierarchical positioning of government that marginalised local residents in Kaiapoi. Furthermore, Foucault's conceptualisation of regimes of truth was also essential for the analysis of participants' talk in chapter 6 because it helped illustrate how central government was able to mobilise economic, built, social, cultural, and symbolic capitals to produce the dominant discourse about the state of the land in the red-zoned areas. In turn, by drawing on this narrative, central government was able to silence a locally produced geo-technical narrative that would have supported residents' argument to stay in the Pines and Kairaki red-zoned areas. Instead residents were ultimately displaced from the area. Finally, Foucault's theories of technologies of power and technologies of self were drawn on in chapters 5 and 6 to explain how pastoral power relations underpin actors' positions in the centre of the different power fields. The theory of technologies of self was also applied in chapter 6 to help illustrate how moral values and legacy may be drawn on by individuals such as *Yarará* to control and shape their behavior in relation to others.

Harré's positioning theory ultimately informed all chapters by providing the necessary theoretical elements to construct an understanding of how different participants position themselves and others in the different fields (immediate response, recovery, and regeneration).

4.7.5. Research limitations

This research initially set out to be a Community Based Participatory 'Action' Research. However, time restrictions driven by opportunities to engage in fieldwork, and a lengthy interview transcription process meant that the 'Action' element of the research had to be postponed, and the research reframed as Community Based Participatory Research. In addition, this research also had limitations in terms of not being able to include some important sectors of the community. These limitations will be described in the following paragraph, starting with the restriction in recruitment.

This research did not include in the recruitment process specific sectors of the community, such as children, severely disabled individuals, or individuals experiencing mental ill health who might experience difficulty in participating in interviews, or be unable to provide informed consent to participate in the research. Non-inclusion of these groups was a matter of researcher duty of care as including these sectors of the community would have required a level of upskilling in participant engagement, which I was not able to acquire due to availability, time and budget restrictions. However, although children were not directly included, an understanding of the impacts on children was achieved indirectly through interviewing school staff, and child-care specific organisations (Bernardo's, Oranga Tamariki). School staff and agency representatives referred to issues they were observing in children and their families.

In having to enable a 'community based' approach, nine months of fieldwork were carried out, providing an opportunity for deep immersion in the reality of post-earthquake life in the Waimakariri district, based in Rangiora. Being placed in the district also provided time flexibility to consider participants' time availability instead of imposing the timing and availability of a researcher who is taking multiple brief fieldtrips to the area. However, extending fieldwork and being flexible with timing to accommodate participant's time availability also meant that many interviews were either frequently postponed or conducted in the final months of the fieldwork. This also meant that the analysis phase could not start until a later date which delayed the research process and left very little time to provide feedback to Council and residents as initially intended. Additionally, there was the element of interview transcriptions.

In addition, processing such a large body of interviews took longer than anticipated. In turn, this also affected the commencement of the analytical phase and write up of results which left little time to develop participatory analysis and implementation of the research results. However, it is also important to note that although not considered strictly as part of this Ph.D. thesis process, feedback to the Council is scheduled to take place through a one-hour presentation to Council staff on the 5th of December of 2019. This will provide a valuable opportunity to think of potential ways to articulate 'Actions' and orally present results and practical implications of this research to the Council. Finally, this instance will also present an opportunity to explore future research options that could further support the district as a part of a post-doctoral research portfolio. In conclusion, although the 'Action' element could not be included in this thesis, it is being considered as a follow-up activity to thesis submission, defence and post-doctoral research activities.

4.8. Trustworthiness and reliability

Reliability refers to the quality of the data gathered when conducting qualitative research, and a key factor of reliability in qualitative research is trustworthiness, or methodological rigor (Patton, 1999). Lincoln & Guba (1985) propose that trustworthiness can generate confidence in the research findings and make them defensible. Patton (1999) further suggests that trustworthiness can be achieved through triangulation methods which can be defined as strategies for improving the reliability (quality) of the research. To that end, Patton (1999) advances four mechanisms to ensure effective triangulation. These include methods triangulation, triangulation of sources, analyst/investigator triangulation, and theory/perspective triangulation. This research has drawn on all four mechanisms to ensure the reliability of research findings.

Methods triangulation, which refers to the combination of multiple methods of data collection (Carter et al., 2014; Patton, 1999), was applied in the research through using semi-structured interviewing, observation and gathering data through a focus group. Triangulation of sources required the collection of data from different types of people to explore multiple perspectives and ensured the reliability of the data being gathered (Carter et al., 2014; Patton, 1999). This form of triangulation (source triangulation) was developed by gathering data from participants with diverse points of view who were also situated in various sectors of the communities studied. Investigator triangulation generally involves the participation of more than one investigator in the research (Carter et al., 2014; Patton, 1999). Supervisory reviewing of the data enabled confirmation and questioning of emergent findings, while theory triangulation, the use of different theories to analyse the data (Carter et al., 2014; Patton, 1999) was evidenced in the application of the theories of Bourdieu, Foucault, and Harré' to analyses. Collectively, these various methods of triangulation ensured credibility and fittingness of the research results.

4.9. Credibility and Fittingness

Credibility in qualitative research can be interpreted as '*how vivid and faithful the description of the phenomena is*' (Beck, 1993, p. 264). Measures of credibility can be assessed by evaluating if participants see themselves reflected in the narratives gathered. In this research, both before and after the interview, participants were offered the option of receiving the transcript developed from their interview talk and invited to evaluate if it was an accurate rendition of their views. Approximately half of the interviewees accepted this option and confirmed their transcriptions were

a faithful rendition of their interview talk as well as the views they were trying to convey in their interviews.

Fittingness can be understood as measures that assess how research findings fit into external research contexts (Beck, 1993; Ryan-Nicholls et al., 2009). The fittingness of this research was assessed by presenting the evolving results in different seminars, conferences, and workshops. The initial results of the critical literature review were presented in 2017 in the context of a monthly seminar as part of a wider research programme within which this research was nested (QuakeCoRE Flagship 5 Pathways towards resilience monthly seminars). Later, results were presented as a 40 minute seminar and 1 hour collective discussion delivered at the Universidad de la República in Uruguay in 2018. The seminar was presented to a broad audience that included policymakers, academics, and planning professionals. Research results were also presented as a poster at QuakeCoRE's Annual Meetings (September 2018, September 2019) and as 3-minute thesis presentations at the Massey University Disastrous Doctorates seminars during 2018 and 2019. Finally, research results were also presented in a workshop held by the Waimakariri District Council on the 5th of December of 2019, and attended by high-level WDC officials. Presentations and research results were very well received in all forums, and prompted extensive comments in terms of potential applicability of research findings to other contexts, highlighting the fittingness of this research.

4.10. Summary

This chapter has outlined general epistemological, theoretical, methodological, and ethical underpinnings of this research. Social constructionism was presented as the overarching epistemological frame of the research which also draws on critical theoretical influences such the social theories developed by Pierre Bourdieu, Michel Foucault, and Rom Harré. This chapter also describes the methodological approach deployed which draws on Community Based Participatory Research and a mixed-methods research design which combined quantitative and qualitative data gathering and analysis methods to ensure that research objectives were achieved. The ethical implications of deploying this research design were also described and a synthesis of actions to mitigate risk of harm to participants and researcher was also provided. This chapter finalises by eliciting the way in which research methods were practically conducted in the field and later in data processing, interpretation and analysis. Further reflections on trustworthiness and reliability, as well

as credibility and fittingness were also developed to show the adequacy and potential applicability of this research.

5.1. Introduction

On the 4th of September 2010 Canterbury experienced a magnitude 7.1 earthquake; the first of what would be a series of earthquakes that generated devastating consequences across the region. Although no loss of life was recorded as a direct consequence of this earthquake, the significant damage to the built environment across urban and rural areas in Christchurch City, Selwyn District, and Waimakariri District drove local governments to declare local states of emergency following Civil Defence Emergency Management (CDEM) statutes (GNS Science, 2016; Ingham, 2010; Whitman et al., 2013; Wood et al., 2010). This chapter will describe how different capitals were drawn on and mobilised by research participants to tackle immediate response challenges such as broken service infrastructure (sanitation, water, power), and safety in the Waimakariri after the 4th of September earthquake.

To that end, this chapter draws on the Community Resilience Capital Framework presented in Chapter 2, the Greater Christchurch pre and post 2010/2011 Canterbury earthquake sequence situation presented in Chapter 3, and the methods described in Chapter 4. As a result, this chapter presents a content analysis of the interview material of the 51 participants and a separate narrative synthesis of participants' talk. Special attention has been paid to the narratives of three key informants who provided rich accounts of the immediate response in the Waimakariri; *Kururú*, *Tacuara*, and *Pitanga*. Other participants voices will also be introduced to provide additional information that allows for exploration of the ways in which agents positioned themselves (or were positioned by others) in the immediate response field, and how their positions in the field of immediate response impacted capital distribution across the community. The following section will present results from the content analysis.

5.2. People and immediate response in the 'Waimak'

As explained in Chapter 4, the 51 Waimakariri participants of this research voiced positive or negative appraisals in regards to how they perceived capitals in their lives and these appraisals were coded as capital positive and negative sub-codes. Figure 12 is the result of a query developed through the use of NVivo software where positive and negative sub-codes were cross-tabulated during the immediate response phase. The figure illustrates the total amount of positive (green) and negative (red) connotation references associated with the immediate response period for the 51 participants.

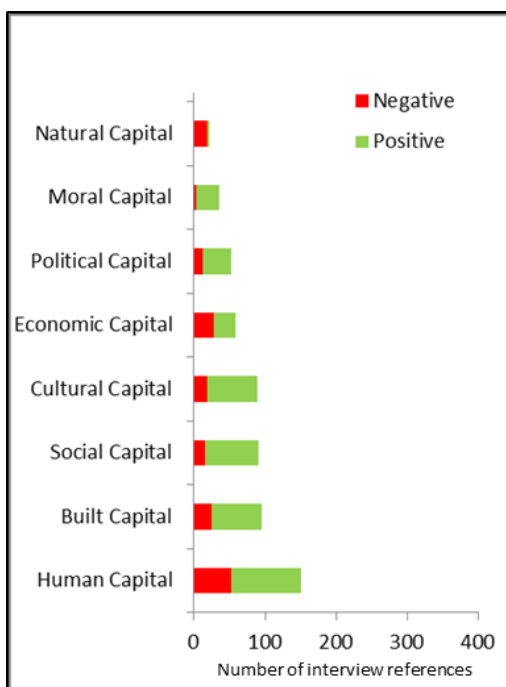


Figure 12. Graph synthesising total amount of participants talk references coded as positive or negative capital connotations across the 51 narratives associated with the immediate response stage in the Waimakariri.

Figure 12 shows a high concentration of references associated with participants' comments that have a positive connotation of human capital. Most of this coded material referred to the Waimakariri District Council's (WDC) and emergency services human resources (staff), as exemplified by this comment from *Tacuara* a WDC staff member: '*there was a real sense of doing the right thing for the community and we [are] quite connected [to the community], a lot of the staff live in the district and I do myself, so feel the sense of responsibility in their role*'. Additionally, the presence of significant built capital in this graph indicates how issues around infrastructure

dominated the response narrative. For the most part, references to built capital were made with a positive connotation and referred to the quick infrastructural response developed by service providers such as Mainpower (the main power company in Waimakariri) and WDC. As an exemplar, the following extract from *Surubí*, a staff member from Mainpower involved in immediate response activities illustrates the company's rapid response: *'we responded and we pulled everyone (Mainpower staff) in, we had some meetings and we got on with it (...) in some respects it [earthquake damage] was lesser than what we normally have with snow'*. The promptness of service providers response was also noted by *Tacuara*: *'When you look back, I'm amazed at how quickly we got services up for people'*.

Drawing on content of the 51 interviews Figure 13 presents a dendogram indicating proximity between capital nodes and the immediate response based on the number of words (and word synonyms) each code has in common with others during the immediate response phase.

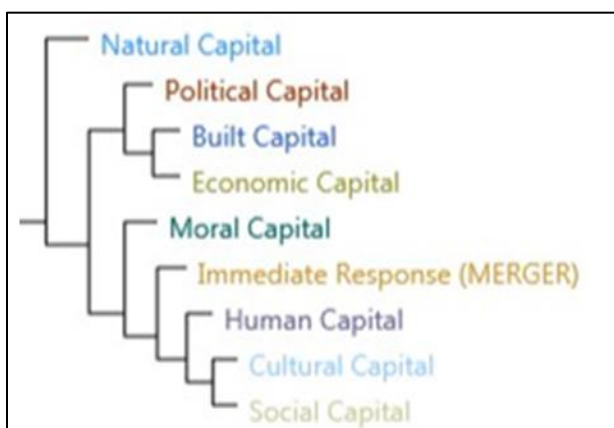


Figure 13. Immediate response and capitals cluster analysis dendogram synthesising all the 51 participants talks associated with immediate response across the Waimakariri.

This dendogram illustrates how human capital is closely related to social, cultural and moral capitals. *Tacuara's* extract about WDC staff highlights this relationship well. Council's human capital (*'staff'*) accumulated social and embodied cultural capitals through daily life and social interactions in the district (*'we [are] quite connected [to the community], a lot of the staff live in the district'*). In turn, this cultural and social capital base contributed to building a strong sense of moral responsibility (*'staff [...] feel the sense of responsibility in their role'*), thus also building moral capital from which *'staff'* drew to do *'the right thing for the community'* in terms of fixing infrastructure (built capital). Additionally, Figure 13 also shows how political, built, and economic capitals form a second cluster of capitals indicating a close relationship between them. This second cluster can also

be explained through *Tacuara's* talk where he referred to WDC funding availability to face the infrastructure repair costs: *'We informed our elected members, we are spending outside our delegations (to get water and sanitation running again), and we got that formalised as quickly as we could but we didn't worry about having a delegation of so many hundred thousand dollars I'm allowed to spend'*.

Complementing Figure 13, Figure 14 illustrates the result of a network analysis obtained by cross-tabulating capital codes across all 51 participants talk associated with the immediate response phase in the Waimakariri. The black dots (nodes) in the network image represent capitals, and the lines (ties) connecting the dots represent relations between the capitals (participants' talk where capitals are mentioned in relation to each other and are thus coded as two or more overlapping capital codes). The colors and width of the lines indicate strength (frequency) of capital relations where thick red lines show the strongest ties, yellow and middle thickness show average strength, and green thin lines indicate weak ties.

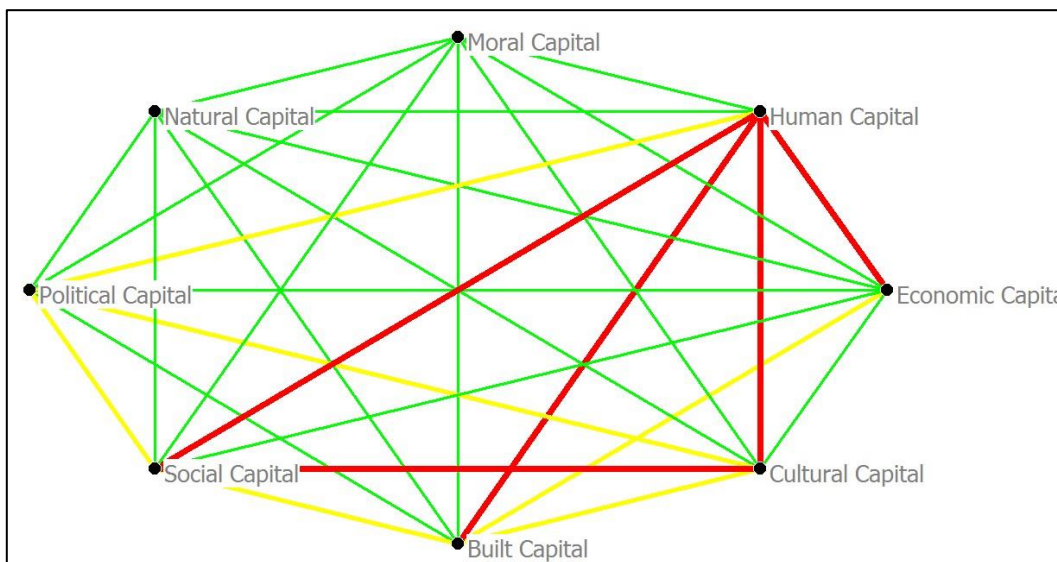


Figure 14. Capitals network image synthesising all capital interrelations coded across all the 51 participants talks associated with immediate response in the Waimakariri.

This figure (Figure 14) complements Figure 13 by illustrating that although there are strong relationships between all capitals which makes it hard to separate or consider each capital in isolation. Figure 14 thus highlights the complexity and hyper-connected character of the different capitals.

Finally, Figure 15 presents a word cloud (word frequency) synthesising the content of the total amount of immediate response related capital codes found across the 51 participants.



Figure 15. Word cloud synthesising word frequency across all 51 participants' talks associated with the immediate response process in the Waimakariri.

Figure 15 helps explain why human, built, social, and cultural capitals all appear to be dominant in the narratives, as Figure 12 shows, and why they are so closely related, as Figure 13 and Figure 14 illustrate. The first thing that stands out is how frequently the term 'people' appears in the interviews – placing it at the centre of the word cloud. Additionally, terms such as 'earthquake', 'community', 'Council', 'things', 'works', 'Kaiapoi', and 'water' also appear with frequency indicating that 'people', although at the centre, were surrounded by issues associated with cultural, social, built, political, and economic capitals.

In summary, people appear at the centre of narratives gathered in relation to the Waimakariri's immediate response. However, to be able to face the challenges associated with a changed environment, damaged houses, and damaged infrastructure, people in the Waimakariri had to mobilise and draw on social, cultural, moral, political, economic, and built capitals which bound them together as a collective, and transformed their sense of identity in the process. These capital interrelations and mobilisations will be described in the following sections through a more in-depth analysis of participant's narratives, starting with the story of *Kururú*, a senior police officer from the Waimakariri involved in the response.

5.3. Kururú's narrative

Very shortly after the earthquake, and following CDEM provisions, a Local State of Emergency was declared in the District. Police and other emergency services became subject to the direction and coordination of local CDEM authorities who officially controlled the immediate response. *Kururú*, a Police officer from the Waimakariri, was actively involved in the response phase and he provided a police perspective on how the response evolved.

'(...) staff that worked here, or lived in North Canterbury were signaled to come here [Rangiora Station], and a lot of them did, everyone [police officers] volunteered, that part of the response was phenomenal, we had plenty of staff coming forward saying "What can I do? Where can I go?" so from that point of view quite heartening. Some of them we had to turn around and say "go home, because your house is broken", which was even worst in the February event, because a lot of our staff live in Christchurch (...) Our initial response was just to keep that safety thing going. Disorder and any of those things is our priority, so we go back to our fundamentals (...) Yet, come civil defence emergency [state of emergency] and we get these roles, and tasking, that I think we have slightly wrong, because we should be leading this, but I'm not in charge. We should be the lead agency, and I've always thought this, we are a command structure, when the chips are down we fall back to a military mode "do this, or someone gets hurt", we are good at that, we are famous for it, except when a civil defence emergency. Then the local accountant will be the leader, and it's not his fault, no matter how much you train them, they don't take it seriously, it's not real until its real and then the organisation that is trained and disciplined to do this as fire, ambulance, or emergency services, we get a backseat role. I don't think that's right (...) and we got some of these bizarre tasks from the civil defence organism, "they want you to do this", "well, tell them we are not". Or, at one stage, I got a large number of tasks to do things and I had to say "ok, I'm really committed to doing three of them, the other eight I just can't do it, I don't have the resources to do them, nor do I have the legal mandate". There's an inherent danger with the current Civil Defence setup, that it's not done by professionals, there are some, and they are getting better' (Kururú).

5.3.1. Waimakariri Police and metaphysical capitals in the field of immediate response

Cultural, social, symbolic, political, and moral capitals all converge in *Kururú's* talk, which illustrated how this participant operationalised these metaphysical capitals during the immediate aftermath of the 4th of September earthquake. There are two key terms associated with cultural capital that should be considered as the starting point for analysis: *'training'* and *'discipline'*.

'Discipline' can impose a habitus based on hierarchy, duty, and obedience on individuals through the use of carefully crafted 'training' (Foucault, 1995). It is precisely because police officers' cultural capital is shaped by discipline and training that they are able to make decisions quickly and execute them efficiently through a hierarchical chain of command during emergency situations, as *Kururú* comments: *'(...) when the chips are down we fall back to a military mode "do this, or someone gets hurt", we are good at that, we are famous for it (...)'*. Further in the conversation, *Kururú* reiterated this emphasis and went on to link cultural, social, and symbolic forms of capital. He did so by reinforcing the perceived high value of this discipline-based type of cultural capital by hierarchically placing those with immediate response experience as a group of professionals ('we'), whilst simultaneously disregarding other actors who draw on different types of cultural capital and sources of legitimacy ('they') to occupy leadership positions in the emergency response field. He further stated:

'I've got a hundred and ten staff who are all professional at emergency response, when we get to a civil defence emergency and we put a declaration, we now have to sit to the side and work for the amateurs. So, people down here who have full time jobs, and this isn't a criticism to them, the local accountant, the human resource manager, and such like, and now they become the controllers for a civil defence emergency and we work for them! I struggle with that. Because we are professionals and we have a structure and we do emergency response every day, except when a civil defence emergency is declared' (Kururú).

Kururú defines 'professionals' as emergency managers who have gone through robust disciplinary training programs that shape cultural capital, a military-like command and control practice ('we'). Responders working in other professions, such as accountants, and/or human resources managers, are not identified or positioned in the immediate response field as professional responders but instead 'othered' by being labeled with their regular job titles (*'the local accountant, the human*

resource manager') and their disaster response expertise is thus dismissed. However, the dominant modern concept of 'work' responds to hierarchical disciplinary practices that aim to establish an efficient habitus that individualises workers and promotes specialisation (Hodgson, 2002; Soss et al., 2011; Weber, 1978; Villadsen, 2007). Additionally, although there are well documented cases of non-hierarchical working schemes, such as the anarchist feminist collectives described by Iannello (2013), other emerging corporate models of work associated with the creative and information technology industries which claim to be less hierarchical, such as holocratic management and co-working spaces, have also been shown to often be underpinned by formal or informal disciplinary hierarchical practices (Brown et al., 2009; Denning, 2013; Diefenbach & Sillince, 2011; Gill, 2002; Lee & Edmonson, 2017; Peuter et al., 2017; Robertson, 2015). Therefore, the majority of the work force may be considered equally disciplined and, like the police force, function within formal or informal hierarchical structures.

As both professional and 'non-professional' responders operate within hierarchical fields and are subject to discipline, an argument can be advanced that they are equally part of the disciplinary apparatus found across institutions, such as armies, churches, universities, political parties, hospitals, prisons, schools, and factories (Deleuze, 1988; Foucault, 1995; O'Neill, 1986; Weber, 1978). Yet *Kururú's* talk asserts that police and security forces are better suited to lead immediate responses. The rationale for this belief may lie in the phrase: '(...) *we do emergency response every day (...)*'. The key issue may not lie solely within the boundaries of training (understood as exercises and reshaping of habitus to discipline bodies) and obedience, as much as it may also have to do with daily practical experiences. Habitus is not only shaped by training, the body and mind will also be shaped by daily life and exposure to certain activities on a daily basis (Bourdieu, 1990, 2012). Being exposed to emergency situations, implementing the training, and embodying the hierarchical chain of command on a daily basis will shape a habitus and mindset that maximises the efficiency of the response, thus contributing to the creation of an exclusive group (bonding social capital); a class of highly efficient response 'professionals'.

In turn, the highly specialised cultural capital that shapes the bonding social capital within this 'class of professionals' can also create a strong sense of entitlement that serves as the symbolic capital base for this group to claim an exclusive legitimacy to monopolise access to political capital in emergency response situations. This sense of entitlement and legitimacy can also lead to disregard for the requests by other 'non-professional' emergency responders who are legally mandated to

lead response, but who do not share the 'professional' responders' cultural and social capital. Moreover, critical appraisal of 'non-professionals' requests is also evident in *Kururú's* talk as follows: '*and we got some of these bizarre tasks from the civil defence organism, "they want you to do this", "well, tell them we are not"*'.

This last statement also highlights the relation between obedience and cultural, social, and symbolic capitals. Professional hierarchies and chains of command are characteristic of the highly disciplined habitus found in the New Zealand Police Force. However, *Kururú's* statement suggests that an individual's and/or organisation's obedience towards others who hold access to political capital, but that do not reflect a preferred and/or familiar accepted habitus, can undermine the shared social capital of the response forces and disrupt local government and community's leadership. It can be inferred from this statement that *Kururú's* perspective in regards to the perceived lack of professionalism in conducting disaster response leadership may be representative of wider perceptions amongst the police and other formal emergency management responders (e.g., Fire services NZ, Defence forces). If so, in perceiving themselves as the 'legitimate' yet displaced response leaders, these agents feel entitled to disregard the requests of people who have the legal mandate but not the social legitimacy as perceived by the police force to generate professional compliance from emergency services.

There are also strong moral capital underpinnings to the cultural, social, symbolic, and political capitals. *Kururú's* talk suggests that the embodied hierarchical chains of commands are operationalised in relation to moral capital. Firstly, there is a reference to police staff 'volunteering' which appears to be framed by *Kururú* in a positive light as: '*phenomenal*' and/or '*heartening*'. One interpretation of *Kururú's* narrative is that this 'positive' behavior indicates that police staff 'volunteers' share a sense of moral responsibility towards the broader community that takes precedence over individual officers' personal needs. Local police officers and their families were just as affected as the wider community in terms of damaged houses; yet, many prioritised their professional role despite their personal circumstances which for some entailed a heavy personal cost ('*Some of them we had to turn around and say 'go home, because your house is broken*'). However, because that initial sentence in *Kururú's* narrative states that: '*staff that worked here, or lived in North Canterbury were signaled to come here (Rangiora Station)*', another interpretation can be made. Although the word 'volunteer' was used, there was an underlying '*signal*' from higher ranks in the chain of command requesting lower ranks to comply by reporting to the Rangiora Police

station. An alternative interpretation of this narrative may be that the *'heartening'* behavior can be considered as not solely altruistic, but as a strong manifestation of dutiful obedience, or perhaps a form of dutiful altruism. This conceptualisation of altruism potentially encompasses the notion of a trained, disciplined body that is taught to prioritise the chain of command above personal interests under the assumption that the chain of command always has community interests at its apex.

In addition, in reference to moral capital, *Kururú* refers to a series of organisational moral principles that guided emergency responders' actions in the Waimakariri during the immediate aftermath of the September 4th earthquake. According to *Kururú*, police staff went back to what he denotes as *'fundamental'* police roles including maintaining *'safety'*, and preventing *'disorder'*. It can be argued that at the request of the chain of command, all the resources the Police had at hand were also mobilised in support of the aforementioned roles and related responsibilities. These prescribed duties (maintaining safety and preventing disorder) which shape police actions during emergency response situations can be interpreted literally. The New Zealand Police embodies state authority and coercive powers that may be executed to ensure law is enforced and that the public and their property are kept safe from physical harm. Equally the Police are Crown agents that act to prevent riots or any other form of individual or collective behavior that threatens physical and social order. However, safety and order can also be understood as the moral underpinnings of a broader disciplinary apparatus, a large network of relations between physical and metaphysical elements through which power circulates and is exercised in society (Deleuz, 1998; Foucault, 1995, 2007). The conceptualisation of Police as a technology of power suggests a particular type of order where the State represents a pastoral and paternalistic authority figure that enforces hegemonic social norms and order through vertical power mechanisms. Such power mechanisms individualise, objectivise, and homogenise communities (Foucault, 1995, 2007), and transfer agency away from communities to the State by virtue of tacit, and voluntary social contracts (Hobbes, 2009). Although this type of order can generate a sense of safety for residents, whose habitual practices are aligned with the dominant social order, it can also inspire fear in residents who are *'othered'* by the dominant social order, as the talk of *Aruera*, a Ngāi Tūāhuriri kaumātua (elder) involved in the response indicates:

'(...) they [whānau] are fearful, and they see a branded car coming along and they may not see who the car is, but they might be fearful that it's some establishment (...) you get the likes of CYF, Children and Families Act, our people hate them because they take the kids away. If

they suspect they are brutally treated, not looked after, or neglected they'll take them. Our people hate them, they are fearful of them. And that was the other reason why, when I'm out there with my little staff member, or my sister they [whānau] are fearful that they [establishment agencies] might be coming for the kids' (Aruera).

Interpretation of Aruera's talk highlights a hierarchical distinction between the 'establishment' ('them') and 'whānau' ('our people'). 'Establishment' agencies are perceived to hold sufficient power to forcefully withdraw children from parents' custody solely based on suspicion that parent-child cultural practices may not conform with dominant social norms and order. This perceived accumulation of power in the hands of 'establishment' agencies, such as CYF's (now Oranga Tamariki) or Police, can produce significant fear in some whānau. In the context of heterogeneous communities residing in the Waimakariri, it can be argued that a centralised, hierarchical command and control approach to response, although efficient from a dominant social order perspective, can simultaneously generate fear in some residents. Additionally, it can also pose significant risks to social life because the accumulation of power by central authorities can produce fear in those who do not share the dominant habitus (Marchezini, 2015). Such approaches also pose risks to indigenous agency and the enactment of both cultural values and traditional practices in response to disasters, especially in a country with a strong indigenous cultural presence such as Aotearoa-New Zealand (Kenney & Phibbs, 2015; Lambert, 2014; Phibbs et al., 2015). Kururú also reflected on this issue:

'(...) there's been an increased awareness and acknowledgement of the important role of Iwi in the communities, one that was never like that. So, the importance of Tuahiwi [marae¹³] and the marae in Kaikōura, they were huge parts of the story, especially in Kaikōura. Here in the Waimak in terms of relations between CDEM and the local Rūnanga¹⁴ I don't think there was a lot of interactions at the time though, but if an event were to happen today, the Tuahiwi Marae would be a big part because it's designed in a way that it can very easily become a welfare centre (...)' (Kururú).

Kururú's story highlights the lack of interactions between CDEM structures and 'the local Rūnanga' prior to and in the immediate aftermath of the September earthquake. However, Kururú's talk also

¹³ '(...) the open area in front of the whareniui [meeting house], where formal greetings and discussions take place. Often also used to include the complex of buildings around the marae' (Source: <https://maoridictionary.co.nz/search?idiom=&phrase=&proverb=&loan=&histLoanWords=&keywords=marae>).

¹⁴ Tribal council (Source: <https://ngaitahu.iwi.nz/te-runanga-o-ngai-tahu/papatipu-runanga/>).

illustrates how CDEM's improved understanding of the spatial design of the Tuahiwi Marae and the wider response role that Iwi can enact in the community, which was demonstrated following the earthquakes, has created opportunities for joint CDEM-Rūnanga interactions in the Waimakariri in future. These interactions encompass the situating of welfare centres on marae during emergency situations. *Aruera's* reference to the benefits of the spatial design of marae and examples of how marae spaces were used during different emergency situations constitute an exemplar. She stated:

'And I was there in parliament one day when the Civil Defence were presenting to us, tribes of the country and I had said to this man, "your best place for Civil Defence is the marae, and I don't know why the hell you people aren't using the marae, you aren't paying the marae for emergency services, because your school halls, your church halls, your sports clubs have no cooking facilities, have no bedding facilities", and here's the classic example of Tuahiwi [marae], showers, meals, mattresses, they [manuhiri¹⁵] bring their own blankets or there will be blankets donated to the marae, and bedding. Every marae in the country has that ability to accommodate people in emergencies but people haven't learnt yet. When Cyclone Bola hit the east coast of the North Island, all those marae automatically opened up, beds made, their freezers filled with free kai, and it's easily done (...) And that Marae [Tuahiwi] was flat out through that period, cooking, looking after people, cooking the kai, and there was kai coming in and then being transported to Christchurch' (Aruera).

Interpretation of *Aruera's* talk reiterates a hierarchical positioning of 'establishment' agencies, such as CDEM authorities, embodied in 'this man' through terms such as 'you', and 'your' followed by Western European institutions and physical places such as 'school halls', 'church halls', and 'sports clubs', in opposition to 'us, tribes of the country' and Māori institutions such as the 'marae'. Additionally, her talk can be interpreted as highlighting how building facilities designed around the marae, such as the wharekai (dining hall) and the wharenuī (meeting house), can provide essential services such as meals, bedding, showers, and toilets in emergency situations. This indicates how a marae can 'easily become a welfare centre' as *Kururú* states. The case of Cyclone Bola in 1988 which affected Hawke's Bay, Gisborne, and the East Cape, and the case of the Tuahiwi marae during the aftermath of the September 2010 earthquake represent historical and contemporary exemplars

¹⁵ Visitors, guests (Source: <https://maoridictionary.co.nz/search?idiom=&phrase=&proverb=&loan=&histLoanWords=&keywords=manuhiri>).

provided by *Aruera* of emergency situations where the aforementioned services were provided by marae to those people who were affected.

Synthetically, cultural, social, symbolic, political, and moral forms of capital underpin leadership in *Kururú's* emergency response narrative. Insights from this particular perspective indicate that accruing specific cultural capital in the form of embodied emergency response training, hierarchies, discipline and daily experience can generate strong bonding social capital that shapes an exclusive group or class of responders. In turn, this group or class, driven by a moral sense of dutiful-altruism can draw on this specific type of professional emergency responder cultural capital to create a strong sense of symbolic entitlement to accrue political capital and monopolise emergency response leadership and activities. More broadly, this accrual of cultural, symbolic, political, moral, and bonding social capitals can also lead to the displacement and/or non-compliance with the requests of other emergency responders (civil 'non-professional' responders). The latter are mandated by law to lead but are perceived to lack experience as well as the professional and social legitimacy to do so by professional emergency responders. Finally, in the context of diverse communities, homogeneous, hierarchical command and control approaches to response can ensure safety from the perspective of people who adhere to the dominant social order, but can also silence the enactment of cultural values and practices that lie beyond the dominant social order, ultimately undermining community well-being. The next section illustrates how capitals were mobilised and drawn on by 'non-professional' responders who acted on behalf of local institutions.

5.4. *Tacuara's* narrative

Immediately after the earthquake, WDC began coordinating the response by initiating recovery protocols and establishing an Emergency Operations Centre, a Welfare Centre, and also mechanisms for assessing and repairing infrastructure damage associated with lifelines and essential services water, sanitation, and power. *Tacuara*, a WDC staff member, was deeply involved with the immediate response to address infrastructure issues. His talk reveals how the challenges of infrastructural repair were addressed:

'Our key priority was water really, initially, trying to get our water supply on, as quickly as we could, where we could, and we did pretty well, I think, we managed (...) But then, we also had to try and give people, try to, decide what we were going to do about the sewer, because a lot of the sewers were completely stuffed. So, we sort of took a view that we need to provide the people with a service, the infrastructure is a bit of secondary thing (...) The other thing we

did was we stepped inside people's property boundaries. Because we own the infrastructure outside, and legally the water supply and or sewer, but it's their responsibility to get it to the house. But we realised pretty quickly that that was an unreasonable thing to expect people to do (...) we basically made sure we got water to people's houses (...) In terms of sewer, we took a few approaches, we started very, very quickly, we just pumped from our pump stations in our main hose into the river. So, we made a call, a conscious decision that human public health was more important than worrying about whether we were discharging untreated sewerage into the Kaiapoi river or into the coastal area in Kairaki (...) people that were working here [Council] had a genuine feeling that they were valued by the organisation and by the community, felt part of the community. And were driven and motivated to make personal sacrifices and work extremely long hours with no expectation of being paid any extra or anything, doing whatever had to be done. And, yeah sure, not worrying about whether this or that was Council responsibility; we were the organisation that had the capacities and capabilities to do these things, so we should get on and do them (...) there was a real sense of doing the right thing for the community and we quite connected, a lot of the staff live in the district and I do myself, so feel the sense of responsibility in their role (...) we sort of thought, "what's going to work for individuals in their property" and we actually managed. When you look back, I'm amazed at how quickly we got services up for people (...)' (Tacuara).

5.4.1. WDC's capital accumulation and moral sense of responsibility

Analysis of *Tacuara's* story begins with the key sentence: '*we were the organisation that had the capacities and capabilities to do these things [repair lifeline utilities], so we should get on and do them*'. Interpretation of this particular phrase helps explain how WDC's access to capital accumulation ('capacities and capabilities') created the necessary symbolic entitlement and legitimacy to situate itself in a central position in the immediate response field. Throughout his narrative, *Tacuara* refers to the different resources that composed WDC's capital accrual during the emergency response:

'the Council [was] managing to keep up with things both financially largely driven by the growth (...) We informed our elected members we are spending outside our delegations, and we got that formalised as quickly as we can but we didn't worry about having a delegation of so many hundred thousand dollars I'm allowed to spend (...) we got up on an helicopter after it got light and did a quick tour on the eastern part of the district (...)[we had] recently built

a big sewerage upgrade including an ocean outfall, we had a new water supply construction underway for Rangiora (...) we secured materials early, I mean, we got a kilometer of pipe that had been sitting in the country available (...) we had good contact with suppliers (...) we had good connections to some of the local contractors (...) and also, we [had lots of communication], within the council, with our elected members, with other authorities, with the community (...) we've got more engineering staff, engineers, than you would expect a council our size to have' (Tacuara).

According to Tacuara's talk, Council had access to significant economic capital which enabled it to face the costs of the initial repairs needed to keep services (mainly water and sewerage) running for the community: *'the Council [was] managing to keep up with things both financially largely driven by the growth [of the district]'*. The local Council also had access to significant built capital such as *'a kilometer of pipe'*, a *'helicopter'*, and upgraded infrastructure such as *'sewerage'*, and *'ocean outfall'*. In addition, local Council accumulated pre-existing strong social capital with suppliers, contractors, community, elected members of the Council, and Council staff, as the following remarks from Tacuara's talk indicate: *'we had good contact with supplier (...) some of the local contractors (...) we [had lots of communication], within the council'*. And finally, Council also had direct access to a large amount of a particular type of especially valuable human capital for such a situation, namely engineers: *'we've got more engineering staff, engineers, than you would expect a council our size to have'*. Having access to such capital accumulation (economic, social, built, and human) was what endowed Council staff with the symbolic entitlement to legitimately wield political capital, beyond any legal mandate, and take a central position in the immediate response field: *'(...) not worrying about whether this or that was Council responsibility, we were the organisation that had the capacities and capabilities to do these things, so we should get on and do them'*.

Going back to the initial extract, Tacuara's talk also showcases references that could be interpreted as cultural and moral capital elements from which WDC drew support to mobilise the accumulated economic, built, social, and human capitals across the field of immediate response. Tacuara states: *'people that were working here [Council] had a genuine feeling that they were valued by the organisation and by the community, felt part of the community (...) a lot of the staff live in the district and I do myself, so feel the sense of responsibility in their role'*. Living in the community creates a shared habitus (Bourdieu, 1990, 2012), which in turn makes Council staff feel like they are part of the community. However, it is also important to note that although this sense of belonging to the

community is made explicit in *Tacuara's* talk, *Tacuara* establishes a distance between Council and community in framing Council as 'us', and 'we', and community as 'they', 'their'. This difference between 'them' (community) and 'us' (Council staff) may be marked precisely by the distinction between those within the community that have access to significant capital accumulation through the embodiment and enactment ('*we were the organisation*') of capital accruing organisations such as the WDC ('*we were the organisation that had the capacities and capabilities*') and those who do not ('*they*'). It is also important to state that in establishing this differentiation between 'them' and 'us' *Tacuara* does not appear to place himself outside of the community, but instead, does so hierarchically within it. It can therefore be interpreted that not all members of the community are equal and that these naturalised hierarchical differences are shaped in part by access to capital accumulation.

Tacuara's hierarchical positioning within the community, based on access to Council's capital accumulation, is precisely what endowed him (and possibly other Council staff: '*people that were working here*') with a deep sense of pastoral moral responsibility towards less privileged members of the community: '*[People working in the Council] were driven and motivated to make personal sacrifices and work extremely long hours with no expectation of being paid any extra or anything, doing whatever had to be done (...) there was a real sense of doing the right thing for the community*'. This sense of pastoral moral responsibility to the community is also made evident in the way *Tacuara* frames 'people' as the main priority through-out his immediate response narrative. As an example of this, *Tacuara* describes two elements that were established as priorities during the immediate response, water and sewerage. One possible way to frame these priorities is from an infrastructural perspective that situates built capital, namely the pipes and pumps, at the centre of the Council's response efforts. However, while constantly referring to water and sewer services as priorities *Tacuara's* talk can be interpreted as shifting the focus from pipes to people. This is evidenced in the four following phrases from his interview talk: '*human public health was more important*'; '*we need to provide the people with a service, the infrastructure is a bit of secondary thing*'; '*we sort of thought, what's going to work for individuals in their property*'; and '*we got services up for people*'. A similar shift in focus is evident when *Tacuara* describes how Council overlooked the legal boundaries of their responsibilities regarding utilities to ensure that residents had access to water provision inside their properties. His talk suggests a prioritising of people above legal mandates: '*we own the infrastructure outside, and legally the water supply and or sewer, but it's their [residents]*

responsibility to get it to the house. But we realised pretty quickly that that was an unreasonable thing to expect people to do (...) we basically made sure we got water to people's houses'.

Analysis of *Tacuara's* narrative indicates that this participant felt a part of the community based on shared embodied cultural capital developed through daily life in the community. However, in having access to the WDC's significant accumulation of economic, built, social, and human capitals, *Tacuara* positions himself and other Council staff in hierarchical relationships with the rest of the community, who are located in subordinate positions within the response field. Yet, Council's capital accumulation and hierarchical position within the field in comparison with the community's situation appears to have also generated a strong sense of pastoral moral responsibility towards the community on the part of *Tacuara* and other Council staff who embodied this organisation's values. Placing community as the moral centre of the Council's response enabled Council agents to effectively develop community-based infrastructural emergency response actions and promptly restore lifeline utilities in the community. However, there were limitations to this sense of pastoral (moral) responsibility, and these limitations are explored in the following section.

5.4.2. Prioritisation of house-school-work-based 'normality', and the marginalisation of different social practices and the natural environment in the field of immediate response

Tacuara places people at the centre and as recipients of his pastoral care derived from his sense of the WDC's community-based moral responsibility. It is therefore important to understand how *Tacuara* conceptualises 'people', a concept that lies at the centre of the WDC's community-based response. *Tacuara's* interview talk, through incorporating the notion of habitus into his framings of what constitutes a community, suggests that both he and the WDC consider people as being more than their biological needs ('water', 'sewer', 'public health'). As an exemplar, he states that: *'a lot of the stuff that we (Council) did on the early days was to make sure that people could stay in their house, you know, get back to school, get back to work, have some sort of normality'*. *Tacuara* refers to 'normality' in terms of 'house', 'school', and 'work' thus describing three key social institutions associated with a 'normal' disciplinary habitus deeply associated with productivity (Foucault, 1995, 2007), which was established as a response priority. Further in the conversation, *Tacuara* also refers to thinking of response efforts from the point of view of the *'individual in his property'* thus adding *'individual'* and *'property'* as two additional elements that were prioritised during immediate response.

In describing these social institutions (house, work, school, property, individuals) as 'normal' and prioritising this disciplinary '*normality*' during response, *Tacuara* might be displacing aspects of the community that do not fit into these disciplinary productive 'normal' standards. To further illustrate this, according to the 2013 census 20.7% of the population in Waimakariri did not own the property they live in nor do they hold it in a family trust, and the unemployment rate in the district was reported as 3.7%, with Māori being disproportionately represented with a 7.6% unemployment rate. People outside of the habitual productive 'norm', as described by *Tacuara*, might have been left out or marginalised from the Council's infrastructural response. *Pitanga*, a resident of the Kairaki Beach Motorcamp were residents do not fit these standards of productive '*normality*' because many are retired, live in motorhomes, and follow a 'boating' and 'fishing' lifestyle reinforces the argument as follows: '(...) they [WDC] had a lot on their plate too, there was a lot of destruction and we were just a smaller little corner. So, I don't think we heard from the Council the first two weeks'.

A further example of marginalisation can be found in the way natural capital elements, such as animals, plants, and microbiological life forms inhabiting the Kaiapoi River and Kairaki coastline, were exposed to high levels of risk of contamination and harm due to exposure to untreated sewerage. Such exposure resulted from the prioritisation of a disciplinary and productive habitus over other life forms. *Tacuara's* talk provides an exemplar: '*we just pumped from our pump stations in our main hose into the river. So, we made a call, a conscious decision that human public health was more important than worrying about whether we were discharging untreated sewerage into the Kaiapoi river or into the coastal area in Kairaki*'. In the context of the immediate response to the earthquakes, when it came to decisions about whose life was more important, *Tacuara* suggests that human life associated with a dominant 'normal' disciplinary productive habitus was the priority simultaneously marginalising other animals and plants that are outside of the boundaries of the dominant 'normal' habitus, such as the Kaiapoi River and the Kairaki coastline. Additionally, this decision also marginalised the lifestyle of the community in the Kairaki Beach Motorcamp which is strongly associated with fishing salmon and white baiting in particular, because fishing practices had to stop due to the sewage contaminated waterways. Warnings to stop fishing in the Waimakariri River were issued in the press to this effect by the Waimakariri Civil Defence on the 14th of September and by Canterbury District Health Board on the 16th of September.

By embodying the WDC as an organisation, *Tacuara* had access to significant amounts of capital, and drew from pastoral and moral capitals to mobilise other capitals (built, economic, social, human,

cultural, political, and symbolic capitals) during the response. However, WDC framing of 'people' as expressed by *Tacuara* was deeply influenced by a construction of disciplinary and productive 'normality' underpinned by social institutions such as work, school, house, and property. As a result, different forms of life, such as the animals and plants that lived in the Kaiapoi River and Kairaki coast, and some habitual practices which lay outside of the boundaries of the dominant 'normality' as described by *Tacuara*, such as renting property, living in a motorhome, and fishing lifestyles found in the Kairaki Beach Motorcamp, were marginalised from the field of immediate response. In the following sections, analysis will focus on the margins of the field of immediate response by describing the characteristics of the Kairaki Beach Motorcamp community and how the community mobilised capitals in response to the earthquake.

5.5. Pitanga's narrative

The Kairaki Beach Motorcamp is a small motorcamp with a strong sense of community built through many years of shared life experiences amongst its community members. The Motorcamp is isolated from Rangiora, and had to tackle the initial earthquake challenges such as tsunami risk, damaged infrastructure, and liquefaction on its own because WDC's prioritised Kaiapoi as the focus of the Local Council's response efforts. The story of the Motorcamp was narrated by *Pitanga*, a community leader from the Kairaki Beach Motorcamp, as follows:

'We [The management team being Pitanga and his partner] became aware that the earthquake could have produced a wave that may come over, and we are in a low area here, so we had to drag everyone up here which meant going door to door to all the campers and getting them up here. We were fortunate we had two motels where we could put the older people in because it was a frosty morning. We had no power, that had all gone, but at least they were in a bit of shelter (...) (When) the sun came out, and we started to see what was needed and what wasn't and then realised that it was a major situation (...) we had to stay in here for three days after the earthquake sorting stuff out, but when we had things organised and managed to get out I went out for a drive to pick up some five thousand liter water tanks that a friend of mine who was working on a farm had found for us (...) people then had water, they had cooking, and the toilets, so we had the basics. Public toilets up here were very close to the sewer line, so we had our toilets here and our sewers broken, so we dug it up and located where the damage was, and we were able to tell the Council when we managed to

get through to them that we could get the public toilets running so people could have toilets down here, and they did, they came down and did that' (Pitanga).

5.5.1. Kairaki Beach Motorcamp's autonomous capital mobilisation in the immediate response field

Pitanga's narrative describes how immediately after the earthquake, issues arose around a possible tsunami threat and other issues followed associated with disrupted services (e.g., water, power, sanitation). The Motorcamp's responses to these issues, as described by *Pitanga*, demonstrate how human, built, social, symbolic, moral, and economic capitals were drawn on and mobilised across the response field to evacuate campers, clear the liquefaction debris, and provide facilities such as cooking, water, and toilets during the first weeks after the earthquakes. *Pitanga's* first concern was the possibility of a tsunami and a perceived need to move Motorcamp residents to higher ground.

Pitanga's tsunami risk concern inferred familiarity with earthquake and tsunami risks in the region and the need for an evacuation response. However, the participant's knowledge of the potential tsunami risk was informed by others in the community. *Pitanga* states '*the white baiters were on the river by then [after the earthquake] and one of them came back and mentioned that the water had dropped so we really thought a big wave could come*'. In order to be able to respond to the potential threat, *Pitanga* had to draw on the cultural capital of others, namely the white-baiters as well as mobilise personal cultural, symbolic, built, and social capitals. *Pitanga* relied on the cultural capital (traditional knowledge) accumulated by white baiters that enabled them to identify anomalies in the times and levels of the tide. Informed by the white-baiters' cultural capital, *Pitanga* drew from his own cultural capital (knowledge of the land he occupies) to identify the highest ground at the Motorcamp. He then drew from his own symbolic capital as Motorcamp manager to both inform the campers about the risk and communicate the need to move to safer ground with the necessary legitimacy to exercise force ('*drag*') them to safety. The term '*drag*' was not described but it can be inferred that *Pitanga* might have found resistance amongst campers to move to higher ground. The '*drag*' might equally have referred to convincing campers through the use of a legitimate discourse built upon traditional knowledge rather than actually using physical violence to force individuals to move to safety. Finally, *Pitanga* also mobilised available social and built capitals by linking with people he knew who had access to a bus, to access a form of transport in order to escape the impacts of a potential Tsunami. Once he had accessed transport he offered to

drive some campers to safety as far away from the coast as possible, and he stated *'We had a bus, people staying in a bus, and they offered to put people on their bus and drive them inland for safety, so they drove up to Rangiora'*. Following this initial evacuation response, and early in the morning, Pitanga established priorities to ensure provision of necessary services: power, cooking facilities, sanitation, showers, and drinking water as well as the response to the liquefaction.

Gas-based cooking facilities, were organised in response to a perceived lack of power. *Pitanga* also provided information about showers, drinking water, solutions to the damaged sanitation infrastructure, and liquefaction. *Pitanga's* talk of the showers indicates the importance of personal hygiene as a priority during the response, and indicates his competence in mobilising social capital to secure a resource e.g., *'we went through our local Labour party's office'*. *Pitanga's* ability to draw on social capital was also made evident in the reference to accessing large water tanks, which he did through: *'a friend who was working on a farm'*. In reference to resolving sewer issues, although *Pitanga* may have been ready to move forward independently of the Council to repair their sewage infrastructure, after initial post-earthquake contact, the Council sent a plumbing crew to 'patch' the external infrastructure. Additionally, as also stated by *Tacuara*, the plumbing team was prepared to move beyond Council legal responsibilities and fix the water and sewerage pipes inside property boundaries. This action indicates how pastoral care values that were guiding the actions of the Council, such as placing community and people at the centre of the organisation's response, might have been shared by members of the WDC and contractors hired by this organisation. This viewpoint is reinforced by *Tacuara*: *'I think that everyone at every tier of this organisation shows leadership and feels valued, feels a sense of responsibility [to the community]'*.

Finally, analysis of *Pitanga's* talk can also help explain ways in which human, moral, social, built, and economic capitals were drawn on to facilitate clearing of liquefaction debris:

'Because of the community we have here we actually got things tidied up before the army showed up to help us clean up! I have a memory of being up in the motel getting some water and there was this toot in the background, and it turned out to be a big digger going past us on the back of a truck (...) and the boss told him [the digger operator who was also staying at the Motorcamp] we could use the digger, just fill it up with diesel and use it. So, I went and saw the Smith brothers, they are a hire company here and hired a couple of trucks and we cleared all the liquefaction, that took us two solid weeks (...) I managed to hire two little

trucks, I think three meter trucks, and some of the guys who were staying here for the fishing were drivers, so they said they could drive the trucks. You have to understand that by then we had been here for over twenty eight years, so we had relationships with a lot of these people, I'd seen their kids grow up and things like that, they knew us, and we knew them. When you needed help they were there, they were there' (Pitanga).

Analysis of *Pitanga's* talk provides a description of how the owner of the digger drew from his own moral capital to lend the piece of machinery to the Motorcamp at his own economic cost (*'the boss told him we could use the digger'*). In addition, it also refers to the use of *'diesel'*, but does not clarify who paid for the fuel to operate the machinery which is important because without the diesel the piece of machinery would be inoperable. In order to be able to remove the liquefaction *Pitanga* also needed to hire *'a couple of trucks'* which he paid for himself adding further economic capital elements to the assemblage of capitals needed to clear the liquefaction. Finally, and perhaps more importantly, analysis of *Pitanga's* narrative illustrates how in order to be able to clear the liquefaction this participant had to draw on his social capital to access built capital (the digger) through the machinery operator who was living in the Motorcamp at the time, and also access skilled human resources (truck drivers) to drive the hired trucks. The importance of the network of people who were living in the Motorcamp, and its strong sense of community built through years of social relationships, is highlighted numerous times: *'Because of the community we have here we actually got things tidied up before the army showed up (...) so we had relationships with a lot of these people (...) When you needed help they were there, they were there'*. This sense of community that was important for the Motorcamp's response, and *Pitanga's* positioning within it, constitutes the result of years of economic, social, cultural, symbolic, political, and moral capital development, accumulation and mobilisation. In the next section, the ways in which capitals have been drawn on to craft a sense of community are explained in more detail.

5.5.2. Capitals and the sense of community in the Kairaki Beach Motorcamp

When questioned about the people who were staying in the Motorcamp at the time of the earthquake, *Pitanga's* answer was: *'(...) at that stage as many as sixty because of the people that were staying for the fishing season, but also there was a group of people who like to have that lifestyle and we still have them here'*. In this last phrase two indicators of embodied cultural capital of this internal community are apparent: the *'fishing'*, and *'the lifestyle'*. *Pitanga* later complemented this by specifically referring to the *'lifestyle'*, situating himself within the community

through using the term 'we' but also positioning himself in a hierarchical relationship with these other actors through referring to the fisherman as 'them', and 'they'. He also distinguished between the transient community members and the permanent 'life-stylers', alluding to the Motorcamp community as a structured field, where accrual of social position and thus accrual of capital was directly linked to permanency. The field of the Motorcamp community was equally perceived by Pitanga to be dynamic and intergenerational as follows:

'(...) we still have thirty five permanent sites with people living on them, they are mostly retired people, and a lot of them have elected to live here, and they do it because here things are taken care of, they don't have nuisances, we don't have parties and those kinds of things, they live a quiet life here. And a lot of them will spend the offseason in Australia or in other parts of the warmer climates, so it's a lifestyle they choose (...) Over the course of the years, this camp was a serious fishing camp, back in the day there would be huge numbers of Salmon caught in here, of course, that sort of thing is changing, but, what happened, is that as generations of people have passed through, I mean, we've met grand kids from people that have come out here for years. And what happened was that that longevity of site that we have, a lot of them got to an age where they were retiring and thinking "hey, hang on, I'm living in a street where I don't know anyone", and they know everyone in here, and very seldom do we have across the fence battles or things like that, they all tend to get on pretty well. I think there was a lot of mindsets down the lines of "I'm retired now, I need people to talk to, I freed up my finances", and a lot of them probably have more of an active life being in that situation and they do travel, a lot of them go to Australia for their winters, go up North, do that sort of thing' (Pitanga).

The 'lifestyle' described in the extract above links a significant number of Motorcamp community residents with 'retirement' and presents their residency as a matter of choice ('a lot of them have elected to live here', 'it's a lifestyle they choose') driven by an attraction towards a 'quiet life' which in turn is underpinned by capital elements such as: economic capital ('freed up my finances', 'travel'), and cultural capital ('they don't have nuisances, we don't have parties and those kinds of things'). A deeper interpretation of the participant's talk highlights the more historic aspects of the lifestyle such as the idea of 'longevity of site'. This concept of 'longevity of site' suggests that this lifestyle and sense of community have been constructed over a long period of time (generations)

upon very strong and deeply rooted forms of cultural and social capital, and this process is explained in the following paragraphs.

Within the narrative the phrases '*back in the day*', '*generations of people have passed*', '*for years*' all refer to time, a specific type of intergenerational temporality that links the campsite with the individuals and families that frequently and consistently congregated in the Motorcamp attracted by '*the fishing*' despite the local fisheries recent decrease. This last reference to '*fishing*' is interesting because it refers to the past, '*this camp was a serious fishing camp*' and one interpretation could be that the camp is no longer a '*serious fishing camp*'. *Pitanga* acknowledges this when stating the salmon catch has decreased significantly over the years. Yet he notes that people still remain in the campsite despite the decline in fish stocks because although the first element that brought people together to the campsite was the fishing, as time passed, campers experiences in the campsite continued to aggregate and construct what *Pitanga* refers to as '*longevity of site*'. That is, the site has its own temporality in reference to the people that occupy and use it.

Additionally, in the practice of inhabiting that space whether it be seasonally or permanently, campers have built relations with each other across time ('*they know everyone here*'), accruing significant amounts of social capital. Therefore within the concept presented by *Pitanga* of '*longevity of site*' social capital elements can be found that link campers to land (the site), to people (other campers, and family, generations), and to other beings (fish), that together construct a particular shared habitual practice ('*living*'), while simultaneously building shared cultural capital. Thus, an argument may be advanced that the pillars upon which the internal community is constructed go beyond the superficial characteristics of a '*quiet life*', and '*fishing*', to the idea of '*longevity of site*' or rather longevity of community. This notion of '*site*' is underpinned here by the notion of community which is built upon shared social and cultural capitals created through decades of '*living*' and interacting together through the different cycles of the Motorcamp (e.g., the decrease in fish catch) and phases of life (i.e., retirement, generational changes).

This shared habitus and familiarity within the Motorcamp community that has been constructed over time also enables social capital through which residents '*get along pretty well*' with infrequent '*over the fence battles*'. This last term, '*over the fence*' could be construed as comparing the '*friendly*' environment in the Motorcamp with relations in other living environments outside the campground

and/or urban contexts where people may not know their neighbors well. Lack of relational connections (social capital) undermines social cohesion and processes in social settings, such as the ability to resolve conflict. This is specifically noted in another statement by *Pitanga* who refers to conflict resolution strategies and informal norms used within the campground to build social capital, as follows:

'And the other thing you need to be aware of is that in any environment, there is a certain amount of peer pressure like "you are not living up to standard", or whatever, and that does come. A lot of people, especially when we moved out over here, a lot of the campers set their own rules, we set guidelines, but they said "well, we are going to do this, you come see us and we'll make sure that everyone complies because we are all together", and it came out perfectly. And we have some very tidy permanent sites, and they won't deteriorate because they are not allowed to, not because we have to do very much, but because of the standard that they have self-imposed' (Pitanga).

The Motorcamp community further developed social capital in the form of its own set of informal social rules, surveillance and compliance devices constructed around *'peer pressure'*. These *'rules'* and *'standards'* are linked to the *'longevity of site'*, predating the arrival of *Pitanga* and his partner as lease holders: *'when we moved out over here, a lot of the campers set their own rules'*. *Pitanga* also suggests that these rules may be shaped by the aesthetics of the sites: *'we have some very tidy permanent sites'*, and it is this aesthetic standard that the Motorcamp community tends to keep enforced through its community-driven compliance device, that being, *'peer pressure'*.

Furthermore, *Pitanga's* acknowledgement of this practice and willingness to allow the community to exercise its own agency and authority in regards to the aesthetic standards of the site might be interpreted as an element that invests *Pitanga* with symbolic and political capital. In recognising these deeply embedded practices at the Motorcamp, *Pitanga* is also acknowledging and respecting the *'longevity of the site'*, and the internal social dynamics. Upon their arrival, *Pitanga* did not try and impose his authority and change these rules, instead management accepted the communities' self-regulatory practices. In doing so he reinforced acceptance of his role as the new manager and harnessed enabling practices that strengthened community dynamics and cohesion. That said, his hierarchical position within the field of the Motorcamp community is also underpinned by his accrual of economic and symbolic forms of capital.

Pitanga referred to a personal financial investment that he and his partner had made in the Motorcamp: '(...) *we have been able to build up the accommodation side of things, the motels and the cabins, that's all our stuff, and it gave us an interest in the place*'. This economic investment in the Motorcamp has linked *Pitanga* financially to the site and created a sense of ownership, of '*interest in the place*', that is underpinned by symbolic capital elements such as the possession of the Motorcamp's lease which endowed him with management responsibility for the Motorcamp.

In *Pitanga's* narrative the management role is strongly associated with having responsibility for and providing services to residents ('*once we had the basics like getting rid of their waste water, toilets*'). Outside the Motorcamp these responsibilities would normally fall to the homeowner if the problem was within the property, or the Council if it was outside of the property. At the Motorcamp, responsibility for services is displaced from the resident directly to the camp manager becoming a part of the community's cultural capital upon which the lifestyle is built as the following extract from *Pitanga's* talk further illustrates: '*here things are taken care of*'. Although there is no clarification of what constitutes '*things*', it is clear that responsibility for these things does not lie within the community itself but elsewhere. In the context of the emergency response after the 4th of September earthquake, the responsibility to solve issues around provision of services fell to the manager *Pitanga*. He noted: '*we had to stay in here for three days after the earthquake sorting stuff out*', '(after the earthquakes) *we reached a point where we decided not to take anyone else on, we had our own to look after*'. This sense of responsibility is underpinned by a strong pastoral care element (Foucault, 2007). However, this same phrase also establishes a social boundary between '*our own*' possibly referring to the stable Motorcamp community, and '*anyone else*' referring to people from outside this community who came to the Motorcamp looking for accommodation. *Pitanga* further clarified this positioning of people in relation to the Motorcamp as follows: '*there were [more people coming into the campsite after the earthquake], because of the displacement in Christchurch, and they would look at the camps as an option*'. *Pitanga's* role as manager and sense of responsibility for the Motorcamp community meant that he needed to limit the number of people in the campgrounds, and also enforce behavior and social rules ('*straight lines*'). He commented:

'For the majority and I dare say the majority, they [Motorcamp residents] were generally helpful, and once we had the basics like getting rid of their waste water, toilets, most of them just slipped back into the lifestyle they had. But there was another group [of residents] that

threw stones, and we had a few of those, someone saying “oh, we have sewerage coming under our caravan”, and I knew there was no sewer line there. But, they still thought they smelt something and it became our problem (...) You tried to talk to them for the most part, we would tell them what we could do and what we couldn't do, and if they couldn't accept that they needed to go find somewhere else, and I know it sounds hard, but you've got to have a straight line, if you don't do that it becomes so difficult (...)' (Pitanga).

Pitanga with the symbolic power to draw ‘*hard lines*’, such as the responsibility lines between ‘*what we could do and what we couldn't do*’, established boundaries that stipulated requirements for and limited the actions of residents. This was evidenced when he was faced with conflicts such as the one presented in the preceding block of text, where some residents complained (‘*threw stones*’) about the smell of sewage under their caravan. The ‘*hard lines*’ or consequences of being non-compliant are outlined by *Pitanga* who indicated that if the boundaries were not respected by residents, then campers must ‘*find somewhere else*’ to live. Thus, the accrual of economic, cultural, social, moral, and symbolic capitals invested *Pitanga* with the power to set boundaries and stipulate accountabilities. He also had the power to allow people who complied with rules within the Motorcamp to stay, and to evict those who did not. *Pitanga* enacted this power through discipline (‘*hard lines*’), punishment (‘*find somewhere else*’), as well as by harnessing the community’s self-surveillance mechanisms (‘*peer pressure*’, ‘*we'll [Motorcamp residents] make sure that everyone complies*’). As a result, a strong internal disciplinary apparatus was established that normalised the community by suppressing or marginalising the dissenting voices (Foucault, 1955) and prevented things becoming ‘*difficult*’. Thus, discipline and normalisation are constructed by *Pitanga* as the ‘easy’ way of handling social heterogeneity in the Motorcamp community. However, this approach suppresses diversity by marginalising voices that do not adjust to the campground’s norm.

These homogenising disciplinary mechanisms, in addition to the ‘*longevity of site*’, reinforce the strong sense of community within the Motorcamp based on a particular habitus, a ‘lifestyle’. Underpinned by a ‘quiet life’, this ‘lifestyle’ is enacted through largely recreational pursuits including fishing and is characterised amongst other things by a displacement of responsibility around provision of services to the Motorcamp managers. *Pitanga*’s authority as Motorcamp manager emanates from his accumulation of social, cultural, moral, economic, political, and symbolic capitals exemplified in his social, moral and economic investments in the Motorcamp. As a result of this

capital accumulation *Pitanga* and his partner became the leaders of the emergency response at the Motorcamp, which developed organically without local authorities support for the first two weeks after the September earthquake. Overall, the process remained highly self-efficacious and autonomous despite the collective's marginal social and geographical positioning in the field of immediate response. This marginal positioning is further explored in the following section.

5.5.3. Marginal positioning of the Kairaki Beach Motorcamp in the field of immediate response

In the following talk *Pitanga* presents an overview of how the Motorcamp is situated within the broader District and in the field of immediate response:

'To some degrees it [Motorcamp community] does [relate to the rest of Kairaki outside of the Motorcamp], but to others they are more of a community of their own. When you are a ratepayer out here, you have the ratepayers association, the Pines and Kairaki Beach Association, but the people here in the campsite obviously don't have that facility to them. Even I don't participate on that, because frankly there's enough in keeping this going without getting too involved with things outside (...) they [WDC] had a lot on their plate too, there as a lot of destruction and we were just a smaller little corner. So, I don't think we heard from the Council the first two weeks' (Pitanga).

In this extract, there is evidence of the Motorcamp's geographical isolation and marginalisation from the mainstream immediate WDC response to the earthquake. The entire Kairaki and Pines area is designated as being *'out here'*, so there is a sense of being on the margins, of a distance between the *'out here'* from a more central *'in there'*, which another section of *Pitanga's* talk indicates may be situated in Rangiora: *'(...) transport people out of the campsite into Rangiora'*. Additionally, there is a further differentiation that separates the Motorcamp community from the broader *'Pines and Kairaki'* community of *'ratepayers'* grouped in the Pines and Kairaki Beach Association (PKBA). The Motorcamp's community does not have access to the PKBA and thus not to capital accrued by the association. However, the Motorcamp does not have any interest in joining the PKBA, which is perceived as *'things outside'* (*'the campsite obviously doesn't have that facility to them. Even I don't participate on that, because frankly there's enough in keeping this going without getting too involved with things outside'*).

The sense of existing on the margin is further reinforced when *Pitanga* states: *'we were just a smaller little corner'*. This divide between the central Rangiora and the marginally positioned Motorcamp

community is also evidenced in *Kururú's story* in which Rangiora was established as the centre for CDEM operations for the Waimakariri. *Kururú* states: *'the emergency centre opened up, and our part of the resourcing came right from here [Rangiora], in this room (...) staff that worked here, or lived in North Canterbury were signaled to come here [Rangiora Station]'*. Additionally, and as noted by Pibbs et al. (2018) use of 'the inverse response law', *Pitanga's* view also reinforces *Kururú's* talk illustrating how rural communities can often be under prioritised by emergency services whose collective focus is on the bigger urban centres: *'Christchurch is the biggest generator of everything, Christchurch has four and odd thousand people, the Waimak, Hurunui, Selwyn are all afterthoughts [for immediate response] (...) rural communities do sometimes get left behind'*.

Pitanga also infers further marginalisation of the Motorcamp community when he indicated post-earthquake contact with the WDC was delayed: *'we were able to tell the Council when we managed to get through to them'*. Waimakariri District Council (WDC) had the capital accumulation to establish response and recovery priorities. However, the WDC set priorities to restore lifeline utilities that enabled a sense of 'normality' based on 'houses', 'work', 'school', and 'property' as seen through *Tacuara's* story. Due to the fact that the Kairaki Beach Motorcamp's 'normality' was different to the 'normality' constructed by the WDC's organisational perspective as described by *Tacuara*, the Motorcamp community was not amongst WDC's initial top priorities. Given the difficulty of gaining a response from the District Council and taking the view that they were not amongst the top priorities and 'a smaller little corner' of the region 'the community' was forced to remain in the Motorcamp and mobilise their internal resources in response to the emergency (*'we had to stay in here for three days after the earthquake sorting stuff out'*). However, although the marginal positioning in the field did require an initial autonomous mobilisation of the Motorcamp's community capitals, the autonomy was limited by the Motorcamp's dependence on the WDC to fix the sewerage as indicated in *Pitanga's* initial extract: *'they [Council] did, they came down and did that [fixed the sewer]'*.

In summary, *Pitanga's* narrative illustrates the way in which the isolated community and *Pitanga* (through his management role) mobilised cultural, social, economic, political, symbolic, and moral capitals to solve different emergency related situations, such as clearing the liquefaction, and service provision. *Pitanga's* story highlights the importance of metaphysical capitals for self-efficacy in marginal communities, which may be a lesser priority for emergency services and local authorities during immediate responses to disasters. *Pitanga* makes a direct association between

the efficacy of the response and the community as follows: *'because of the community we have here we actually got things tidied up before the army showed up to help us clean up!'*. He asserts that the 'lifestyle' community played an active role, constituting itself as what *Pitanga* describes as *'helpful'*, mobilising resources such as a *'digger'* and volunteers to operate it, as well as volunteers to operate trucks which removed liquefaction. The notion of community agency and action is underpinned by the concept of *'longevity of site'* which was built upon strong social and cultural capital accrual through-out the twenty-eight years *Pitanga* and his partner had operated the Motorcamp. As he states *'they knew us, and we knew them'*. Knowing people, not only their faces, but their stories and their lives: *'I'd seen their kids grow up and things like that'* was an essential and relational characteristic that underpins mobilisation of community capitals. *Pitanga* had also accrued personal symbolic capital, based on the long standing synergistic relationships crafted through his effective management strategy, which respected internal social dynamics within the Motorcamp community. All of these elements came together when the community needed help, and the community provided it, momentarily coming out of its *'quiet life'*.

The Kairaki Beach Motorcamp's story as told by *Pitanga*, as well as the stories described by *Kururú's* and *Tacuara's* interview talk, and the triangulation of these narratives with other interview material processed through content analysis techniques (see Section 0) provide important insights for emergency response practice. These insights will be showcased in the following section.

5.6. Practical implications for emergency response: Marginalised natural environment and communities

This chapter shows how the field of immediate response can be structured by the way in which 'normal' productive habitus can be prioritised by CDEM and Council related organisations over other forms of life and habitus. As an exemplar, WDC priorities based on a 'normal' disciplinary and productive habitus resulted in the initial marginalisation of the Kairaki Beach Motorcamp community as well as natural elements such as the Kaiapoi River and the Kairaki coastline. These immediate response field dynamics could pose important practical barriers to the operationalisation of the National Resilience Strategy 2019 which mentions the potential vulnerability of isolated and marginalised sections of the community such as rural communities and the integration of the natural environment into response efforts.

Additionally, results described in this chapter indicate that, in emergency contexts, the accrual of capital in emergency response organisations with strong politico-moral alignment such as the New Zealand Police and local Councils can enable executive and fast decision-making and implementation of aligned chains of command. Executive and fast decision-making can save lives in the context of imminent threat to life and facilitate restoration of damaged lifeline utilities that are a focus of emergency responses after disasters. However, centralisation of power can also result in the prioritisation of one sector of society over another. For instance, in the Waimakariri, the accrual of capital in the WDC enabled actors which embodied the organisation such as *Tacuara*, to prioritise a disciplinary and productive habitus. In such instance the perspectives and /or needs of those positioned outside of a preferred habitus such as the unemployed, ‘non-property owners’, Motorcamp residents, those pursuing fishing lifestyles, as well as other life forms such as the animal and plant life that dwell in the Kaiapoi River and the Kairaki coast may be marginalised. Similarly, *Kururú’s* prioritisation of ‘professional’ emergency responders could lead to the marginalisation of Māori and ‘non-professional’ responders.

These findings can also inform the implementation of immediate response legislation and policies in New Zealand such as the Civil Defence Emergency Management Act, 2002, its subsequent 2012 amendment, the CDEM Strategy (2008), the CDEM Plan (2015), and the recently released National Resilience Strategy (2019). The imperative of executive hierarchical decisions is recognised through these documents, but little guidance can be found in these texts that will ensure hierarchical emergency response decisions are culturally inclusive. This creates an important challenge to ensure executive yet culturally aware and respectful decision-making that enables the equitable response referred to in documents such as the National Disaster Resilience Strategy (2019).

5.7. Conclusion

Content analysis of all participants’ narratives has highlighted that ‘people’ are at the centre of the immediate response, while results from a cluster analysis showcase two clusters of capitals. One cluster of human, social, cultural, and moral capitals; and the second cluster, comprised of political, built, and economic capitals. Results also indicated that both clusters were closely related, and a network analysis of capital interrelations also showcased the highly interrelated and complex characteristic that underpins the capitals conceptualisation. Narrative analysis of participants’ talk provided further information that illustrates these capital interrelations.

Narrative analysis of *Kururú's* story shows ways in which professional emergency responders' embodied cultural capital can lead to the creation of strong bonding social capital as well as contribute to the creation of a sense of class, or group of emergency response professionals. This accumulation of professional emergency response cultural capital and its associated bonding social capital created a perceived sense of legitimacy in *Kururú* to access and monopolise response leadership positions. Additionally, *Kururú's* sense of legitimacy also led him to dismiss other professionals who did not practice emergency response on an everyday basis because they were perceived by *Kururú* to lack the requisite professional and social legitimacy to efficiently lead emergency response efforts. Finally, *Kururú's* talk illustrates how homogeneous, hierarchical command and control approaches to emergency response contexts, although highly efficient in saving human lives and maintaining a dominant social order, can also marginalise cultural values and practices that are not part of the dominant social order being protected.

Analysis of *Tacuara's* story demonstrates how the infrastructure team from the WDC mobilised human, social, cultural, symbolic, moral, economic, political, and built capitals to place themselves at the centre of the response field, and position people and 'normality' (house, work, school, individuals, property) as the first priority for infrastructure response actions. However, *Tacuara's* narrative also illustrates how placing people and 'normality' at the top of response priorities can also lead to the marginalisation of elements that lie outside of what is 'normal' for both this participant (such as unemployed people, renters), and other inhabitants of the local natural environment, such as fish and plants.

Finally, *Pitanga's* story shows how a geographically and socially isolated coastal community drew from their strong sense of community and *Pitanga's* leadership as Motorcamp manager (social, cultural, symbolic, and political capitals) to establish their priorities, and address the response challenges associated with the restoration of damaged services, such as sanitation, and water.

Overall, results shown in this chapter highlight how physical and metaphysical capitals were used by different actors to place themselves in different positions in the field during the response to the 4th of September earthquake. Arguments presented in this chapter also underscore how capital accumulation can be used to secure safety for some who live within the parameters of 'normality' as constructed by holders of strong capital accumulation (e.g., official responders), while simultaneously place marginalised social groups such as the unemployed, Māori, and Motorcamp residents as well as non-humans (e.g., plant and fish life) at risk. The highly complex, interrelated,

dynamic, and unfinalised characteristics that underpin the mobilisation and assemblage of different forms of capital is also highlighted. This insight can inform emergency response practice because it helps to explain why emergency response discourses in documents such as the National Disaster Resilience Strategy (2019) can be hard to implement given the complex, multi-scalar and evolving capital interrelations that characterise response efforts in practice.

6.1. Introduction

As the immediate effects of the earthquake were being dealt with, and after facing the immediate response challenges described in the previous chapter, the response slowly merged into recovery. This chapter discusses the ways in which different capitals were applied by research participants and key stakeholders to facilitate the Waimakariri's recovery process, which for this research is considered to have begun after the state of local emergency was lifted on the 16th of September of 2010 and lasted until the Waimakariri Red-Zone Recovery Plan was launched by the Waimakariri District Council (WDC) under the label of 'regeneration' late in 2016. The discussion is informed by a content analysis of the interviews and a separate narrative synthesis of research participant's talk. Particular attention has been paid to the narratives of three key informants from the Waimakariri; *Yaguareté*, *Yarará*, and *Aperéá*. The diverse voices of other participants will be brought into dialogue with the four key narrators in order to explore the ways agents positioned themselves (or where forcefully positioned by others) in the recovery field and how this impacted capital distribution across the community. Overall, this chapter highlights the metaphysical nature of recovery, and therefore, the important and often overlooked ways that metaphysical forms of capital including symbolic, cultural, social, political, and moral capitals may be applied to shaping the distribution of resources across the community during earthquake recovery processes. The following section will begin by describing the results obtained from the content analysis.

6.2. People and recovery in the 'Waimak'

Figure 16 illustrates the recovery associated references coded as positive (green) or negative (red) capital (codes), across the 51 participants.

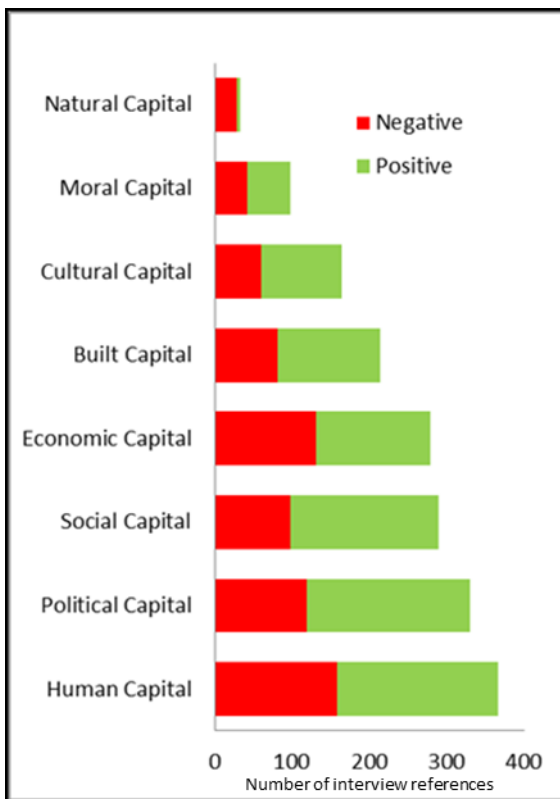


Figure 16. Graph synthesising total amount of participants talk references coded as positive or negative capital elements across the 51 participants.

In contrast to immediate response, Figure 16 shows that human capital was the most frequently mentioned form of capital mobilised during the recovery phase in the Waimakariri district. Additionally, the number of total references increased from immediate response to recovery. There were 151 references tied to human capital in immediate response, and 366 references to human capital in recovery. Predominantly, negative human capital references were made around mental and physical health needs that emerged during the recovery such as the following quote from *Curupí*, a Recovery Assistance Coordinator from the WDC: *'There was another man who came from the red-zone, who again was exceptionally angry about the whole situation [with insurance claims and the red-zoning process], he was out driving one day and drove into the river, that was just another heart attack'*. Positive references were mostly made to describe the role of earthquake

support coordinators working in the Recovery Assistance Centre (RAC) as described by *Timbó*, a community leader from Kaiapoi: ‘definitely having a recovery centre, yeah, there was the place, you could come in and there was a variety of desks, there were people who met you and then directed you to whoever you should see (...) And, then our support coordinator team (...) that was absolutely crucial I would say’. The increased number of references noted during the recovery stage indicates that conversations with participants tended to focus on the recovery process rather than immediate response. The likely reasons for this focus include recovery spanning a longer period of time compared to immediate response, and recovery involving very complex issues (e.g., red-zone, insurance, displacements) that affected the community perhaps even more than the specific earthquakes themselves, as the narrative analysis will demonstrate. Another noticeable difference between immediate response and recovery is the decrease in the percentage of built capital references in comparison to political, social, and economic capitals. This decrease in built capital references indicates that recovery tended to be dominated by social, political, and economic issues as affirmed by *Yaguareté’s*, *Yarará’s*, *Panambi’s*, and *Apereá’s* narratives described below.

Figure 17 presents a dendrogram indicating proximity between capital nodes and recovery based on the number of words (and stemmed words synonyms) each code has in common with each other.

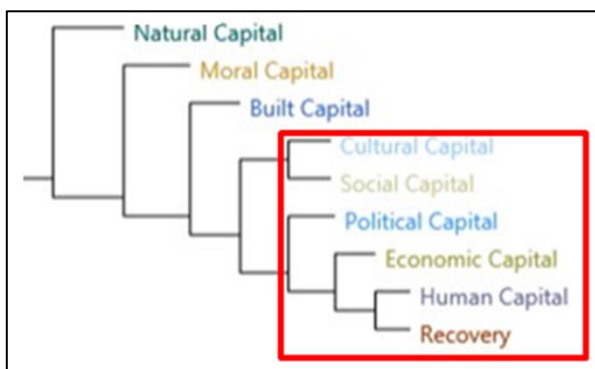


Figure 17. Recovery and capitals cluster analysis dendrogram synthesising the 51 participants talks associated with recovery across the Waimakariri.

Figure 17 indicates a clear proximity between recovery and human, economic, political, social, and cultural forms of capital, which is consistent with the results shown in Figure 16. This relation and closeness between capitals will be explored in depth through the analysis of *Yaguareté’s*, *Yarará’s* and *Apereá’s* talk.

Drawing on the talk of the 51 participants, Figure 18 depicts interrelationships between capitals from a network perspective during the recovery phase, and underscores the findings in Figure 17.

The black dots (nodes) in the network image represent capitals and the lines (ties) connecting the dots represent relations between the capitals. The colors and width of the lines indicate the strength (frequency) of capital relations, with thick red lines showing the strongest ties, yellow and middle thickness show average strength, and green thin lines indicate weak ties.

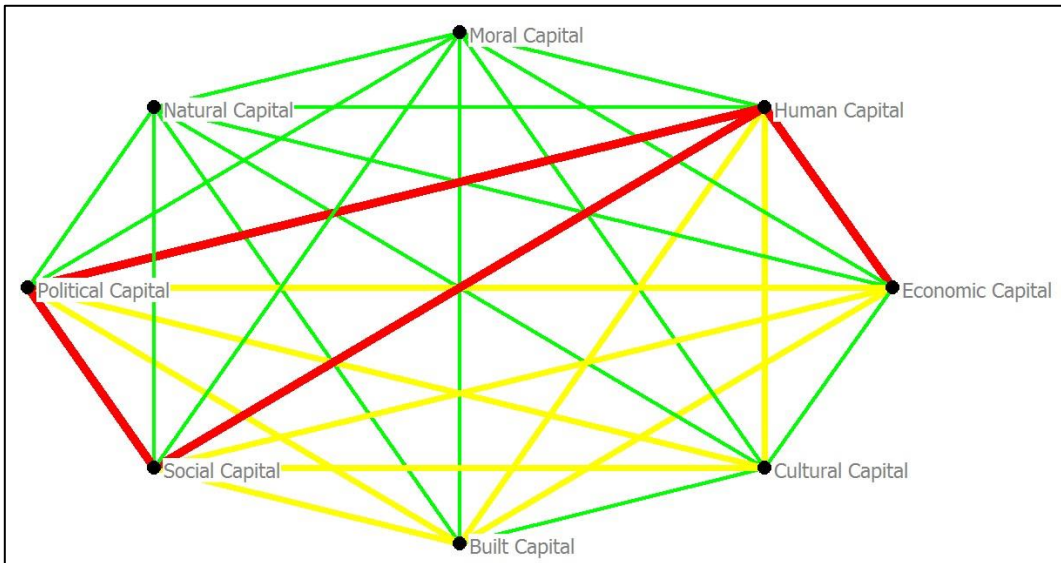


Figure 18. Capitals network image synthesising all capital interrelations coded across the 51 participants associated with recovery in the Waimakariri.

Figure 18 highlights strong ties between human, economic, political, and social capitals during recovery. Just as Figure 14 demonstrated in chapter 5, Figure 18 underscores the complex interconnections between the various capitals and the challenge of analysing each capital in isolation.

Figure 19 presents a word cloud (word frequency) synthesising the content of all capital codes found across the 51 participants talk which referred to the recovery phase in both Kaiapoi, and Pines and Kairaki Beaches. The key theme that stands out is ‘people’. ‘Community’ was also a frequent term used across both immediate response and recovery phases. The frequency participants’ referred to the terms ‘people’ and ‘community’ underscore the repeated reference to human, social, cultural, and political capitals, and their close interrelationships, as Figure 17 and Figure 18 demonstrate.



Figure 19. Word cloud synthesising word frequency associated with Recovery across all 51 participants.

Additionally, specific words such as ‘needs’, ‘housing’, ‘money’, ‘government’, and ‘insurance’, reference a different nature of issues arising, around the relation between central government and the community, insurance issues around housing, and the relevance of ‘money’ as an element of the recovery often referred to by participants around the central theme of ‘people’ and human capital. However, nuances in how human capital and ‘people’ are underpinned by metaphysical capitals (social, cultural, political, and moral) become evident in the recovery data. Analysis of key informants’ talk presented in the following section, beginning with *Yaguareté’s* narrative, highlights these nuances, including habitus, knowledge, power, and marginalisation.

6.3. *Yaguareté’s* narrative

Yaguareté is Kairaki Beach resident with active involvement in the Pines and Kairaki Beach Association (PKBA). Both *Yaguareté* and PKBA held pivotal positions during the earthquake recovery. With a legacy of almost one hundred years, and a strong relationship with the Waimakariri District Council (WDC), the PKBA centralised information flows in and out of the community, and provided space for dialogue to take place between affected residents and formal recovery organisations such as the Canterbury Earthquake Recovery Authority (CERA), Earthquake Commission (EQC), insurance providers, and WDC.

(...) when it all happened [4th of September earthquake], we [PKBA] needed to sort out what was going on, [be]cause also, I am a designer, so I do architectural design and I’ve got friends

who are engineers and work with geo-tech engineers so I have some good contacts from that technical point of view (...) we [PKBA] had been talking to geo-tech guys and figured out what was going on, and we had a couple of houses just about ready for consent, we had worked out foundation solutions, stronger foundation solutions and they were kind of ready to go and we'd been talking to building unit in the council and everybody was happy on our track (...) So then, and before I'd been representing our residents down here, but when the red-zone happened we really needed to... we thought that [red-zone] wasn't right, so I got a lot more involved [in post red-zone negotiations] and we had a lot of meetings of the affected people and then talking to council, and CERA, and to the engineers that I had, and because we'd done a fair bit of that and doing the design for some people's places we already had quite a lot data, and we knew that they hadn't been down here testing at all, zero testing, so we knew that that hadn't happened and so our first approach was, you know, let's talk, let's have our technical people talk to one another, and in the whole process that never happened, never, ever, ever happened (...) But having that [red-zoning decision], that actually led to real uncertainty, and it's still going on, we still don't know exactly what's happening next door. So that was the biggest one for people's well-being. And the way that went, I don't know if you've seen any of the letters CERA sent out to people in the red-zone, I'll get a copy of some of them. They were absolutely horrible, they all had 'compulsory acquisition' written on them, and they all had "taken services away" (...). And we had a fair idea that the bar for that [compulsory acquisition] was pretty high, but the government were doing some odd things so, and they had the power to do that within the CER Act, so that was pretty scary for people' (Yaguareté).

6.3.1. Mobilising metaphysical capitals to produce local knowledge in the Pines and Kairaki recovery field

Yaguareté's narrative starts: *'when it all happened, we needed to sort out what was going on'*. This phrase suggests that after the 4th of September earthquake (*'when it all happened'*) there was a need to organise or re-organise (*'sort out'*) something which was out of order, to create order, and that there was a lack of knowledge, uncertainty about a dynamic situation (*'what is going on?'*), which hampered action. Deeper understanding about this situation can be gained by drawing on Foucault's (2008a, 2009) argument that through knowledge production *things* are categorised and organised to fit cognitive structures that give order to the world in the form of 'facts' or 'truths', thus producing certainty and predictability. Capital accumulation can be drawn on to produce or

claim possession of such 'truths' because the value of a 'truth' is determined by the power of the people who hold it and the power of the people who recognise it, not in the 'truth' itself (Bourdieu, 1991, p. 190). *Yaguareté's* accumulation of multiple forms of capital (cultural, social, symbolic, and political capitals) which underpinned his pivotal position in the field of recovery (bridging social capital) were key in helping restore such order and certainty ('*we (...) figured out what was going on*'). This capital accumulation will be explored further, starting with cultural capital.

Yaguareté drew from his accumulation of embodied cultural capital to place himself in the pivotal position he occupied and to help restore certainty in the field. However, it was not the accumulation of a single form of cultural capital, but, rather, the diversity of cultural capital elements such as his designer and boating habitus that provided the basis for him to be able to move across the habitual boundaries (e.g., bodily dispositions, use of linguistic expressions) that separate social groups in the field. This diversity of cultural capital elements is explored further below.

Yaguareté states that he was a '*part of the Pines and Kairaki Beaches Association and doing things with that*' which can be interpreted as his active membership of the community at Pines and Kairaki. *Yaguareté* later expanded his characterisation of the community as follows:

'(...) people live down here for the same kind of reason, it's a recreational thing, it's the fishing, it's the boating, because we have so much of that here that it's quite a unique place so there's that shared experience, and to a degree a shared view on life' (*Yaguareté*).

This statement suggests that membership of this group may also be underpinned by the embodiment of a particular type of experience and or practice around '*fishing*', and '*boating*' thus establishing a group, a class (Bourdieu, 1984, 1990, 2012), of which *Yaguareté* feels a part and with which he can communicate. In addition to his community engagement, *Yaguareté* also developed relationships with local government actors. Through exposure to the administrative processes and networks associated with local government, *Yaguareté* became familiar with another type of habitus, the embodied ways in which WDC staff engaged with the public. He states: '*we had a lot of meetings of the affected people and then talking to council (...) we'd been talking to building unit in the council. 'Talking'* implies a familiarity with verbal and non-verbal communication practices which are associated with habitus (Bourdieu, 1991). *Yaguareté's* capacity to talk to Council indicates that the language and habitual ways of Local Council staff were familiar enough for him to establish a fluent dialogue with them. However, there were other forms of capital (such as institutionalised

cultural capital, social, symbolic, and political capitals) that provided the means for him to restore 'order' and 'certainty', and these will be explored further.

Yaguareté refers to a form of institutionalised cultural capital that symbolises competence and authority in the field of built infrastructure: *'I am a designer; I do architectural design'*. Also, in 'being' (*'I am'*) a designer, *Yaguareté* not only manifests possession of institutional credential, he indicates embodiment of it. Through his professional credential, a direct connection can be made to other forms of capital (such as social, symbolic, political, and embodied cultural capitals) which *Yaguareté* drew on to consolidate his position in the field of recovery, and help restore certainty about the condition of the land to the community. *Yaguareté* continues to connect habitus (embodiment and enactment of his professional credential), the professional credentialing itself, and his network of friendships; *'(...) and I've got friends who are engineers and work with geo-tech engineers so I have some good contacts from that technical point of view'*. From a Bourdieusian (1990, 2012) perspective, *Yaguareté's* habitus provided him with an advantage associated with the accrual of social capital, and relations to specific agents perceived by *Yaguareté* as holders of technical knowledge relevant to the recovery. Explicit in his narrative is the broad spectrum of connections he developed, such as connections with WDC and geo-tech engineers, which strengthened *Yaguareté's* claim of legitimate authority to act on behalf of the community (*'I'd been representing our residents'*). In this way, he synergistically connects cultural, social, symbolic and political capitals together as the capital foundation that underpins his pivotal position in the field.

The importance of pivotal positions in the field of recovery, and the cultural, social, symbolic, and political capitals that are drawn on to construct them, are also evidenced throughout *Yaguareté's* story. Having access to the 'legitimate' knowledge production techniques and language through his designer praxis and his engineering connections, in addition to his ability to dialogue fluently with community residents (recreational fishing and boating habitus), as well as with Council staff (bureaucratic habitus), gave him the necessary symbolic and legitimate political capital to 'represent' his fellow residents during recovery. Thus *Yaguareté's* symbolic power (legitimacy) provided the basis for him to use his cultural and social capitals to accrue political capital by using geotechnical knowledge to provide certainty to residents justifying their permanence in the land. Additionally, *Yaguareté's* symbolic power facilitated his engagement with local government which enabled WDC access to local geotechnical knowledge and the issuing of building consents, which

brought order and certainty (*'sorted out'*), and enabled community well-being (*'everybody was happy on our track'*).

6.3.2. Capital accumulation and forced displacement of local geotechnical discourse and residents in the Pines & Kairaki recovery field

Yaguareté's story introduces the red-zoning process led by CERA. Endowed with significantly greater amounts of economic, symbolic, and political capitals than the Pines and Kairaki Beach communities, CERA decisions drew on expertise that displaced the locally generated geotechnical discourse that sought to secure the permanence of these local communities that *Yaguareté* refers to as producing certainty and order (i.e., *'sort out'*). This displacement of the local discourse led to the physical and forceful displacement of residents from their land, which, whilst meeting the government's red-zoning criteria, severely impacting the communities. Participants' talk describes this situation as: *'wasn't right'*, *'frustrating'*, caused *'uncertainty'*, and *'horrible'*, *'scary'*, and *'trouble'*.

Informed by Rogers (2011b), and the Office of the Minister for Canterbury Earthquake Recovery (2011), the red-zoned areas were designated based on the following criteria: areas where area-wide land damage occurred; where engineering land damage solutions would imply uncertainty in terms of detailed design; and where the success and possible commencement of land repairs would be disruptive for landowners, take a long time, and not be cost-effective. In addition, the establishment of these criteria was informed by two key factors: ground settlement and lateral spread. Rogers (2011b), a geotechnical specialist from Tonkin & Taylor, which was leading the land assessment for CERA, described these factors in a public presentation as follows:

'The key factors that have basically informed, I guess, the analysis in terms of the land are the land level changes, and this is important. There's been a lot of ground settlement, the ground has literally sunk and what this does is that it actually reduces the thickness of the crust, and by the crust what we mean is the depth between the ground surface and the ground water table. This then increases the severity of liquefaction damage under ground shaking, but it also reduces the ability of the ground to actually support buildings. The other one of course, as we've mentioned is the lateral spreading which is the land moving sideways which as I said was particularly concentrated around the waterways' (Source: <https://www.youtube.com/watch?v=GqZxtx3R2Lo>).

Determining and applying the criteria drew upon and mobilised significant accruals and types of capitals, including social, symbolic, economic, and cultural capitals. To this end, CERA used information developed through partnerships (social capital) with multiple national and international knowledge producing organisations, such as Tonkin and Taylor, GNS Science, the Natural Hazards Research Platform, Land Information New Zealand, and the National Institute of Water and Atmospheric Research (NIWA) (Rogers, 2011a). These organisations had accrued significant amounts of symbolic capital through decades of scientific work, publications, conference presentations, policy reports, and peer review processes. They also had significant economic capital that could be mobilised to acquire or access the latest forms of internationally legitimised and accepted methodologies, tools, and technologies (Geographic Information Systems, satellites, aerial photography, LIDAR methods¹⁶, information hardware, software, and communication technologies). Further, they had cultural capital that could be applied to enable understanding, interpretation, and communication of the information being produced by technologies such as satellite imagery and GIS software. In sum, the accrual of economic, built, social, cultural, and symbolic capitals provided the necessary resources to create scientifically ‘sound’ knowledge, and thus, produce ‘scientific facts’ (Latour & Woolger, 1986). These ‘facts’ created in accordance with Western European scientific doxa can ‘legitimately’ displace other forms of locally produced facts which are considered to have less legitimacy (Foucault, 1980). In addition, the CER Act 2011 endowed CERA with unlimited political capital (Brookie, 2012; Gall, 2012), which, in combination with the ability to disseminate facts on a large scale through mass media (a combination of cultural, built and technological capitals), endowed CERA and central government with the ability to produce, enforce, and give effect to this newly created central government discourse.

Yaguareté’s narrative raises questions about the methods used to produce the knowledge CERA was using; as he states: ‘*we already had quite a lot of data, and we knew that they [CERA] hadn’t been down here testing at all, Zero testing, so we knew that that hadn’t happened*’. *Yaguareté* highlights the lack of local legitimacy from a community perspective in CERA’s red-zone discourse by referring repeatedly to a perceived lack of ‘testing’; albeit remote sensing (LIDAR) was the main method being used by CERA’s partners due to its effectiveness in assessing large areas of land in very short periods of time (Rogers, 2011a). In doing so, *Yaguareté* reiterates his position as bearer of legitimised local

¹⁶ LIDAR is an acronym that stands for Light Detection and Ranging, a remote sensing method used to assess the surface of the earth (Source: <https://oceanservice.noaa.gov/facts/lidar.html>).

knowledge (*'data'*) from which the local group (together with WDC) produced a discourse that supports engineering solutions to rebuild on the land, embedding stronger foundations. *Yaguareté* also challenges the criteria set by the Crown to establish the red-zones: *'the criteria they had to define the red-zone was rubbish and we didn't meet any of them, not even came close to meeting any of the criteria'*. A statement by *Tatú*, a Pines resident and member of the PKBA, reinforces this point: *'And then the government, in June or July, announced the red-zone which was a shock to everyone. Then all the rumors that Kairaki had sunken and now was below sea-level and all this rubbish came out'*. The dismissal of CERA's criteria as rubbish by participants indicates how both CERA and the PKBA draw on their capital accumulation in the struggle for legitimacy, voice, and position in the dynamic and hierarchically structured field of recovery.

The PKBA sought dialogue with the government in order to challenge the hegemonic CERA narrative and avoid being physically displaced from the land. However, as *Yaguareté* states: *'our first approach was, you know, let's talk, let's have our technical people talk to one another, and in the whole process that never happened, never, ever, ever happened which was incredibly frustrating so we never even got to have a technical discussion, at all, ever'*. Thus, the representatives from PKBA always found themselves excluded (*'never, ever, ever'*) from the knowledge production process that informed the decisions being made about the community's permanent residence on their land. This displacement had significant implications and led to *'real uncertainty'* and produced fear in the communities. As *Yaguareté* stated, uncertainty about the ability to remain on their land was the key concern for local residents because: *'that was the biggest one for people's well-being', 'that was really scary for people'*.

At this stage of the recovery, there were also additional insurance and reinsurance pressures on central government to make prompt decisions based on scientific data that could be deemed authoritative, legitimate and robust in order to provide certainty in a difficult and unstable post-disaster situation. A Greater Christchurch Group/Department of Prime Minister and Cabinet (GCG) report titled *'Whole of Government Report: Lessons from the Canterbury earthquake sequence'* elaborates:

'The Treasury viewed securing reinsurance in the aftermath of the Canterbury earthquake sequence as an immediate priority (...) in Canterbury 66 per cent of the earthquake insurance claims were absorbed by reinsurers. Global reinsurers held concerns about the size of their exposure following the Canterbury earthquakes, and the time it would take to quantify final

liability. This, in turn, prompted concerns that reinsurers would not just increase premiums, but could 'walk away from' the New Zealand market. Without securing reinsurance there would be a considerable impact on the New Zealand insurance industry and, potentially, the wider economy. In response to this risk, the government intervened to reinstate confidence in the New Zealand market and secure reinsurance for the future. (...) Recognising the importance of providing certainty for home owners and insurers as soon as possible to avoid loss of confidence, the government's land-zoning decisions were made using the best possible geotechnical information available at the time (...) the government opted to act quickly with good information, rather than delaying decisions while awaiting perfect information' (Greater Christchurch Group, 2017, pp. 50-70).

The New Zealand government relies on international reinsurers to invest in risk to secure the EQC portfolio and the associated national insurance industry and thus avoid cascading effects on the national economy. Therefore, insurers and reinsurers have significant political capital. In addition, and based on the above elaboration by the GCG (2017), the immediate concern of reinsurers was *'the size of their exposure (...) and the time it would take to quantify liability'*. A local Waimakariri insurance broker deeply immersed in the insurance industry at the time also stated: *'The whole thing about the insurance industry is recovery from the event, look like you've done it properly, keep your brand safe (...) get rid of it as soon as you can, but don't spend too much, and certainly try and mitigate your loss'*. Thus, an argument can be advanced that insurers and reinsurers' actions are driven by their private economic interests. Additionally, as outlined in *Yaguareté's* talk, insurers and reinsurers were enabled by accrual of significant political capital and driven by private economic-based interests and could choose whether or not to continue investing in insuring New Zealand's natural hazard risk. The Government may have felt compelled to implement policies that secured insurers' and reinsurers' permanent positions in the local market in order to bring certainty to New Zealand residents and specially affected and insured home owners. As the GCG reported: *"Without securing reinsurance there would be a considerable impact on the New Zealand insurance industry and, potentially, the wider economy... In response to this risk, the government intervened (...)'*. Amongst these interventions was the zoning process which, to reassure reinsurers, had to be conducted quickly and with legitimacy. Thus, there was a need to conduct a scientifically sound but fast land assessment and *'the government opted to act quickly with good (geotechnical) information'* (Greater Christchurch Group, 2017, p. 70). However, as *Yaguareté's* narrative indicates, the local community expected participation: *'our first approach was, you know, let's talk,*

let's have our technical people talk to one another'. Community participation in knowledge production processes requires major multi-capital investment (e.g., human, organisational, social, cultural, moral) in the form of skilled professionals, special institutional and organisational contexts, as well as significant amounts of time and money to conduct community engagement processes (Alonso et al., 2019; Caine & Mill, 2016; Findlay & Martz, 2014). Therefore, it can be argued that due to their accrual of significant political capital, insurers' and reinsurers' needs and expectations may have outweighed the perceived importance of local residential knowledge and expectations of citizens.

Before the zoning process unfolded, *Yaguareté* and other agents from PKBA and WDC had drawn on cultural, social, symbolic, and political capitals in order to produce the local discourse on land stability that was invested with local legitimacy. This legitimacy was provided by smaller scale political, technical, and cultural apparatuses (local government, local engineers and geo-technical engineers, local architectural designers) that brought a sense of stability to the community. The initial reconstruction of the physical environment in Pines and Kairaki Beaches was also deemed feasible and enabled. However, after the 22nd of February 2011 earthquake, in response to increasing insurance, reinsurance, and housing complexities, central government created CERA (29th of March 2011). Through this actor, which drew on its multi-scalar apparatus comprised of social, cultural, symbolic, and political capitals, central government could make compulsory land-zoning decisions. As participants' talk suggests *'the government (...) had the [political] power'* (*Yaguareté*), and displaced the local geotechnical knowledge and community residents' demands for participation. This generated positive consequences for the insurance industry by reducing uncertainty and by containing the costs and time associated with the production of knowledge that would provide greater certainty for the rebuild process and reduce their *'exposure'* to economic losses. However, displacement of the local needs and discourses also created significant negative consequences for local community well-being: *'that [red-zoning process] was the biggest one for people's well-being'* (*Yaguareté*).

6.4. *Yarará's* narrative

Yarará is a community leader who participated in multiple recovery initiatives. He was one of the earthquake support coordinators hired by the WDC to establish a Recovery Assistance Centre located in Kaiapoi. Additionally, and together with another community member *Yarará* founded the Kaiapoi Residents Association (KRA) very soon after the earthquakes, as a measure to respond to

the emerging communication and engagement gap between government organisations and the community. *Yarará* commented on the recovery process as follows:

'I figured I better dedicate my time to assisting the community rather than working, and I was in the fortunate position where I could afford to do that, financially. So, basically, I then committed to a number of things. One, I became an earthquake support coordinator. Now, I wasn't in the management structure, which of course is ironic, because as people said "why aren't you managing it?" I said "Because I want to be out there with the people on the ground". And I looked after a total of twenty-five families, helping them in their own homes, helping them with the insurer, and helping them with EQC, helping them just understand what was going on and what they could get. And so, that was the earthquake support service which was set up (...) To go back slightly, I'm a commissioned army officer at the age of nineteen, a captain at twenty six, left the army, top IBM marketing person with eighteen months of America's Far East, which is Canada right through South America to Japan. Ran Tade Electronics internationally, and set up a human resources company which I sold out later to a major international company (...) my family lived in Kaiapoi for a long time; my children are fourth generation (...) My grandfather was Mayor of Kaiapoi' (...) "there was this disconnect, you see, if you connect with people from the community you understood it, if you were a bureaucrat in Wellington you didn't understand it" (...) I could talk to cabinet ministers, I could talk to Members of Parliament, I could talk to the Chief Executive of the Council, I could talk to the Mayor. And, so, I was able to feed information of the average [person] to a number of things [recovery associated organisations] (...) I had access to the prime minister, the most significant person in New Zealand, and could say, "you bureaucrats have got it wrong, these are the implications and something was done", so, that's pretty influential (...) I'll say it this way, I had no power, but I probably had a lot more influence than most other people in the Waimakariri' (Yarará).

6.4.1. *Yarará's* metaphysical capital accumulation and influence in the recovery field

Yarará portrays himself as an influential player in the field of recovery: *'I probably had a lot more influence than most other people in the Waimakariri'*. His position as an influential person was also noted by *Caraguatá*, another community member and user of the services provided by the KRA: *'the man who was heading this, Yaguari, he was marvellous, he got this (KRA) underway, and another man called Yarará, and they just helped us so much (...) They would go on to the big meetings in*

town, or with the Council (...) they always seemed to have all the answers'. Yarará also stated: "there was this disconnect, you see, if you connect with people from the community you understood it, if you were a bureaucrat in Wellington you didn't understand it". This last phrase, describes a gap, a 'disconnect' between Wellington based 'bureaucrats' (who were remote) and 'people from the community' (who are 'on the ground' or 'out there') which caused breaks in the flow of information between the local community and central government administration ('your people [bureaucracy] got it wrong', 'you bureaucrats have got it wrong'). Upon identifying this communication and engagement gap, Yarará drew and mobilised different forms of capital (mainly cultural, social, economic, and moral capitals) to link the disconnected agents and gain influence in the field of recovery.

In terms of cultural capital, Yarará had a strong habitual connection to Kaiapoi: '(...) my family lived in Kaiapoi for a long time; my children are fourth generation (...) My grandfather was Mayor of Kaiapoi'. Yarará, also had relationships with Wellington based bureaucrats, as he states towards the end of the initial extract: 'I could talk to cabinet ministers, I could talk to Members of Parliament, I could talk to the Chief Executive of the Council, I could talk to the Mayor'. To be able to talk to cabinet ministers, members of parliament, the Chief of the council, and the Mayor, Yarará cultivated a particular habitus through interactions within his own family ('my grandfather was Mayor of Kaiapoi'), and his praxis in the military and business management fields (commissioned army officer, army captain, and human resource management): 'As I say, [I built my business networks] from my army experience through to my business experience (...) working with chief executives, and very senior people and some major government departments'. (...) I had access to the Prime Minister, the most significant person in New Zealand, and could say, "You bureaucrats have got it wrong, these are the implications and something was done". Yarará, in a similar manner, to Yaguareté', accumulated diverse forms of embodied cultural capital such as a habitus associated with executive management (embodied 'business experience'), and a community habitus ('my family lived in Kaiapoi for a long time; my children are fourth generation'). This accumulation of diverse cultural capital accrued by Yarará was mobilised to help link the community and the central government administration often referred to by the participant as 'bureaucrats', thus Yarará actively built 'linking' social capital (Woolcock, 2001) between community and central government.

Yarará reiterated his role in addressing the communication and engagement gap between community and central government: 'I was the only one with access to [the] Prime Minister,

Ministers of Cabinet, Commissioners from EQC, people walking around the streets (...) they [Kaiapoi residents] knew I wasn't lying if I said "I'll take that up with Gerry Brownlee", they knew I would, or I'll talk to EQC about that, they knew that I would'. In spite of the perceived social and symbolic disconnection between local community and central government, Yarará was able to draw on his community-based and government-based cultural capital to create linking social capital through which he moved across the social and symbolic boundaries connecting both groups. In doing so, Yarará equally relayed a community insider's understandings of the social dynamics in Kaiapoi to central government (through his multiple roles: RAC, KRA, Community Forum), whilst simultaneously feeding back government information to the community. As Caraguatá remarked 'They [Yarará & Yguari] would go onto the big meetings in town, or with the Council, and we would then hear what our next step was'. Yarará framed these actions in terms of privileged access to key stakeholders in government which ultimately invested him with significant levels of symbolic capital (legitimacy), in terms of authority to represent residents (political capital).

In addition, Yarará's political capital was connected to economic and moral capitals. Economic and political capital connections can be discerned in the following statement: *'I figured I better dedicate my time to assisting the community rather than working, and I was in the fortunate position where I could afford to do that, financially'*. By stating that he was able to dedicate time because of his financial position, Yarará suggests that access to financial solvency provides access to free time (time outside of work), thus enabling him to assist with the community recovery process. Furthermore, access to free time can also be tied to political capital, as stated by Bourdieu:

'(...) the concentration of political capital in the hands of a small number of people is something that is prevented with greater difficulty – and thus more likely to happen – the more completely ordinary individuals are divested of the material and cultural instruments necessary for them to participate actively in politics, that is, above all, leisure time and cultural capital' (Bourdieu, 1991, p. 172).

It can therefore be argued that access to economic capital provided Yarará with the necessary free time to participate in the community recovery process and build political capital in the field of recovery.

Yarará's talk also indicates the importance of moral and cultural capitals such as legacy, humanism, and public service in relation to political capital as follows:

'Look, here, the reason why I did everything that I did was because I have a highly attuned sense of public service (...) So, my grandfather through the depression, the nineteen thirties depression, fed without cost, about eighteen families, in Kaiapoi for twelve months who would have starved otherwise. He never got paid for it, but that was what he did, it's just what you do, as a humanist. Some people do it because they are Christians, but I do it as a humanist, that's what you do. So, when this occurred, it was my need to actually, and in one sense, if I hadn't done it, my father who's dead, and my grandfather, and great grandfather would be coming out of the bloody grave and saying "why aren't you supporting the community?". So partly is because we are brought up with a sense of ethics and what's right and what's wrong, and part of that is that if there's a need in the community you try to actually satisfy that need' (Yarará).

Yarará initially mentions his *'highly attuned sense of public service'*, which, in combination with his acquired military habitus, can be tied to a set of political and moral values deeply rooted in hierarchies, paternalism, and pastoral care (Foucault, 1995), which constitute technologies of power through which agents can exercise authority over individuals perceived as unable or incapable of supporting themselves (Dworkin, 2017; Foucault, 2007). This is evident in Yarará's comment *'if there's a need in the community you try to actually satisfy that need'*, and *'I looked after a total of twenty-five families'*. Yarará also distinguishes himself from Christian beliefs by bringing secular humanism (Kurtz, 1999) to the fore as the basis of his moral standpoint. In addition, Yarará's references the 'dead', and past generations: *'my father who's dead, and my grandfather, and great grandfather'* reinforcing the importance of conceptualising legacy as a metaphysical technology of the self¹⁷ (Flora & Flora, 2013; Foucault, 1988; Kenney, 2009; Kenney & Phibbs, 2015), which in this case manifested itself in the voice of his dead ancestors Yarará constructs as ancestral voices that guide his behaviour.

In addition to the underlying moral values which Yarará asserts guide his behaviour, Yarará also endorsed the red-zoning process, through stating:

¹⁷ Cultural technology used by agents to exercise authority and control over their own bodies and souls (self) (Foucault, 1988).

'I think there was a great relief for people here, about the majority of people, the decision to red-zone and that they were going to get paid out was a big one for them (...) the government did a good thing [referring to the red-zone]' (Yarará).

Yarará's economic, social, cultural, and symbolic capitals might have facilitated his position in the hierarchically-structured recovery field. In this regard, his acceptance of and support for the government's dominant discourse on the red-zone (*'the government did a good thing [referring to the red-zone]'*), may have also been an important factor to facilitate his access to the recovery *'bureaucracy'* and helped situate him as an actor with influence in regards to Waimakariri district.

It can therefore be argued that Yarará's moral capital (paternalism, pastoral care, and moral endorsement of the red-zone process), inherited across space and time from past generations, as well as professional interactions and bureaucratic apparatuses (*praxis*) constitute physical and metaphysical technologies of the self (Kenney, 2009) and power (Foucault, 1988, 2007). It is further suggested that given Yarará's pivotal position in the field of recovery, moral capital, operationalised as an embodied technology of the self, could have shaped Yarará's decisions e.g., *'that's what you do'*. Consequently, such moral drivers would have also shaped enactment of his roles within the structure of the RAC, the KRA, and the community forum which potentially included coming to exercise what Bourdieu (2012) defines as a subtle, gentle form of authority over others (*'I looked after', 'you try to actually satisfy that need'*), thus indicating a relation through which moral and political capitals are jointly put into operation, as agents exercise power over an individual and others, driven by particular sets of politico-moral values.

In summary, having access to economic capital provided the free time that enabled Yarará to become an actor in the recovery field. The community and executive management-based cultural capital developed through years of work experience (*'working with chief executives, and very senior people and some major government departments'*) provided the cultural habitual frame for Yarará to establish communication between the community and government groups. These linkages may be interpreted as a form of linking social capital, which in conjunction with his accrued social, cultural, and moral capital enabled Yarará to access political capital and become an influential player in the field of recovery as Caraguatá expressed at the beginning of this section.

6.4.2. Capital accumulation, symbolic violence, and marginalisation of red-zone stayers in the Kaiapoi recovery field

Analysis of *Yarará's* position suggests that he held a privileged position in the recovery phase and that he had accumulated significant economic, cultural, social, symbolic, political, and moral capitals, which he drew on to help maintain his position within the field. Driven by pastoral-based moral values *Yarará's* efforts benefited community members such as *Caraguatá*:

'And, the man who was heading this, Yaguarí, he was marvellous, he got this [KRA] underway, and another man called Yarará, and they just helped us so much (...) They would go onto the big meetings in town, or with the Council, and we would then hear what our next step was. If you weren't involved in those meetings [KRA meetings], I don't think you would have found out a lot. It would have been a lot harder, and that's what those two men [did], they always seemed to have all the answers (...) and out of that group we were able to take a person along with us [to their personal meetings with insurance provider] who had a bit more presence because us, being two females we used to just sit back' (*Caraguatá*).

However, *Caraguatá's* voice also confirms the hierarchical structure of the recovery field noted in *Yarará's* talk that separates those who accrue capitals from those who do not: *'They would go onto the big meetings in town, or with the Council, and we would then hear what our next step was (...) they always seemed to have all the answers'*. *Caraguatá's* talk indicates that some actors remain passive: *'we used to just sit back'*. Actors who had not accrued capitals were not able to actively and directly access decision-making spaces or influential positions in the community, and found themselves marginalised in the recovery field. Marginalised individuals needed to access recovery relevant information through privileged intermediaries (*'they'*) which created challenges in the recovery. These issues are explored further in the following paragraphs.

In heterogeneous communities, centralising the political linkage through the auspices of one or more hierarchically positioned individual community member's may introduce bias into communications between government actors and communities. This can pose an important barrier to community voices being 'heard' by government and local authorities in such contexts. By positioning themselves as links between disconnected groups (central government and community in the case of Kaiapoi), community leaders deliberately or inadvertently advocated specific views from within the community, and even interpreted and communicated messages between groups, based on their own set of values. Such actions may have facilitated both intentional and

unintentional silencing of sectors of the community who may have had differing perspectives on issues (Bowman & West, 2015). The following extract from an interview with *Yacaré* an earthquake support coordinator from the RAC is illustrative:

'I remember going to several meetings, one at the rugby club, one at the golf club, two at the rugby club now that I think of it, and people would just get up and say "this is what should be happening", and not everybody agreed with that, but it didn't matter, they still had an opportunity to say' (Yacaré).

Although structures to have a 'say' were in place, there are few instances or references to actions taken from within those structures in support of dissenting perspectives, such as those of residents who challenged the government's red-zone discourse. Actors such as *Yarará* may also have imposed their own moral standards and cultural views on the rest of the community by using their influential position to establish and define what the issues were (e.g., insurance, EQC, and the crown's offer), potentially biasing the recovery process in Kaiapoi. Such actions may be considered a subtle application of symbolic violence upon others (Bourdieu, 1991, 2012), while enacting roles in the KRA and RAC. An argument can be advanced that agents like *Yarará*, who were leading community meetings and linkages with government decision-making structures, could have helped perpetuate the disempowering process that underlies the social gap between those who had accrued enough capital to access decision-making structures and those who had not, and were thus excluded from decision-making as well as marginalised in the recovery process. This was particularly evident for red-zone stayers as the following paragraph demonstrates.

In contrast to *Yarará*, the talk of *Pindó* and *Karumbé*, two Kaiapoi red-zone stayers who judged the government's discourse and actions as '*wrong*' provide insight into the experiences of those residents in the red-zones who challenged the dominant discourse and as a result were marginalised by insurers, banks, associations, housing market, and welfare providers. They state:

'It was a hard thing to... as I said, you might as well wear a yellow star on your shoulder because that's how it felt, "you were red-zoned, you've got to go", and we said "no, because this is so wrong"' (Pindó).

Pindó's use of the expression 'wear a yellow star on your shoulder' can be interpreted to signal the depth of the marginalisation which she associated with the stigmatisation that the Jewish people

suffered in Germany during the rule of the National Socialist German Workers Party. The outcome of this marginalisation was described in *Karumbé's* talk:

'So, we had organised a rebuild, and as soon as red-zoning, the insurer said 'no, we are not rebuilding', our property instantly went from three hundred and ninety-five thousand dollars it was revalued by the crown and it went to twenty five thousand dollars (...) Because we wanted a rebuild we would need a little bit of finance to rebuild, because we wanted to make some changes, we then went through several banks to see if we could get some finance and explain what our position was (...) and as soon [we mentioned] that we were in a red-zone, they said "oh, wait, I have to go and get the manager" and the manager would come in and say, "look, I'm sorry, you live in a red-zone, we are not going to deal with you", it was almost like we were second or third class citizens (...) and nobody was really giving any assistance [to us as red-zone stayers]' (Karumbé).

Karumbé's talk also refers to being marginalised due to their decision to stay in the red-zone and not take the crown offer by stating that they felt like *'second or third class citizens'*. He also describes the specific ways in which this marginalisation manifested such as a being denied the opportunity to rebuild by their insurance, and denied access to further financing by multiple banks to rebuild their home in the red-zone.

Participants talk indirectly draws attention to the way agents and institutions position themselves in the field to exert power as a result of capital accumulation, and perpetuate underlying differences between those who accrue capitals and those who do not, thus naturalising social inequity in the field of recovery. In the case of Kaiapoi, the inequity compounded by moral tensions between those who agreed and disagreed with the red-zoning process exacerbated the disconnection between decision-makers, decision-making forums and community members residing in the red-zone. This inability for some residents (specifically red-zoned residents who wanted to stay) to be 'heard', or have their voices influence political actions contributed to the systemic belief that 'most' people can't influence politics, as reflected in *Guazuvirá*, an earthquake support coordinator's talk, who commented:

'I think, what I learned, what I noticed was that for a lot of people it was important to be heard, that was about 60% of it, 40% of it actually believed that they could ever influence anything bigger than their own property decision really. So, I'm not sure if I can answer if they felt that they had an influence' (Guazuvirá).

Guazuvirá's views were shared by Ñandubay, a Kaiapoi resident, who added:

'So, there are a lot of huge decisions that a lot of us don't even know about and that are being decided behind closed doors, as they have to because its high power stuff, they [government both central and local] have the overall helicopter view, like this red-zone and this huge amount of redevelopment going on there with various things [red-zone redevelopment, town centre redevelopment]' (Ñandubay).

Compounding the belief that 'most' people can't have influence in the politics of recovery, Yarará also explained how central government disapproved of earthquake support coordinators acting as community advocates:

'(...) after the meeting I had about five or six of them (government officials), and one now is in a very senior position in the regeneration process, he's actually now the chief executive, he came back at me and he said, "you can't ask questions like that, we're funding you, if you ask questions like that you'll lose your funding" (...)They [community service users] needed to believe and have confidence that A) they were being listened to, and B) that somebody could advocate on their behalf, and that advocacy role, was a total 'no, no' as far as MSD [Ministry of Social Development] was concerned' (Yarará).

Government's disapproval of community advocacy, ultimately limited the ability of the KRA and the RAC to actively or officially challenge the red-zoning process without risking losing government support and influence. Instead, as a result of the actions by central government, both organisations focused on providing a 'listening ear', and 'empathy' (cathartic spaces) as this talk from Panambí, a Kaiapoi resident and RAC user describes: *'The Earthquake Support Co-ordination Group was a little friendlier in their approach (than dealing with MSD financial support) but ultimately, they were not able to assist other than providing empathy'.* Aguará Guazú, an earthquake support coordinator also referred to the limited capacity to advocate for people who wanted to stay in the red-zones: *'(...) people really wanted to stay (in the red-zone) and pretty much everyone who needed to go went. In the end you kind of felt you were working for CERA, just getting them all signed off'.* In this last extract, the hierarchical positioning that underpinned the limited capacity earthquake coordinators had to challenge the government's discourse is made evident in the way Aguará Guazú frames the relation between the RAC and CERA: *'you kind of felt you were working for CERA'.*

These reflections illustrate how a recovery environment in which actors with significant accumulation of capitals, such as central government, exert major influence over recovery and can lead to the marginalisation of dissenting voices, such as the voices of the residents who challenged the government's discourse and opted to remain in the red-zones. However, as the next section will show, dissenting residents continued to challenge the government's dominant discourse through other means, such as community artistic interventions in the urban environment.

6.5. Apereá's narrative

Apereá was a Kaiapoi resident and became one of the earthquake support coordinators and was also involved with 'Rabble Rousers' and 'You, Me, We, Us' (YMWU). Rabble Rousers was a community led initiative set up to 'beautify' buildings and demolished sites through community artistic interventions within the urban environment. YMWU was a Waimakariri District Council-led and community-based initiative that emerged after Rabble Rousers. YMWU sought to create the spaces for collective urban artistic interventions as well as community social events in Kaiapoi.

'I grew up in a family, my father painted, his father painted, my sister paints, so I grew up in a very creative household. And, it was just what you did. (...) art is very healing; it's a very therapeutic thing. To involve yourself in anything where you are using your hands as well as your brain, I guess it's the ultimate really isn't it? I mean, any artist will tell you that while they are working on something, the time just flies by. So, I think everyone recognises that and for me it's something I've always liked doing. I've always liked making things look better than they do. And when we had a broken town, I just wanted to mend it, so it's a form of mending, of healing. (...) basically we [Rubble Rousers] were beautifying horrible sites in Kaiapoi (...) we [Rabble Rousers and later You Me We Us] did some fantastic things' (Apereá).

6.5.1. The metaphysics of built capital: Cultural and symbolic dimensions of the built environment in Kaiapoi

Through *Apereá's* talk it is possible to reveal very close connections between the physical nature of built capital and metaphysical capitals on which community well-being is constructed, such as symbolic, social, and cultural capitals.

Apereá's use of the term '*horrible sites*' could refer to aesthetics, as in ugly or sensorially unpleasant, but analysis suggests that the term alludes to the '*horrible*' process of losing physical, cultural, and symbolic points of reference within the community. Such touchstones enable residents to navigate

through locale-specific social and physical spaces that provide a sense of place and serve in some instances to reinforce individual and collective identities. Sense of place is related to symbolic and cultural capitals because it is an essential component in the construction of individual and collective identities (Gieryn, 2000), and a complex process through which people relate via physical and metaphysical connections, such as experience, imagination, memories, and legacies, with the environment they inhabit (Bourdieu, 1986; Dovey; 1992; Flora & Flora, 2013). As an exemplar, similar to the situation with demolitions in Christchurch, numerous buildings were demolished in Kaiapoi after the September earthquake, as *Tamandua*, a local builder stated: *'we had quite a bit of demolition to do'*. As buildings were demolished, the social spaces provided by these buildings (i.e., café's, restaurants) were also shut down due to damage or to the long wait for safety inspections, as the talk of *Curupí*, a Kaiapoi resident and community leader, indicates: *'in the end, there were no cafe's left in Kaiapoi, they were destroyed in the earthquake or they were pulled down a year, eighteen months afterwards'*. Therefore, both during, and as a result of the demolition process, Kaiapoi residents suddenly found themselves not only displaced from decision-making spheres, as discussed in previous sections of this chapter, but also from 'place' (Swaffield, 2013). This sense of displacement is reinforced by the following statement from *Panambí*, a Kaiapoi resident who remarks: *'We knew that our physical environment and our community would change as a result of this disaster'*.

It is not surprising that community identity was also dismantled as the built capital was torn apart, and places replaced by empty spaces, or 'non-places' (Augé, 1995), such as construction and demolition sites. Slowly losing physical places embedded with cultural and therefore symbolic value and meaning, left residents bereft of physical (e.g., landmarks) and metaphysical (e.g., memories, experiences, legacy) points of cultural and spatial reference. Although not directly associated with the demolition process itself, this relation between built capital and cultural and symbolic capitals as points of reference is made evident by a WDC staff member who shared his reflections on seeing people react to reactions to the physical destruction caused by the 4th of September earthquake: *'it was pretty shocking actually, to see the effect on the roads and infrastructure, there were people looking pretty lost'*.

In contrast to this interpretation of what was *'horrible'*, the notion of *'beautifying'* the space may also be interpreted as having an underlying meaning associated with sense of place and identity. The metaphysical nature of perceptions of ugliness and beauty considered in relation to the

damaged built infrastructure in Kaiapoi suggest that built capital may be contemporaneously physical and metaphysical. *Apereá* described her perception of art in the context of the recovery, characterising it as beautiful and having healing properties and asserted that: *'we were beautifying horrible sites in Kaiapoi (...) art is very healing; it's a very therapeutic thing'*.

Analysis of *Apereá's* use of terms such as *'healing'* and *'therapeutic'* as properties of the process of art creation, construct the act of *'beautifying'* as more than an aesthetic process. Her reference to the use of *'your hands as well as your brain'* is key because it is possible to understand the use of both terms; *'hands'* and *'brain'* as a metaphor that refers to two worlds, the world of the tangible, the physical world (hands), and the world of the intangible, of the metaphysical (brain/mind). This metaphor may reflect Western European perspective on the dualism between the physical and social worlds, between objects and subjects (Foucault, 1982). From such a perspective, art can be seen to provide an outlet for working simultaneously with *'hands'* and *'mind/brain'*, with the *'physical'* and *'metaphysical'*. When *Apereá* refers to the therapeutic properties of the artistic process in relation to post-earthquake Kaiapoi, it may be understood that *'beautifying'* spaces, or *'mending'* the town, can be interpreted as an artistic praxis through which residents and the built environment can relate to each other. Both the built environment and the community are being reshaped simultaneously. Equally, personal and collective identities are being formed and reformed across time and space. Collectively, the beautification process enabled the reconfiguration of physical (i.e., sculptures, murals, gardens) and metaphysical (i.e., personal and shared memories, identity, values). The various initiatives re-created points of reference for residents to reset and reshape their sense of place, as well as their positionality within it. *Panambí*, a Kaiapoi resident who was deeply involved with YMWU, illustrates:

'One example of this [the work done by YMWU] was when the Christchurch Stands Tall Project came along; I saw an opportunity for the community to work together on this (...) I sent templates to residents, schools, community groups, etc., for people to create heart designs that the Kaiapoi Creative Arts group, local artists and the Kaiapoi High School students could then transpose onto "Patchina – From Kaiapoi With Love" giraffe (...) now [Patchina] Stands Tall in our main street of Kaiapoi, a reminder of our community coming together (...) The joy came, like Patchina, when contributors could search out their input to the finished project'(Panambí).

The case of Patchina (Figure 20), which was a collective art project developed in Kaiapoi by YMWU, demonstrates that the artistic process can be more than just an aesthetic creation process. *Panambi* describes a process by which she decentralised the artistic intervention by sending templates across the community so that all residents could participate: *'I sent templates to residents, schools, community groups, etc., for people to create heart designs'*. Decentralising the process enabled residents to experience *'healing'* and *'mending'* through the creation of miniscule works of art, heart designs, that were patched onto Patchina at a later date.



Figure 20. Patchina Standing Tall in Kaiapoi. (Image retrieved from: <https://katzmum.wordpress.com/2015/02/13/christchurch-stands-tall/>).

Patchina subsequently became an intricate piece of art made up of physical (i.e., paper, paint, brushes, scissors, the sculpture) and metaphysical (i.e., memories, experiences, relationships) elements interacting with each other. It embodied a collective memory simultaneously reminding residents of what had transpired, and acted as a physical and metaphysical reference point for residents to rebuild their sense of community. Put differently, the process through which Patchina came to be, unified the dualism of the physical and metaphysical, and residents were able to see themselves reflected in the finished artwork. As *Panambi's* talk indicates: *'The joy came, like Patchina, when contributors could search out their input to the finished project'*. Patchina can be thought of as the physical manifestation of permeable boundaries between built, cultural, and symbolic capitals that enhance the collective sense of place and identity.

6.5.2. The politics of built capital: power struggles between Kaiapoi residents and central government over the red-zoned built environment

Through its connections to cultural and symbolic capitals, such as sense of place and collective identity, built capital has a deeply embedded political dimension because exercising power over the built environment inexorably occurs in conjunction with power over collective identities. Scholars have long noted this relationship through debates around the politics of place (e.g., Keith & Pile, 1993; Kemmis, 1990; Madden, 2017; Rose, 1994; Yung et al., 2003). In the Waimakariri recovery context, *Apereá's* talk and reference to The Red Letterbox Sculpture may illustrate the power struggle between residents and CERA over built capital elements located within the Crown-owned red-zone land. She states:

'So, the government moves in and red-zones the land, and takes over, and they force people off the land, whether they want to go or not, although that is not true, some people stayed, but they [government] took control (...) I got permission from CERA, the Canterbury Earthquake Recovery Authority, and we went into the red-zone over there which has now been cleared, and we took all the letter boxes. I got permission from them; I had the documents! The first to go into the red-zone and steal stuff! The Police came along and wanted to know what we were doing, and "Well... there you are" [as in serving them the CERA authorisation]. And we took a whole lot of mail boxes and stored them in Y's garage, because her husband also helped us pick them all up, and then took them home, and hosed them down. And, they became the sculpture, the red-letter box sculpture' (Apereá).

The case of The Red Letterbox Sculpture (Figure 21) described above evidences the contested nature that remained tied to the built capital within the red-zone and all its metaphysical (cultural and symbolic) and political associations. The allusion to *'getting permission'* illustrates the hierarchical management role CERA was enacting at the time. Residents needed to seek explicit approval from CERA to develop activities within the red-zone because most of the red-zone had been bought by the Crown. Furthermore, in combination with the use of terms such as *'we went into'* and *'over there'*, a sense of containment and territorial exclusion may be discerned from such phrasing. That is, there was a boundary (physical and metaphysical) that divided the space into inside and outside. Inside meant a red-zone land owned and administered now by a powerful, capital rich-government, monitored by the police as part of a surveillance apparatus (Foucault, 2007), and from where residents were now excluded (outside).



Figure 21. The red letter box. Source: <https://www.flickr.com/photos/philbraithwaitenz/10842908244>.

In this context of control, surveillance and exclusion, *Apereá* and others faced the authority and ‘stole’ stuff from the red-zone. However, as *Apereá* had permission and the ‘documents’ which embodied such authorisation from CERA, further consideration is necessary to understand the use of the expression ‘to steal’. One interpretation is that residents were authorised to retrieve letter boxes, built capital elements with no meaning or value for CERA. Yet, for residents, these objects were loaded with symbolic meaning and value because they embodied what was left of their memories and experiences in that particular place. Therefore, it can be argued that whilst CERA authorised residents to retrieve certain objects, they were retrieving something else, something for which they did not have an authorisation. They were retrieving without authorisation, ‘stealing’, their living memories and experiences embodied in what was left (letterboxes) of the built capital that had and continued to shape their lives and identities.

In synthesis, an argument is advanced that built capital, while encompassing pipes, roads, and buildings, is related to metaphysical factors that can be understood as capitals that provide a sense of place and identity to communities. Through the relationship with metaphysical elements, such as sense of place and identity, built capital can also have political importance. Exercising power over the built environment inexorably occurs in conjunction with the exercising of power over elements that compose collective identities, as illustrated by the Red Letterbox Sculpture. Thus, by ‘taking control’ of the red-zone and excluding residents from it, central government also excluded residents from the collective physical and metaphysical points of reference that enable people to construct their collective identity and sense of place. This physical and metaphysical displacement and exclusion from place significantly hindered community well-being. However, participants’ narratives of Patchina and The Red Letterbox Sculpture illustrate how community artistic interventions in the urban environment can help residents rebuild their identity through artistic processes that implicitly acknowledge the metaphysical associations of built capital and thus foster community well-being.

6.6. Practical implications of capital accumulation, subtle domination, and symbolic violence for recovery practice in an increasingly insurance dependant New Zealand economy

This chapter highlights that the recovery phase encompasses metaphysical as well as physical elements, and that therefore metaphysical capitals such as cultural, social, symbolic, political, and moral capitals may be drawn on by actors to facilitate the recovery process. This insight can inform the ways in which community building statutory instruments, such as the National Disaster Resilience Strategy (NDRS) that came into effect in April 2019, are operationalised. For instance, although the NDRS does not include political and moral capitals explicitly in its text, it does emphasise the importance of political, social, and moral capital elements such as social inclusion, participation, and compassionate recovery processes after disasters (MCDM, 2019, p. 29).

Operationalising a recovery process in the terms described by the NDRS (inclusive, participatory, reflective, rapid, and compassionate) is not a simple task. As an exemplar, this chapter describes the ways in which normalised accumulation of economic, cultural, social, symbolic, political, and moral capitals in the hands of a few agents can produce a form of participation or inclusion in the recovery planning and decision-making process. However, participation is underpinned by subtle forms of domination exercised through symbolic violence as the analysis of *Yarará’s* narrative revealed. As a result, community voices that actively dissent and challenge dominant discourses may find themselves marginalised from the recovery decision-making field. Such forms of participation and

inclusion/exclusion may ultimately hinder community well-being and reproduce or exacerbate pre-existing socio-economic fragmentation and inequalities, and therefore reproduce social vulnerability. Although the exercise of symbolic violence and domination based on capital accumulation may not be representative of recovery processes in general, the importance of understanding that participation and inclusion can be hindered by unseen and metaphysical capitals deeply entrenched in the community has been clearly highlighted.

Additionally, this analysis suggests that economic and political capital accumulation can pose barriers for participatory recovery processes such as recommended in the NDRS. As an exemplar, during recovery in the Waimakariri district, the insurance and reinsurance sector accumulated significant political capital because the New Zealand government depended strongly on economic investment by the insurance sector in the Christchurch rebuild. Put another way, the government was reliant on mobilisation of the insurance sector's economic capital to avoid severe impacts on the insurance market and the wider national economy. Due to the significant accumulation of political capital, the insurance and reinsurance sector was able to influence the Government agenda that privileged fast decisions based on science to provide certainty to reinsurers and reduce their financial exposure as well as certainty for Canterbury affected home-owners. In contrast, the Kairaki and Pines Beach communities sought to engage in the land assessment knowledge production and land-zoning decision-making processes to address local needs. However, engaging with communities in this manner would have slowed the recovery process down and may have delayed insurance settlements. Doing so could have also contributed to sustained uncertainty, compounded perceptions of the risky prospect New Zealand poses for reinsurers and the insurance industry, and thus contributed significant economic problems in the region and country. As a result, the aspirations and needs of local communities with less economic and political capital were marginalised.

This perspective becomes particular relevant in a national context in which there is reliance on international reinsurers. EQC's 2017-2018 Annual Review of the National Disaster Fund (NDF) indicates that available financial capital has been depleted from six billion and one hundred million New Zealand dollars (pre-Canterbury earthquakes) to one hundred and eighty-one million New Zealand dollars. Because of this depletion of the NDF, reinsurance had to be purchased by EQC for a value of five billion and five hundred and fifty million New Zealand dollars (EQC, 2018a, c). The ongoing reliance on the insurance sector has reinforced the insurers' ongoing accrual of political

capital, which will not only exceed that of local communities, but may also exceed the government's financial asset base creating significant barriers to developing the participatory, inclusive, reflective, and compassionate recovery processes described in the NDRS.

6.7. Conclusion

This chapter illustrates the highly complex and interrelated, multi-scalar characteristics that underpin the field of recovery. Results from the content analysis highlight the fact that 'people' are at the centre of the overall recovery. Cluster analysis results indicate that human capital is underpinned by multiple types of metaphysical capital, including social, cultural, and political capitals. Additionally, a network analysis of capital relations found in participants talk also underscores the importance of considering all capitals as interdependent elements. Qualitative results from the narrative analysis provide depth to these findings and offer new insights such as highlighting the role that other metaphysical forms of capital, such as moral and symbolic capitals, hold in relation to all other forms of capital. Exemplars of the how metaphysical forms of capital were mobilised will be presented through *Yaguareté's*, *Panambi's* and *Apereá's* narratives.

Yaguareté's story provides insights into how this participant was able to draw on and mobilise cultural, social, political, and symbolic forms of capital including bridging capital to situate himself in a central position¹⁸ in the Pines and Kairaki field of recovery. In this position, *Yaguareté* enabled the bridging of different social groups. These groups included local government, geotechnical engineers, and local residents who constructed a local discourse which brought certainty that the state of the land was appropriate and there were suitable engineering solutions for rebuilding local housing stock in the Pines and Kairaki Beach areas. Additionally, *Yaguareté's* narrative also sheds light on how the locally constructed discourse about the state of the land was forcefully displaced from the recovery field by central government discourses following the red-zoning process. This discourse was underpinned by central governments greater accumulation and mobilisation of cultural, social, political, and symbolic capitals.

¹⁸ Central positions are closely related to bridging social capital (Putnam, 2000), and refer to a dynamic position in the field from where a player can pivot, permeate, and bridge across the social and symbolic boundaries of different social groups established through membership, identity, and habitus. (Lamont & Molnar, 2002).

Yarará's narrative outlines the ways economic, cultural, social, political, symbolic and moral capitals may be drawn on to position himself as a link¹⁹ between central government and local communities in order to address communication gaps between the two groups. Through linking these actors and addressing the communication gap, *Yarará* was able to gain significant social and political influence through drawing on moral capital to generate positive effects for residents who willingly or through subtle pressure from central government agreed with the red-zoning of their land. Additionally, *Yarará's* way of exercising influence led to the marginalisation of community members who expressed their disagreement with the dominant red-zone discourse. These dissidents found other ways of expressing their perspective including through community urban art described by *Apereá*.

Apereá's story showcases the metaphysical underpinnings such as sense of place and collective identities that relate built capital with cultural, symbolic, and political forms of capital. Additionally, *Apereá's* talk highlights the ways art may be applied to re-establish broken connections between the aforementioned forms of capital through community urban artistic interventions. These connections will be illustrated using two community art projects as examples; Patchina, a giraffe sculpture and the Red Letter Box Sculpture.

Overall results highlight the relevance that capitals such as economic symbolic, cultural, social, political and moral capitals have in providing actors in the recovery field such as *Yaguareté*, *Yarará*, and international reinsurers with the necessary agency to acquire influential positions in the field of recovery, and shape resources distribution across communities. Additionally, the complex and unfinished assemblage of physical capitals, such as built capital and metaphysical capitals including cultural, social, political, and symbolic capitals required by recovery actors to maintain their positions, illustrates that recovery is more than just rebuilding pipes and roads. Disaster recovery constitutes a dynamic process of rebuilding cultural identities making the recovery process highly political.

Results can inform recovery practice by highlighting that the overly simplified intentions established in documents such as the National Disaster Resilience Strategy are ultimately underpinned by multi-scalar and complex economic and political interrelations that can hinder well intentioned efforts to construct equitable and sustainable recovery pathways. Furthermore, the following chapter will also

¹⁹ Linking positions are closely related to linking social capital (World Bank, 2000; Woolcock, 2001), and refer to a position in the field from where a player can vertically link players positioned hierarchically in the field (See: Hawkins & Maurer, 2010; Poortinga, 2012).

highlight how these equitable and sustainable recovery pathways can also span well beyond the initial six years post-disaster.

7.1. Introduction

This chapter showcases research results, which indicate that mental fatigue is still present amongst local emergency responders and the working poor in the Waimakariri and is affecting local human and social capitals. Research findings also illustrate how different capitals such as cultural, social, moral, symbolic, and economic capitals were drawn on and mobilised by research participants to respond to the emerging challenges associated with mental fatigue. The chapter discussion is informed by a content analysis of the interviews and a separate narrative synthesis of research participants' talk. Special attention is paid to the narratives of three key informants from the Waimakariri; *Kururú*, *Chajá*, and *Tamandua*. Analysis of the ways in which varied forms of capital were collectively accrued, and mobilised to support the regeneration process, has also drawn attention to the difficulty of situating individual capitals in stand-alone conceptual silos, and highlighted the complexity underpinning the capitals' framework. Overall, this chapter highlights a third post-earthquake phase characterised by the re-development of town center and red-zone land, as well as continued efforts to revitalize the local economy. Additionally, this third stage is also characterized by the cumulative levels of stress and emotional exhaustion in some sectors of the community from continuous exposure to emergency situations and socio-economic deprivation. The next section presents the findings of the content analysis.

7.2. People and regeneration in the 'Waimak'

Consistent with the figures presented in previous chapters, Figure 22 shows the total number of references drawn from all 51 interviews with Kaiapoi and Pines and Kairaki Beaches residents that have been coded with positive (green) or negative (red) capital associations during the recovery phase.

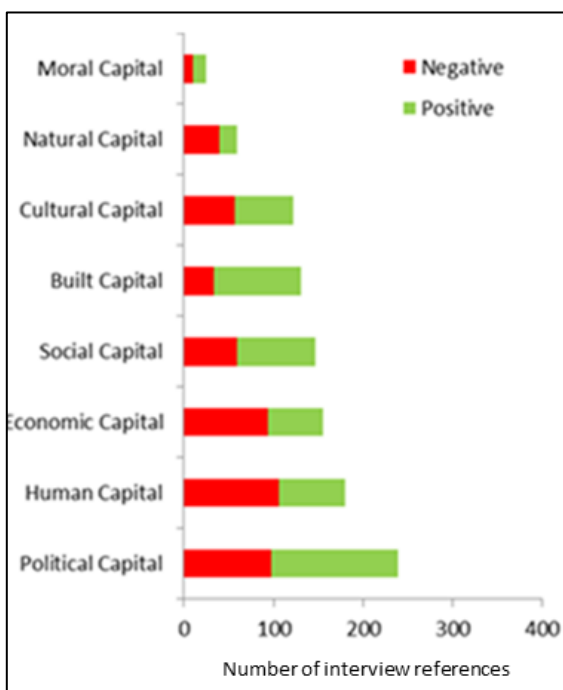


Figure 22. Graph synthesising total amount of participants talk references coded as positive or negative capital elements across all the narratives associated with the regeneration stage in the Waimakariri.

This figure (Figure 22) highlights the relative importance that political, human, economic, social, built and cultural capitals have during this regenerative stage. A few characteristics deserve highlighting. Firstly, the increase in positive political capital references implies that participants viewed the community engagement processes led by Waimakariri District Council (WDC) and developers as positive. Engagements with the community were designed to facilitate planning the regeneration of the red-zone land and Kaiapoi's town centre. This process is described by *Tamandua*, a local resident and developer from Kaiapoi, as follows: '(...) after the earthquake they had a few meetings and invited people to be part of a revitalisation committee of the area, and I was one of probably hundreds of people that had a bit of input into all that, which was really, really good'. Secondly, Figure 22 also highlights a marked increase in negative human capital references which are likely associated with high levels of stress and other mental health issues across the community.

Kururú, an emergency responder from the Waimakariri District commented on this issue: ‘*I think we [North Canterbury/Waimakariri District] have very high mental health issues in the community, and I think we have it on our staff too, they are just fatigued about emergencies (...) The biggest indicator of all this [mental health issues in the community] is suicide rates, they are horrendous here*’. And thirdly, Figure 22 also shows a marked increase in the number of negative references to economic capital which tended to be associated with economic and employment movement away from the Waimakariri District (economic leakage). As *Tamandua* explained: ‘*a lot of the people are working in town [Christchurch City] so they don't actually spend a lot of their spending [earnings] here [Kaiapoi]*’. The following paragraph illustrates how these references to economic and human capital were also underpinned by references to other forms of capital.

Figure 23 shows a dendrogram which illustrates the proximity between regeneration capital nodes based on the number of words (and stemmed words) each code has in common with other terms.

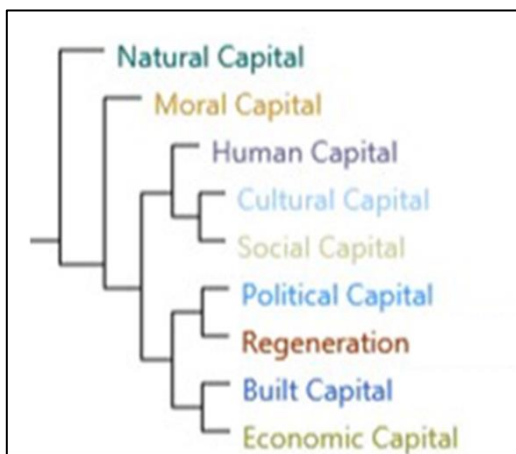


Figure 23. Regeneration and capitals cluster analysis dendrogram synthesising all 51 participants’ talks.

Figure 23 illustrates how during the regeneration phase political, built, and economic capitals have a close relation with each other, and form a cluster of capitals that are underpinned by a second cluster of human, cultural, and social capitals. These capital interrelations are briefly illustrated in the interview talk of *Yaguarundí*, a staff member of a WDC associated economic development agency. He remarks: ‘*And I think that this developer Tamandua really gets that sense of place (...) he was born in Kaiapoi, his family were well known in Kaiapoi (...) He had the knowledge of the local area (...) it's his vision, it's his town, we are all onboard with it, and we can support that*’. This extract suggests that if developers have associations with Kaiapoi’s earthquake affected town’s centre that

are underpinned by cultural capital (*'sense of place'*, *'knowledge of local area'*), social capital (*'family'*), and symbolic and political capital (*'well known'*, *'support'*), then their projects and investments (built and economic capital) are likely to be well-received.

Figure 24 also illustrates capital interrelations from a network perspective. The figure summarises capital interrelations found in all participants' talk associated with the regeneration phase in the Waimakariri. The black dots (nodes) in the network image represent capitals, and the lines (ties) connecting the dots represent relations between the capitals (participants' talk. The colors and width of the lines indicate strength (frequency) of capital relations where thick red lines show the strongest ties, yellow and middle thickness show average strength, and green thin lines indicate weak ties.

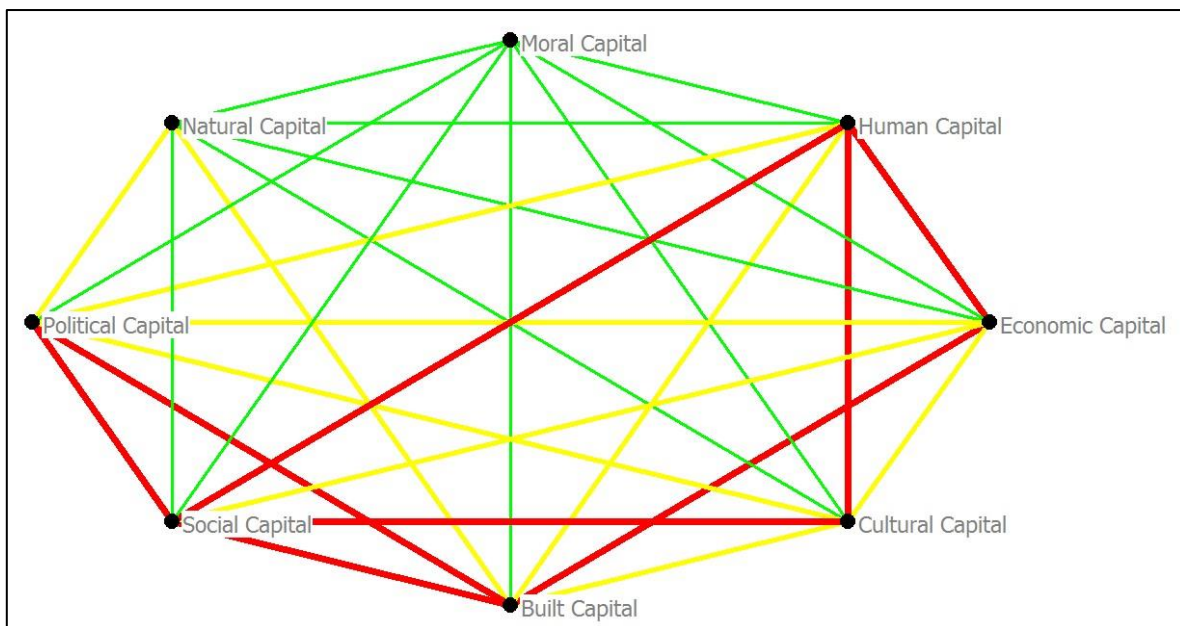


Figure 24. Capitals network image synthesising all capital interrelations coded across all the 51 participants talks associated with regeneration in the Waimakariri.

This network figure (Figure 24), reflects the agglomerated result of participants' views about the strongest ties between capitals. As seen in the previous chapters, these networks can vary over time and also vary across different participants' narratives. Nonetheless, some capitals, such as cultural, social, human, political, built, and economic capitals, have stronger ties, and ultimately all capitals are connected and interrelated in participants' narratives.

Figure 25 shows a word cloud (word frequency) synthesising the content of all capital codes associated with the regeneration phase in Kaiapoi, as well as Pines and Kairaki Beaches.



Figure 25. Word cloud synthesising word frequency across all 51 participants’ talk associated with the regeneration process in the Waimakariri.

This figure (Figure 25) reiterates the findings in earlier chapters, namely that ‘people’ are at the centre of all post-earthquake stages. Similarly to Figure 15, and Figure 19, other words such as ‘think’, ‘things’, and ‘really’ also frequently appeared but were not the focus of content analysis because disconnected from their narrative context they become vague linguistic expressions. However, in contrast to the previous discussions on the earthquake response and recovery phases, Figure 25 shows that ‘community’, ‘councils’, ‘development’, ‘buildings’, ‘housing’, ‘business’, and ‘Kaiapoi’ constitute key themes in regeneration. Therefore, it can be argued that this stage of rebuilding local resilience is associated with a different set of issues; the town centre redevelopment plans for example are highlighted. This focus contrasts the key issues namely the emergency response, provision of services and the red-zoning process identified in the two previous phases (response and recovery). Figure 25 is consistent with the results presented in Figure 22, Figure 23, and Figure 24, and this suggests that issues such as the town centre redevelopment and the compounded pressure on local residents’ mental health merge all forms of capital into a complex network of relations that may be characterised as the regeneration experience. Capital interrelations will be further explored through the analysis of *Kururú’s*, *Chajá’s*, and *Tamandua’s* narratives in the following section.

7.3. Kururú's narrative

Seven years after the earthquakes, social and mental health issues such as increased suicide rates, increased levels of personal stress, and a high degree of social isolation had not decreased in the Waimakariri District (Social Services Waimakariri, 2016, 2017, 2018). The narrative of *Kururú*, a police officer, was presented in Chapter 5, and provides an emergency responder's perspective on the aftermath of the earthquake. In the following interview extract he comments on the psychosocial stress that he and other police officers experienced:

(...) the consequences of the earthquakes started in September, but they haven't finished, it's two thousand and seventeen and you still see it on people's faces. You have this conversation about earthquakes with my Canterbury police staff that were here in February and they'll flip back and they are going to relive it, I do that. And about three months after the February event I had to go and see a psych and say "yup, you need to help me to debrief this". My issue was that I went through the "what if", "why didn't you do more" scenario, so, I had an internal blame system going, "you could have saved everybody", and apparently, it's a very common trait in emergency responders. Even today it wouldn't take me very long to beat myself up about "why didn't you do this?!", so, I have to be aware of that (...) a number of staff, even as recent as three months ago have psychologically gone off the cliff, all they've seen. So, particularly in the Waimak here, as an example, to me watching them, they've been in the middle, they've had their own event, Christchurch event, and Hurunui Kaikōura event. So they [police staff] are all a little bit fatigued. I think we [North Canterbury/Waimakariri District] have very high mental health issues in the community, and I think we have it with our staff too, they are just fatigued about emergencies (...) The biggest indicator of all this is suicide rates, they are horrendous here, more people commit suicide in the rural area. One officer in one of the smaller stations just north of here has been to fourteen successful suicide crashes in eleven months, one guy. How much death have our staff seen in the past ten years?! It's horrendous, this concerns me too' (Kururú).

7.3.1. Declining human capital in the Waimakariri's regeneration field: Emergency responders' stress and physical and mental fatigue

Analysis of *Kururú's* talk highlights how the emergency responders and the broader community's human capital is declining seven years after the earthquakes and is manifested as increased stress, physical and mental fatigue, and suicide rates .

Kururú's use of the term '*fatigue*' indicates a lack of energy and being overtired. References to individuals as '*psychologically gone off the cliff*' also speaks of an extreme deterioration in the state of mind of some emergency responders (police staff in this case) thus adding a metaphysical aspect to the '*fatigue*' experienced. Additionally, the use of expressions such as '*you still see it on people's faces*' can be interpreted to signal that although partly metaphysical, the mental and physical exhaustion are such that they become physically visible as in '*you still see it*'. The following paragraphs will provide important insights to these compounding relations between physical and metaphysical capitals which underpin police emergency responders emotional fatigue such as: decline in human capital (emotional stress and fatigue), strong sense of pastoral responsibility over the community (moral capital), frequent exposure to life threatening and life loss experiences (cultural capital), and dealing with the personal consequences of the earthquake as insurance and home repairs and/or rebuilds (economic and built capitals).

Chapters 5 and 6 demonstrated how personal and/or organisational accumulations of economic, cultural, built, and social capital, accessed through professional roles, such as the WDC or the KRA, can create a sense of pastoral legitimacy (symbolic capital) for Council staff and community leaders over those who share a habitus but have less capital. This sense of pastoral responsibility is strongly evidenced in *Kururú's* interview where it created a significant amount of mental pressure and emotional stress manifested in his comments as a responsibility to '*do more*' to save '*everybody*'. This stress did not dissipate for seven years after the event because *Kururú* commented that he continues to experience this emotional pressure today: '*Even today it wouldn't take me very long to beat myself up about 'why didn't you do this?!', so, I have to be aware of that*'. This particular phrase indicates that the emotional pressure also relates to a narrative of self-blame, a common guilt-generating behavior characteristic of post-traumatic stress disorder which often negatively affects first responders' well-being (Hodgkinson & Stewart, 2006; Meyer et al., 2012; Regambal et al., 2015; Skeffington et al., 2016; Walker, 1990). Additionally, the frequent exposure to extreme events and loss of life that underlie the emergency responders' habitus is also contributing to an

exacerbated sense of physical and mental fatigue which contributes to erode elements of human capital including mental health. This will be explored further.

Kururú's talk links expression such as *'psychologically gone off the cliff'* and *'fourteen successful suicide crashes in eleven months, one guy'*, with other expression such as *'all they've seen'* *'How much death have our staff seen in the past ten years?!'*. These narrative connections illustrate how emotional fatigue can be compounded by the frequency with which first responders experience emergency situations. However, in addition to the frequent suicides involving motor vehicles, *Kururú* also refers to numerous other 'events' such as *'their own event, Christchurch event, and Hurunui Kaikōura event'* which increase the overall frequency of exposure to emergencies and thus the emotional and physical fatigue. This multiplicity of events will be unpacked in the following paragraph.

From these multiple events, the 22nd of February Christchurch earthquake stands out as a particularly significant event because, as discussed in Chapter 4, Waimakariri police were part of the response force that rescued victims and removed the deceased from the collapsed buildings of Christchurch's CBD, with the majority (115) of the 185 fatalities in the collapsed CTV building, as *Kururú* remarks:

'(...) the OC [Operations Commander] of Kaiapoi at the time was in charge of the CTV building for the first three hours after its collapse. So, we had all our staff in there (...) And the mental part of it was strange for me too, I ended up working there [in the Christchurch CBD and at the CTV building] for a long, long time. But you drive out of a very small part of Christchurch and people were washing their cars, and then you get to the Waimak and people were mowing their lawns as if it was an ordinary day, it was very difficult to manage that psychologically' (*Kururú*).

Kururú's talk indicates that the collapse of the CTV building in Christchurch CBD stood in stark contrast to everyday activities carried out by Cantabrians outside of the emergency situation. Prolonged exposure to this situation (*'I ended up working there for a long, long time'*) had significant relevance for him and possibly other Waimakariri police staff in that it resulted in emotional pressure which was *'difficult to manage'*. However, the compounding factors which added to the fatigue were also associated with Waimakariri police staff's *'own event'*, as *Kururú's* interview talk indicates: *'Some of them [Police staff responding to the call after the September event] we had to turn around and say "go home, because your house is broken", which was even worst in the February*

event, because a lot of our staff live in Christchurch'. The importance of this last phrase and *'their own event'* will need to be explored further.

Kururú's use of the expression *'their own event'* together with the Christchurch and Hurunui earthquakes (*'to me watching them [Waimakariri police staff], they've been in the middle, their own event, Christchurch event, and Hurunui Kaikōura event'*) highlights a distinction in how events are constructed by emergency responders. The distinction between their own event and the Christchurch, and Hurunui Kaikōura events can be interpreted to indicate that there is a distinction between an event that is *'their own'*, i.e., a personal event, and events that are not personal (Christchurch and Hurunui Kaikōura). This distinction may refer to the boundary between emergency responders professional and personal relation to the impacts of these events. However, in addition, *Kururú* also distinguishes his own position in reference to *'them'* (police emergency responders) by hierarchically positioning himself as an observer (*'to me watching them'*). Furthermore, he also positions the police staff in the intersection between different fields, such as the field of their own event, the field of the Christchurch event, and the field of the Hurunui Kaikōura events. The intersection between fields could also be interpreted as being underpinned by geographical intersections (Christchurch, Hurunui, Kaikōura), as well as by social intersections between individual scales (*'their own event'*) and collective scales (*'Christchurch event, and Hurunui Kaikōura event'*). In this intersection between multiple fields, geographical and social scales, police responders have to perform their professional duties in relation to events that appear as impersonal, external and large scale events (Christchurch and Hurunui Kaikōura). However, in addition to this, there is a personal and perhaps more localised relation to the event which shapes a different reaction with personal impacts (*'their own event'*). Emergency responders had to face the compounding consequences of the personal impacts of the Canterbury earthquake sequence (e.g., damaged house, insurance, EQC, rebuild, and/or repairs, emotional distress, economic pressure), in addition to having to perform their professional duties which expose them to the impacts that the consecutive Canterbury and Hurunui earthquakes had on other people's lives. Occupying this intersection between fields exacerbated and compounded the extreme emotional and physical fatigue experienced by police officers and eroded human capital elements such as mental health in the field of regeneration: *'a number of staff, even as recent as three months ago have psychologically gone off the cliff, all they've seen (...) So they [police staff] are all a little bit fatigued'*.

Kururú's talk also indicates that mental health issues such as the mental fatigue experienced by police responders are present in the entire community: *'I think we have very high mental health issues in the community, and I think we have it on our staff too (...) The biggest indicator of all this is suicide rates, they are horrendous here'*. The community wide impacts of stress and anxiety in the field of regeneration will be explored below.

7.3.2. Declining human capital in the regeneration field: Depression, suicide, and the marginalisation of social and mental health service providers

In this last extract of the participant's talk, *'suicide rates'* are presented as *'horrendous'* and the *'biggest indicator'* of the mental health issues present in the community affecting the field of regeneration. The use of *'horrendous'* can be interpreted as inferring the high frequency with which local individuals attempt to take their own lives in the District because it is associated with the aforementioned term *'suicide rates'* an expression that refers to incidence and thus linked to frequency. This association is strengthened by the participant's following observations: *'more people commit suicide in the rural area', 'fourteen successful suicide crashes in eleven months'*.

The high suicide rates are also noted by the Office of the Chief Coroner of New Zealand which report that Canterbury appears to be the region with the highest suicide rate in New Zealand (92 suicides in the 2017/2018 period), with a marked increase in these rates over the past six years (Office of the Chief Coroner of New Zealand, 2018a). Additionally, although males are over-represented in these statistics, women's suicide has increased 44% between 2016/2017 and 2017/2018 (Office of the Chief Coroner of New Zealand, 2018b). Later in the interview *Kururú* came back to the suicide rates and made some general observations:

'there are multiple things building up to that suicide rate, there's the ongoing threat of a shake, the drought, the prices, farmers are under pressure, (...) Large number of females attempting suicide, some of them young, this continues and continues. And I wonder, because some of them would have been ten years old when the [earthquake] sequence started in two thousand and ten' (Kururú).

Kururú links the increased number of suicides to two particular groups in the community: farmers and young women (*'farmers are under [economic] pressure', 'large number of females (...) some of them young'*). And, although he links the pressure, particularly for younger women, to their experience of the 2010/11 Canterbury earthquake sequence as young children (*'some of them*

would have been ten year old'), he also indicates that that *'there are multiple things building up to that suicide rate'* which suggests that there is not a single cause of the increased suicide rates, but rather, several compounding causes such as economic pressure, and frequency of occurrence of extreme events such as earthquakes and droughts, these will be presented in the following paragraphs.

Kururú's talk underscores the interaction of earthquake specific stressors and other contextual stressors by linking the *'ongoing threat of a shake'* with the occurrence of a drought, and prices, immediately followed by a direct reference to farmers (*'farmers are under pressure'*). Farming activities in the Waimakariri district have increasingly turned towards dairying, (WDC, 2013), which in turn depends heavily on national and international markets and fresh water availability. *Kururú's* talk of *'prices'* in association with farmers may also have to do with the decrease in prices received by dairy farmers and the increase in dairy industry costs associated with higher prices of animal feed, fuel, and freights (Statistic New Zealand, 2018b). The reference to prices may also be aligned with the impacts of droughts, which can be economically devastating for farmers. In addition, it may also be inferred that prices could be associated with issues associated with the costs of living, which increased in the ten years after the initial earthquake. Using the Reserve Bank of New Zealand's online inflation calculator²⁰ it is possible to establish that between the first quarter of 2010 (pre-earthquake) and the first quarter of 2019 (post-earthquake) food prices increased 11.1%, housing prices increased 71.1%, transport prices rose 3.7%, and clothing prices dropped 4%, whereas wages increased 28%.

Although, these numbers are New Zealand-wide, not Canterbury specific, they do illustrate a general trend which suggests that the term *'prices'* may refer to more than just the increase of farming production costs and decrease in farming profitability. Additionally, the Financial Stability Report (2019) produced by the Reserve Bank of New Zealand indicates that some dairy farms are currently over indebted, and thus have an increased risk of defaulting on loans when facing unexpected events such as the price fluctuations and natural hazards such as the droughts and earthquakes mentioned by *Kururú*. In regards to natural hazards, droughts in particular have contributed to increased production costs and in some instances, decreased productivity (Frame,

²⁰ <https://www.rbnz.govt.nz/monetary-policy/inflation-calculator>

2018). These outcomes are due to the growing frequency of droughts evidenced in the New Zealand Drought Index²¹ which indicates that droughts are increasing in severity as well as frequency.

Analysis of *Kururú's* talk has indicated that these compounding socio-economic trends (prices, extreme events such as the threat of another quake and/or drought, debt) are placing '*farmers (...) under pressure*' and thus increasing mental health issues in this group. However, farmers were not the only individuals to experience ill health as one rural resident commented: '*(...) the depression and suicide rate in the rural communities is getting huge. I have neighbors all around me that I think are just on the very edge*' (*Tacurú*). *Kururú*, also noted that mental health issues were not restricted to farmers but evident across the community; and his perspective is supported by Social Services Waimakariri (SSW), the local health and social services support group. The group, a collective of providers established in 2010, noted a series of frequent issues presenting in the Waimakariri in 2016-2018 (SSW, 2016, 2017, 2018). Issues include unresolved earthquake-related anxiety, addictions, family violence, and suicide ideology in the elderly, and the severity level of these issues was compounded by inadequate service support. Health and support providers in the Waimakariri are not adequately funded to provide services to the rapidly growing population, and have a shortage of staff and long waiting lists for patients requiring care. *Coatí*, a member of Social Services Waimakariri provided further details about this situation in her interview:

'(...) a lot of services that are government funded in North Canterbury weren't set up to be here, they were set up to be in Christchurch, so, to access them you need to go to Christchurch because they don't come out here to the Waimak. You can phone them, but they haven't got a physical presence and they won't come to the Waimak, but they do have government funding so that funding is funneled to Christchurch. Or they come one day a week, or for an afternoon' (*Coatí*).

Coatí's talk indicates that similar to the emergency response context where resources were funneled into Christchurch city which limited emergency management support in the Waimakariri District, the District was again marginalised in the regeneration process. Furthermore, *Coatí* suggests the marginalisation was deliberate ('*they don't come out here to the Waimak*'); '*that they won't come to the Waimak*' [*government*] *funding is funneled to Christchurch*'). Scholars have noted

²¹ The Index is a measure for mapping drought conditions across New Zealand based on a standardized climate index that was developed by New Zealand's National Institute for Water and Atmospheric (NIWA) research.

uneven resource distribution in post-disaster recovery similar to the situation described here. Phibbs et al. (2018) argue that in a market model of recovery resources can be unevenly distributed, centralised in areas with greater capital accumulation, in other terms, those with the most capital receive the most support. O'Hare & White (2018) underscore the need to understand that social disadvantages such as the uneven distribution of health care resources between Christchurch and Waimakariri can create significant disaster related disadvantages for the affected communities. In the case of the Waimakariri, the continued funneling of resources to Christchurch where government funded services are centrally situated compounded the ongoing effects of inadequate social and mental health services already overloaded due to a growing population. The district's challenge to address the increasing demand of services contributed to a decline in the accrual of social and human capital, which resulted in local social and mental health services being driven to work more closely together to maximise resources and avoid redundancies. *Iporá*, a research participant associated with the Social Services Waimakariri collective commented:

'And there is a real positive there too in that the agencies out here, all the different agencies work in collaboration, they really do, they sit around the table every month and (...) I see stuff, and I'm a social worker of forty odd years working in Auckland and South Auckland and Whangarei and I've seen this group work together in a way that is just unreal, it's just brilliant and they are all different, but they all come together and we look at what's needed, what's not needed, and what is there, but we don't get the funding to go and do it! Funding goes to Christchurch, but they don't come out here (...) people out here are just amazing, and although it sounds hard and bad sometimes, people are amazing, people like Coatí, and other people that are working out here, giving everything they've got' (Iporá).

Iporá's talk illustrates how, in the context of a lack of both service funding and workforce support ('*funding goes to Christchurch, but they don't come out here*'), social and mental health service providers' staff in the Waimakariri mobilised their social capital ('*all the different agencies work in collaboration*') to coordinate practical support and funnel cultural capital, such as their experience working in the area, and economic capital, such as the available funding they do have ('*giving everything they've got*'). In doing so, *Iporá* reframes a deficit issue as a catalyst for developing a new strength in the community. However, despite the efforts of SSW and other organisations, socio-economic pressures (such as rise of living costs and loss of household incomes) continued to compound the long-term consequences of the earthquake in the field of

regeneration. The next section provides further exemplars of the decline of social and human capital in the regeneration field.

7.4. *Chajá's* narrative

The decline of economic, social and human capital manifested through social and mental health issues across the community, such as increased incidences of suicide, depression, physical and mental fatigue, as well as compounding socio-economic drivers (e.g., increased costs of living, loss of income), were also noted by *Chajá*, a staff member from Community Wellbeing North Canterbury Trust. The trust is a social services provider for the Waimakariri and Hurunui District with a physical presence in Kaiapoi. *Chajá* states:

'Whilst we mainly see and saw a lot of beneficiary people in poverty, pre-earthquake we were seeing the working poor coming through our doors (...) like a two income family going down to one income. A lot of circumstances like that, so people were stressed within their lives, but the earthquake completely blew that out of the water. But I'm not sure if it's earthquake related, but everything seems to be so expensive, and housing is hugely expensive (...) And, that emotional exhaustion of people who still have to work, who are the working poor in our community, who are living in poverty, are still struggling with their exhaustion and their mental health, and I'm one of them (...) they [unborn children who were in utero at the time of the earthquake] are seven years old now, so, those children, when they were five they weren't ready for school, they were still wetting their pants, and they were in absolute distress, and that is due to families being completely out of their brains with stress and worry' (*Chajá*).

7.4.1. Declining economic, human and social capital in the regeneration field: Socio-economic deprivation and emotional exhaustion in families and their children

Chajá's positions herself within the narrative. Although interpretation of her talk could indicate that the key characters of this extract are the working poor families to which she refers to as '*they*', she also states that she is one of them ('*and I am one of them*'). This way of positioning 'self' can be interpreted as *Chajá* indicating her affiliation or closeness with the group who are described as impoverished. However, frequently referring to the 'working poor' as '*they*' could also be interpreted as a distinction that others this group to a subordinate position in the field to hers. The fact that she is prepared to talk 'about' them speaks to her authority to speak 'for' them showing

the nuance of symbolic power at work. Interpretation of *Chajá's* talk also helps explain the deprivation in regards to lack of economic and built capital that characterises the sector of the community described as *'the working poor'*.

'The working poor', can be understood as family units where although the adults are employed, they do not earn enough to cover living expenses or the costs of secure housing. Rationales for poverty are suggested including the cost of living rising (*'everything seems to be so expensive (...) housing is hugely expensive'*), and family income being reduced (*'two income family going down to one income'*), or alternatively poverty could stem from a mix of both increased costs of living and decreased family income. The loss of income reported to have begun before the earthquakes (*pre-earthquake we were seeing the working poor coming through our doors (...) like a two income family going down to one income*) could be related to the impacts that the 2008-2009 global financial crisis²² had on the New Zealand economy. Furthermore, a Statistics New Zealand (2012) report indicates that the local economic and labour markets entered a recession phase with higher unemployment in this period of time driven by the global financial crisis. An Infometrics report (2015) developed for Enterprise North Canterbury (ENC) also confirms a sudden rise in the average annual unemployment rate of the district between the years 2008 and 2010 which is consistent with *Chajá's* talk describing the *'working poor'*.

These characteristics of the *'working poor'* were also noted by *Mburucuyá* a participant in a focus group conversation with Social Services Waimakariri (SSW). *Mburucuyá* commented as follows:

'(...) how many times did we have a Social Services Waimakariri meeting and in our trends and issues, we had poverty, and shortage [of] affordable housing (...) and it wasn't just poverty in terms of poor people, but rather working poor people. A household where both parents work but earn a minimum wage can just about survive but if they have an unexpected event such as car mechanical issues/new tyres or a medical emergency or something like that, that affects the budget, and causes stress, people can't meet those needs immediately, because the cost of living is horrendous, so they make choices: Do we eat or address the issue, and most probably they choose to eat. Many families are living on less than one hundred dollars a week and they just can't do it' (Mburucuyá).

²² Largest global financial crisis since the great depression (Tatliyer, 2017).

Mburucuyá and *Chajá* present two particular scenarios of ‘*working poor*’ families: two parents working full time jobs each earning minimum wage, and a household with two incomes which is reduced to a single income. Statistics from the Waimakariri electorate produced by the New Zealand Parliament indicate that 7.2% of the total population in the Waimakariri have a household income between NZD 60000 and NZD 70000 (New Zealand Parliament, 2017b), which is the rough equivalent to two annual full time minimum wages, resembling the scenario described by *Mburucuyá* (‘*both parents work but earn a minimum wage*’). However, a further 16,7% of the population have a household income of between NZD 60000 and NZD 35000, while 15.4% of the total population in the Waimakariri have an income of only NZD 35000 or even less (New Zealand Parliament, 2017b), which approximates a minimum wage salary. These statistics indicate that almost 39.3% of the region’s households are receiving a relatively low income, and support *Chajá’s* and *Mburucuyá’s* perspective that the ‘*working poor*’ constitutes a large sector of the Waimakariri community and as such have an increased risk of being exposed to earthquake related financial pressures and emotional stress. Participants’ comments also aligned with findings from the New Zealand Index of Deprivation (Atkinson et al., 2014) which found that although the majority of the Waimakariri residents live in the lowest quintile of deprivation (least deprived, largest household income), 14% of the total residents are exposed to extreme levels of socioeconomic deprivation (most deprived, lowest household income). This is roughly consistent with the 15.4% of the total population in the Waimakariri whom according to New Zealand Parliament (2017b) live with NZD 35000 a year or less. High levels of socioeconomic deprivation are specifically evidenced in Rangiora North, Kaiapoi West, Kaiapoi South, Pines and Kairaki Beaches, and Woodend Beach, which are all located in the 7th decile of deprivation (high end of the socioeconomic deprivation spectrum). This is important because some of these areas such as Kaiapoi South, West, and Pines and Kairaki were significantly affected by the earthquakes and the subsequent red-zoning process.

Mburucuyá’s talk spotlights the economic deprivation of the ‘*working poor*’ sector of society, and how limited access to economic and built capital can ‘*cause stress*’. For instance, similar to the financial situation of over-indebted farmers, working poor families with barely enough income to cover the increasing costs of living (‘*the cost of living is horrendous*’) are exposed to increasing vulnerability when faced with unexpected events which cause additional economic pressure such as ‘*mechanical issues*’ or ‘*medical emergencies*’, let alone extreme events such as an earthquake. However, this economic deprivation is noted to have begun previous to the earthquake. *Chajá* stated that ‘*pre-earthquake we were seeing the working poor coming through our doors*’ as

opposed to only beneficiary recipients living in poverty. The reference to *'coming through our doors'* can be interpreted to mean more than simply entering a building, but also seeking some kind of support from Community Wellbeing North Canterbury Trust to alleviate stress from economic deprivation (*'people were stressed within their lives'*). *That said*, the specific type of support was not indicated.

However, although the presence of economic deprivation related stress in the *'working poor'* was noted by *Chajá* to be present pre-earthquake, she also noted that *'the earthquake completely blew that [poverty and stress] out of the water'*. The reference to the earthquake as an event which *'blew'* the poverty and stress *'out of the water'* suggests that prior to the earthquake, poverty and stress could have been less visible. The earthquake could have been the tipping point after which poverty and stress levels (or rates of ill health) increased to a point where they were hard to manage and emerged *'out of the water'*, out of the depths and made visible. Additionally, *Chajá* questions the relation between the earthquake and the stress experienced by working poor families (*'I'm not sure if it's earthquake-related'*), and links the stress to the increase of housing prices (*'housing is hugely expensive'*). Yet, as a direct consequence of the earthquake land was red-zoned and there was reduced housing stock, which caused a marked spike in rental, land, and construction costs (Statistics New Zealand, 2018a). *That said*, although the earthquake had an impact on housing prices, regional increases were already noted pre-earthquake (McDonagh, 2014). This highlights the need to consider the compounding impacts of pre-existing phenomena, such as global financial crisis and consequent local recession, the rise of unemployment and housing process, in relation to the regeneration context in which these phenomena continued to place Waimakariri working poor families under significant pressure. Furthermore, it is important to highlight that this increase in stress underpinned by economic pressures, experienced associated with by the working poor also extended to the children within their families, as *Chajá* noted: *'they [children] were in absolute distress, and that is due to families being completely out of their brains with stress and worry'*. *Carumbé*, a staff member at one of Kaiapoi's primary schools, also referred to post-earthquake emotional impacts on children that continued to manifest in the regeneration field, stating:

'(...) it's difficult living in a house and having a conversation about your house that needs to be fixed, or your battle with the insurer, or you've lost your job because of the earthquakes, and there's monetary stress, and there's other things going on, it's hard for children not to be aware of some of those things. But I think not only were some of our children aware of these

issues, but also included in those conversations, so actually, that becomes another stressor for a child (...) we still have students in the school who are anxious when we have a fire drill, or emergency evacuation practice. And for some of them it has been identified that that comes from the earthquake times (...) And, we've got one little boy in particular who's anxiety levels have risen so high that he actually hasn't attended school for over a term now, and his parents feel that this is grounded back in the earthquakes (...) the general sense of mental health of our students in particular for me would be that it hasn't changed for the better significantly, so, there are unmet needs there' (Carumbé).

Interpretation of *Carumbé's* talk indicated that the emotional effects mentioned by *Chajá* in terms of stressed children were evidenced in the regeneration field as increased levels of anxiety in response to fire drills and emergency evacuation practices as well as extreme anxiety-driven inability to attend school. *Ñapindá*, a member of the WDC's community development team and active attendee of the SSW coordination meetings, offered a similar perspective:

'There has been discussions about the effects of the earthquakes on families, and children who were born or where very young at the time of the earthquakes, and are now arriving at school and presenting with mental issues, language development, being adequately toilet trained, behavioral issues, and so forth' (Ñapindá).

The narratives of other key participants, including *Chajá*, *Carumbé*, and *Ñapindá*, also consistently identified that the effects of the earthquakes on children prompted severe anxiety, and that symptoms displayed during recovery and regeneration manifested as *'mental issues, language development, being adequately toilet trained, behavioral issues, and so forth'* (Ñapindá). Interpretation of *Carumbé* and *Chajá's* interview talk helps explain the causal link between the earthquakes children's anxiety. Analysis of *Carumbé's* talk highlights how it was hard for children to be unaware of the conversations their parents were having in regards to earthquake-related stressors (e.g., damaged homes, insurance issues, economic pressures, loss of employment). *Carumbé's* talk also documented how children were sometimes *'included in those conversations'* which, potentially caused significant stress for the child. *Chajá's* talk also referred to this link between the stress of the family and the stress of the child: *'(...) they [children] were in absolute distress, and that is due to families being completely out of their brains with stress and worry'*. This stress lingers to this day: *'the general sense of mental health of our students (...) hasn't changed for the better significantly'* (Carumbé).

The results detailed in the preceding sections showcase how human capital elements, such as people's mental health, have continued to be under pressure during regeneration. However, analysis also underscores the importance of understanding that the erosion of human capital during regeneration has also been tied to and compounded by multiple other changes in capital compositions. These include loss of employment, fewer employment opportunities, reduced household incomes, increased costs of living (economic capital), and more frequent droughts (natural capital). These results highlight the importance of understanding community capitals as dynamic and unpredictable in that they can transform, accrete or erode across time and space in diverse and unpredictable ways.

In addition to the decline noted in human and social capitals in regeneration, a decline in economic capital was also recorded associated with economic and employment leakage (diversion of money and jobs) from the District to other parts of Canterbury (mainly Christchurch). Council and developers engaged in efforts to draw some of that economic and employment leakage back into the District by revitalising the local economy through new town centre developments, as described in the following sections.

7.5. *Tamandua's* narrative

Tamandua, a developer with strong ties to Kaiapoi, provides important insights about Kaiapoi's town centre revitalisation in the field of regeneration. Additionally, his talk illustrates the physical and metaphysical assets that he required in order to occupy a central position in the field of regeneration and lead the town centre redevelopment process. This is his story:

'[to be a developer and help redevelop the area] you need a bit of experience for a start, you need a bit of assets behind you to be able to go and do these things (...) we had a good report with the banks, so we were quite lucky in that respect (...) and I don't think it's risky, it does have a potential risk but we [building company] sort of feel we know what we are doing, and we do it in an organised manner (...) a lot of people would see it as risky and they wouldn't know where to start (...) I suppose I was just lucky that I've been brought up in the building industry (...) you have to have a vision, and then try and make this vision come to life (...) I've lived here all my life, and I suppose you run into a lot of people you know and [you] see what they are looking for, what's needed in town (...)I would probably have been better off going off to Rangiora and done my thing out there, but I mean, it's more about doing something for the community as well, I don't want to lose the shirt off my back, but I'm pretty sure I'm not

making a fortune either (...)[after the earthquake] there were a lot of businesses devastated by the earthquake (...) and the Council had to pave the way, and create some opportunities for these people (...) we've always struggled a little bit with Christchurch on the retailing side of things (...) employment is a big thing, if you are going to employ people in the town [Kaiapoi town centre], you know it's going to make a big difference (...) it's about creating an environment where people work and if you create an environment where they come to work, it creates opportunities for all the other businesses like the shops, the chemist, the doctor's, all those sorts of thing' (Tamandua).

7.5.1. Tamandua's capital accumulation, mobilisation, and his central positioning in Kaiapoi's town centre redevelopment field

Interpretation of *Tamandua's* talk draws attention to the interwoven relationship between economic, built, human, symbolic, social, cultural, moral, and political capitals, and the participant's central position in the regeneration field in the Waimakariri. The idea of a 'vision', which *Tamandua* refers to in his interview talk, is key to the relationship between physical and metaphysical capitals, as well as his positioning, and was also mentioned by other participants, such as *Yaguarundi* who is deeply embedded in the economic development of Kaiapoi through ENC:

'(...) when you say people can shape, this man called Tamandua, he was born in Kaiapoi, his family were well known in Kaiapoi (...) He had the knowledge of the local area. He [Tamandua] is shaping Kaiapoi right now as we speak, so this is his [building were the interview was conducted], the brewery on the two pieces of land that he bought off the council with the development of that hospitality precinct on the river, and he is also going to be buying a boat and have cruises up and down the river, it's his vision, it's his town, we [business sector] are all onboard with it, and we can support that' (Yaguarundi).

Interpretation of *Yaguarundi's* talk affirms the importance of *Tamandua* as an individual who is 'shaping' the township through his 'vision' and capital mobilisation. *Yaguarundi's* way of referring to *Tamandua's* 'vision' as 'his vision' and 'his township' could be interpreted as a way of hierarchically positioning *Tamandua* in the regeneration field, while also providing the symbolic legitimacy for him to occupy this position ('we [business sector] are all onboard with it, and we can support that').

When *Tamandua's* states *'you need a bit of assets behind you to be able to go and do these things'*, he may be referring to the materialisation of his *'vision'*, of his development projects (*'bring it [vision] to life'*). Further unpacking what kind of *'assets'* are needed to enable (*'be able'*) the materialisation of his *'vision'* is required because this capital accumulation (*'a bit of assets'*) is what underpins his central positioning in the regeneration field. Analysis of *Yaguarundi's* talk suggests that *Tamandua* has the *'vision'*, and the built, natural, economic, cultural, social, and symbolic capitals to materialise the *'vision'* and *'shape'* the township. *Yaguarundi* and *Tamandua's* talk describe these capitals as including buildings (*'so this is his [building] Yaguarundi'*), money or credit to buy property (*'we had a good report with the banks' Tamandua*), and access to land (*'the hospitality precinct on the river' Yaguarundi*). Additionally, interpretation of participant's interview talk indicate that he also had access to local knowledge (*'He had the knowledge of the local area Yaguarundi'*), family ties to the area (*'he was born in Kaiapoi, his family were well known in Kaiapoi Yaguarundi'*), and overall support of the business community (*'we are all onboard' Yaguarundi*). In having this *'vision'* and the capitals to materialise it, *Tamandua* infers ownership of the town (*'it's his town'*) both physically (development investments) and metaphysically (the vision). This supports the argument that the accumulation of physical and metaphysical capitals (cultural, social, moral, symbolic, political, economic, and built) which enable him to construct and materialise a *'vision'* is key because it underpins *Tamandua's* hierarchical position in the field of regeneration. This relation between having *'a vision'* and bringing *'it to life'* through the mobilisation of accumulated physical and metaphysical capitals will be explored in the following paragraphs, starting with cultural capital. Two key references to habitus and legacy, both aspects of cultural capital (Bourdieu, 1990, 1991, 2012; Flora & Flora, 2013), can be found in *Tamandua's* interview talk: the first reference is tied to a local resident habitus and the second to his builder habitus. In regards to the local resident habitus, he refers to his life in Kaiapoi: *'I've lived here all my life'*. Later in the interview he has also reinforced his Kaiapoi linkages that stretch beyond his own lifetime:

'I was born here (Kaiapoi) (...) my family is from Kaiapoi, well, my father was, and his uncle used to be the mayor of Kaiapoi in nineteen ten or something. So, we go back quite a long way here' (*Tamandua*).

This interview talk from *Tamandua* can be interpreted as highlighting the historic family links to Kaiapoi (*'my family is from Kaiapoi'*). Additionally, presenting his father and uncle as important political figures in the area can be interpreted as a display of political legitimacy and social capital

in the district. Having strong family and political ties to the area in addition to having been born and living all his life in Kaiapoi shape a local habitus that is both transmitted through legacy within his family, as well as shaped through interactions with the rest of the community in daily life (Bourdieu, 2012).

With respect to a builder's habitus, *Tamandua* notes:

'I'm a plumber by trade, but my father was in the building industry, so I've always built houses and those sorts of things (...) I've been brought up in the building industry' (Tamandua).

By referring to being a plumber (*'I'm a plumber by trade'*), *Tamandua's* suggests that he embodies his credential (*'I am a plumber'*), and he does so through praxis (*'by trade'*). In practicing the specific building trade of a plumber *Tamandua* has acquired a plumber's habitus (Bourdieu, 2012). However, his relation to the building industry is intergenerational having also developed through legacy (*'my father was in the building industry (...) I've been brought up in the building industry'*). Thus, *Tamandua* inherited and developed a builder's habitus both through interactions with his family, as well as through the praxis of a specific trade within the building industry (plumbing). Additionally, acquiring this particular habitus around building is what gives him a *'feel'* for the business (*'we [building company] sort of feel we know what we are doing'*). This *'feel'* as well as his embodied experience give this particular actor an important cultural capital base of the building praxis to materialise *'his vision'*. He simultaneously reduces the risk associated with the building industry by working in *'an organised manner'*, a manner accessible to those with the building habitus (*'you need a bit of experience', 'a lot of people would see it as risky and they wouldn't know where to start'*). Furthermore, through developing and holding cultural and economic capitals that linked him to both the local community and to the building industry, *Tamandua* also developed social relations that tie him to both groups and thus social capital (Bourdieu, 1990, 2012; Putnam, 2000), in the form of bridging capital that created links between the community and the building industry.

This construction of bridging social capital is also reflected in *Tamandua's* talk: *'I've lived here all my life, and I suppose you run into a lot of people you know and see what they are looking for, what's needed in town'*. In the praxis of daily life in the community, *Tamandua* appears to *'run into a lot of people you [he] know[s]'*, indicating that there are well-established social networks (*'people you know'*), with which this participant has fluent and frequent relations. When *Tamandua* runs into people they may communicate their needs indirectly, which he is able to perceive and/or

detect because there is a common habitus ('[you] see'); '[you] see what they are looking for, what's needed in town'. Therefore by having close networked relationships established through his local resident habitus *Tamandua* is able to engage and communicate with other members of the community to gather information about town needs which he draws on to inform his 'vision' for the township.

Tamandua's engagement strategies were also referred to by *Arequita*, *Tamandua's* business associate, who provided an example of how they integrate community perspectives into their development projects:

(...) an example of that [community engagement] is that in Kaiapoi, right next to the River there's a site called "the old bridge tavern", which is across from Enterprise North Canterbury. So, that came up because Council owned part of the site originally, and we've got a good relationship with Council given all the work we've done out there in the District (...) on that site there for example we put a contract to guide that, and because it was a sensitive site the Council wanted to have in the agreement that it needed to be approved by the Kaiapoi Community Board, and we were happy with that, it means that the communities had some input into it, and thus Council is going to be more supportive of it (...) So, we engaged with them, and Tamandua is fantastic at that [community engagement], speaking to local people, asking what they think about this, that, the designs, going and presenting in front of the community board' (Arequita).

This extract from *Arequita's* interview describes the way in which *Tamandua*, the Council, and the community representatives relate to each. The relations that *Tamandua* established through his local resident's and builder's habitus enable him to connect with the Council and develop 'a good relationship with the Council' based on previous collaborations ('given all the work we've done out there in the District'). This is important because the local Council owns part of the land with development potential ('Council owned part of the site') and also is the organisation which issues building consents.

Arequita's talk reinforces the view that *Tamandua* has a positive relation to the Kaiapoi community by mentioning that *Tamandua* is 'fantastic at that [community engagement]' both formally through presentations at the community board, as well as informally running into people and 'speaking to local people, asking what they think about this, that, the designs'. In becoming a social bridge between the community, Council, and building industry, *Tamandua* is able to accumulate cultural

capital (knowledge) about local needs that inform his 'vision' ('communities had some input into it', 'He [Tamandua] had the knowledge of the local area'). Having knowledge and networks that bridge communication between Council, community, and the building industry, also enables Tamandua to balance his own personal interests and needs of making a profit ('I don't want to lose the shirt off my back'), with the identified needs of the community ('it's (...) about doing something for the community as well'). However, Tamandua's moral position, which requires a balancing of community needs and personal needs, is also potentially informed by a strong sense of place according to Arequita:

'Kaiapoi for us, is sort of where we started our development, it's got a special place in Tamandua's heart, and I think that from a community perspective we try to engage and people like what we do (...) I think that's just the way Tamandua and I are, it's not all about us, it's win-win for everybody, but it still has to provide returns for us (...) it's more about the small town attitude, and it's about the legacy of it, it's about the longevity of it, and respect for the people and earning that respect, and that creates opportunities in its own right' (Arequita).

Analysis of Arequita's and Tamandua's talk shows that their interests are complex and deeply influenced by cultural, moral and economic elements. As an exemplar, an important element considered by both Tamandua and Arequita is to create personal economic profits ('it still has to provide returns for us'). However, further analysis also shows that Tamandua has a strong emotional connection to Kaiapoi ('it's [Tamandua] got a special place in Tamandua's heart'). Analysis of Yaguarundi's talk also reinforced this argument. She states: 'I think that this developer Tamandua really gets that [Kaiapoi's] sense of place' (Yaguarundi).

As stated in Apereá's narrative (Chapter six), sense of place is an essential component in the construction of individual and collective identities (Gieryn, 2000). Sense of place may be understood as the complex process through which people relate through social, symbolic, and cultural interactions such as experience, memories, and legacy to the environment they inhabit (Bourdieu, 1986; Dovey; 1992; Flora & Flora, 2013). In the case of Tamandua, it can be argued that in developing a local habitus this actor also accumulated experiences, memories, and friendships that emotionally tied him to the place ('a special place in Tamandua's heart', 'sense of place'). In turn, this co-construction of a sense of place and belonging has prompted development of a sense of moral responsibility in Tamandua, manifested as a desire to respect the township and its diverse

and unique characteristics. Therefore, although interpretation of *Tamandua* and *Arequita* interview talk have indicated a prioritisation of personal financial gain, this focus is closely followed by a moral interest in engaging with the community to do *'something for the community'* by securing the *'legacy'* and *'longevity'* of local values such as the *'small town attitude'*²³. This could be interpreted as *Tamandua's* and *Arequita's* accrual of moral capital, which simultaneously aligned with the search for personal profit.

Continuing the theme of moral capital, notions of respect are also highlighted in participants' talk. Towards the end of *Arequita's* talk, for example, there is a reference to the symbolic element, *'respect'*, and specifically *'respect for the people and earning that respect'*. This expression may reference residents of the community (*'people'*) whose *'respect'* should be *'earned'*. Analysis of participants' talk also suggests that *'respect'* can be *'earned'* by investing time in respectfully engaging with the community and integrating local values and *'needs'* into development plans (the *'vision'*). However, this recognition of community values is also underpinned by the idea that *'earning that respect'* and accumulating the symbolic capital tied to it can also generate opportunities. In contrast the lack of this respect and relationships could create barriers to development as *Arequita* explained:

'I think that from a community perspective we try to engage and people like what we do, and it would be hard to do if you didn't have those connections [to the community and Council] and if you didn't have access to the land because no one wants to sell it' (*Arequita*).

Arequita's talk indicates that without social connections to the community it would be hard to access land for development - *'because no one wants to sell it'*. This makes earning people's respect a form of metaphysical investment for the developers, which will provide returns in the form of sufficient legitimacy in the community to foster the social connections that will give them access to land for future development. Local land owners might not want to sell their land to people they do not respect and who they do not trust to develop the land in a way that ensures the *'longevity'* and *'legacy'* of local values such as the *'small town attitude'*. This analysis showcases how economic and natural capital can be underpinned by cultural, moral and political capitals.

In this regeneration field, local residents were able to negotiate and articulate their needs through the possession of land (a mix of economic and natural capital) which developers required in order

²³ Tightly knit community relations.

to conduct their business. However, relationships between ownership of the land, sale, and development are not simple because there needs to be an alignment between prevailing market conditions, and the ownership of land, together with the holders of the capital to buy and develop the land. In the case of *'the old bridge tavern'* for example, the WDC possessed the land and their condition for sale included consulting the community through the Kaiapoi/Tuahiwi Community board as *Arequita* states: *'the Council wanted to have in the agreement that it needed to be approved by the Kaiapoi Community Board'*. However, it was also *Tamandua* and *Arequita's* prerogative to refuse to accept this condition, although they chose not to and responded positively to the WDC condition (*'we were happy with that'*). Thus, independently of land tenure, the moral consideration *Tamandua* had for the local community both served the community in taking their values into consideration, as well as the developers' interest in gaining access to land development and profit opportunities. Sustaining this balance between personal and community benefits is foundational for *Tamandua* to occupy a central place in the regeneration field. Without the symbolic capital provided by the community, and earned by the developers through formal and informal community engagement strategies, *Tamandua* would have lost access to land, the possibility to materialise his *'vision'*, and, thus, his central position in the field.

Further to his concessions to the community, *Tamandua* is able to construct and materialise a *'vision'* through multiple elements: Firstly, through his strong sense of place and respect for local values and needs identified through lifelong formal and informal social networks. Secondly, *Tamandua* has been able to draw on his links to community, Council, and the building industry, his local and building habitus, as well as his access to money and land. *Tamandua's* accumulation, and mobilisation of cultural, social, symbolic, political, moral, economic, and built capitals have enabled him to occupy the central position in the field of regeneration. This central position has facilitated his visualisation of the community's residential needs as well as the practical materialisation of building development responses to them. Having explored the capital underpinnings of *Tamandua's* central positioning in the field of regeneration, the following section explores the descriptive content of what *Tamandua* and *Yaguarundi* refer to as the *'vision'*.

7.5.2. Economic capital and Kaiapoi's town centre redevelopment process

As previously discussed, *Tamandua's 'vision'* is partially informed by what he identifies as the town (of Kaiapoi's) challenges and needs, which he recognised during his own formal and informal community engagements. Revisiting *Tamandua's* initial interview talk, there is evidence of what he

understands to be some of the key issues. *Tamandua* refers to four key elements that he understands as community concerns: economic leakage as a result of competition from Christchurch (*'we've always struggled a little bit with Christchurch on the retailing side of things'*); *'devastated'* businesses after the earthquakes; *'employment'* (*'employment is a big thing'*); and business opportunities (*'if you create an environment where they come to work, it creates [business] opportunities'*). The four concerns are all associated with loss of economic capital, and were also identified by other interviewees as key issues, as well as explicitly identified as challenges in multiple Council reports and planning instruments. These four concerns are explored further below.

Tamandua reflected on business devastation post-earthquake in the following terms: *'(...) [after the earthquake] there were a lot of businesses devastated by the earthquake (...) and the Council had to pave the way, and create some opportunities for these people [business owners]'*. *Yaguarundí*, a staff member at ENC, the agency in charge of economic recovery post-earthquake, explained the devastation and Local Council's efforts to *'pave the way'* as follows:

'I had my team pretty much the next day which was a Monday go out up and down the streets of Kaiapoi, there were people standing outside their buildings in tears, knowing it was their business and buildings destroyed (...) we ran workshops, and we set up clusters, we did all sorts of things, just to make them talk to each other, support each other, we had free workshops to deal with all the cash flows, insurance, we ran every workshop, and they were well attended, and they were free (...) we were just listening to what people were saying and we would respond accordingly, we weren't doing top down stuff, we were doing bottom up, and that's how you respond (...)I think ten per cent of business did close' (*Yaguarundí*).

Yaguarundí's talk (*'there were people standing outside their buildings in tears, knowing it was their business and buildings destroyed'*), as well as reports produced during the earthquake recovery (ENC, 2011, 2012, 2013), support assertions made by *Tamandua* that many businesses in Kaiapoi were severely affected. *Yaguarundí* said that some businesses did not recover at all (*'ten per cent of business did close'*), and that ENC facilitated multiple *'bottom up'* opportunities to support business continuity. This bottom up approach is also described by *Yaguarundí* as being constituted by activities such as free workshops, networking meetings, and clustering that aimed to foster self-enablement amongst the local businesses. The loss of business and economic opportunities was further commented on by *Tamandua* who remarked: *'I think eighty percent of the spend goes to Christchurch for a lot of retail on a lot of products'*. *Tamandua's* view and more broadly the

withdrawal of businesses and employment were also documented in two research papers (Foy & Rossen 2015; Heath & Osborne, 2016) commissioned by the Council, as well as in several Council plans and reports (WDC, 2012, 2015, 2018c). *Tamandua* reiterated his concern about the leakage later in the interview in the following way:

'(...) a lot of the people are working in town [Christchurch City] so they don't actually spend a lot of their spending here [Kaiapoi] (...) there's been a lot of research done on that economic leakage [economic and employment diversion], and I think eighty percent of the spend goes to Christchurch for a lot of retail on a lot of products I think. So, it's about trying to maintain that [employment and business] here, and that's why the employment thing, if you can employ the people and motivate them to stay in the area, then they'll be more likely to shop here' (Tamandua).

Tamandua's talk, has highlighted the close relation between economic leakage, employment leakage and business opportunities through drawing attention to the fact that many people who live in Kaiapoi do not work in Kaiapoi. He also notes that residents do not spend their income in Kaiapoi and this assertion is supported by recent research (Foy & van Rossen, 2015; Heath & Osborne, 2016; WDC, 2018c, 2015). *Tamandua* suggests that the loss of economic capital in Kaiapoi can be partly considered the result of local residents' actions and has proposed a solution to the economic decline. He suggests that: *'if you can employ the people and motivate them to stay in the area, then they'll be more likely to shop here'*. The inference is that retaining employment and preventing workforce leakage could result in local residents spending more in the township and facilitate business sustainability. Thus, his talk indirectly references his earlier comments in the interview, which addressed the generation of *'opportunities'* for businesses, where he remarked: *'if you create an environment where they [people working out of the district] come to work, it creates opportunities for all the other businesses like the shops, the chemist, the doctor's (...)*'. *Tamandua* also described the type of environment he envisioned, that could create opportunities for other businesses:

'(...) So, this building here [building where the interview was being held], I mean, we didn't have a tenant, so we just built it and thought we'd make it work. And we got a Cafe, but the Cafe is not good unless you have some people around, so we cut upstairs into twelve offices up there, and of course, all those people have meetings and things, it just generates, it's just self-generating I guess (...) They [Cure Boating Club] used to have the boat, the Tuho, the

coastal shipping vessel (...) And then, a couple of years ago the old boat that was here ran aground at the bar (...) I think it would be good to get another vessel back to the river and create something for people to do. And the river is a big asset to the town (...) It's a combination of everything actually, campervans coming in. You get the boat on the river, you have some people living right in your town centre so they can go down to have some dinner or something, or they go to the cafe, it's the combination of all those things that starts the wheels turning and starts generating a bit of activity doesn't it?' (Tamandua).

These remarks may be understood as a description of *Tamandua's* 'vision' and aspiration for an environment that is characterised by multiple types of economic activities and development or investment opportunities. He proposes co-working spaces ('*we cut upstairs into twelve offices up there*'), and increased choices in hospitality services ('*we got a Café (...) they can go down to have some dinner or something, or they go to the café*') that are centralised in the town centre as possibilities. He also identifies tourist circulation ('*campervans coming in*'), development of a river precinct with river activities ('*I think it would be good to get another vessel back to the river (...) the river is a big asset*'), and intensified residential development on the nearby red-zoned land ('*people living right in your town centre*') as opportunities that could encourage regeneration. This 'vision' aligns with and is similarly described in multiple planning instruments developed by the WDC following the earthquakes, including the Kaiapoi Draft Town Centre Plan (2018a) and the Kaiapoi Marine Precinct Plan (2017). These plans are underpinned by the Waimakariri Residential Red Zone Recovery Plan (2016c), the Long-Term Plan 2018-2028 (2018b), and the District's Development Strategy 2018-2048 (2018c).

In combination, these planning instruments create a framework to enable the development of a river Precinct (Kaiapoi Marine Precinct) that includes riverside bleaches/terraces adjacent to a private development designated for retail and restaurants. The private development is contracted to *Tamandua* as *Arequita* stated ('*we put a contract to guide that [Private river development: Old Bridge Tavern]*'). The planning measures also make provision for the creation of a caravan park near the town centre, and co-work spaces that would allow small and start-up businesses to base themselves in existing under-utilised buildings (WDC, 2018a). Further, planning documents indicate a mixed-use business area specifically designated in the Kaiapoi South section of the red-zoned land as a way to '*support a vibrant town centre, with the riverside as a focal point*' (WDC, 2016c, p. 13). The specific developments proposed for this section of land by the Waimakariri Residential Red

Zone Recovery Plan 2016 are *'commercial and retail developments, a public transport interchange, and/or public car parking'* (WDC, 2016c, p. 13). However, the possibility of alternative uses for the land are also noted in the Waimakariri Residential Red Zone Recovery Plan 2016 as follows; *'It is recognised that alternative land uses could be undertaken in this area in the long-term, subject to technological advances and/or market demand making alternative land uses feasible'* (WDC, 2016c, p. 13). Although in the Waimakariri Residential Red Zone Recovery Plan 2016 document there are no explicit descriptions of what these alternative uses may be, *Tamandua* did refer to the potential in this area to develop intensive residential activities (*'people living right in your town centre'*). *Yaguarundí* also referred to the potential to redevelop this section of red-zoned land into an intensive residential area:

'(...) you get told that you can't have housing built back on that red-zone land, how bad would that go, and yes, but those were houses that took up large sections, I'm talking about intensive residential, and that will revitalise the town centre (...) we need to intensify and densify' (Yaguarundí).

Similarly, a planner involved with the drafting of the Waimakariri Residential Red Zone Recovery Plan also commented on this topic:

'(...) we thought it's [Kaiapoi South mixed-use business area] most likely to develop for business activity in the future, but we also don't want to preclude higher level, high density, above ground floor or apartment style residential development if there is demand for it in this location' (Aiguá).

Aiguá's comments confirm that although no specifications are included in the Waimakariri Residential Red Zone Recovery Plan 2016 in regards to potential alternative uses for the proposed Kaiapoi South mixed-use area, creation of a high level, high-density residential development could be considered for this location. This possibility is also referenced as a tool for facilitating regeneration in *Yaguarundí's* interview talk, where he states: *'I'm talking about intensive residential, and that will revitalise the town centre'* (Yaguarundí).

Overall all, these activities and plans for the town centre and adjacent red-zoned and residential areas aimed to provide opportunities for businesses to thrive in the post-earthquake context as well as redevelopment of the Kaiapoi town centre in response to the acknowledged need for increased economic capital. This outcome could be facilitated by creating diverse working

environments (such as co-working spaces) and consumer options, such as trendier cafés, that would offset employment and consumption leakage from the region (WDC, 2018a, b, c). The key planning instruments (Waimakariri Residential Red Zone Recovery Plan 2016, Kaiapoi Draft Town Centre Plan 2018, Kaiapoi Marine Precinct Plan, Long-Term Plan 2018-2028, and the District's Development Strategy 2018-2048) are all aligned and have been informed by the community (public) through public consultation processes. Thus, through implementation, these instruments *'pave the way'* for *Tamandua's* *'vision'* of an economic environment that opens new opportunities for businesses in a manner that is respectful of the local community's sense of place. Analysis of *Tamandua's*, *Arequita's*, and *Yaguarundi's* interviews as well as planning documents also indicate that local values and identity (e.g., *'small town attitude'* and *'sense of place'*) were preserved and respected by developers and Council. Yet little or no consideration appears to have been given to the potentially marginalised and socio-economically deprived sectors of Kaiapoi. Residents from these areas of the community may not have been able to access the *'vision'* of the proposed Town Centre, other than as workers employed to support the Town Centre's economy. The risks for socio-economically deprived residents are explored in the following section.

7.5.3. Marginalisation and displacement risks for socio-economically deprived residents in Kaiapoi during the Kaiapoi's Town Centre regeneration

One of the key issues to which the Kaiapoi's town centre revitalisation attempts to respond to is the employment and spending leakage that still characterises the post-earthquake economic profile of Kaiapoi. According to a WDC report, much of the work force that leaks outside of the Waimakariri is *'highly skilled and qualified'* (WDC, 2012, p. 43). As a counterpoint to the economic impacts of residents departing from the Waimakariri, *Arequita*, referred to a change in consumption preferences associated with the migration of earthquake displaced residents from Christchurch to the Waimakariri. He states:

'(...) some people will go to a cafe that has the traditional date scone with butter, but other people might want to go and try something a little bit nicer, something a little bit different and maybe at [the café] they are paying more for it, but that's just the different tastes of people, (...) people who went out there [Kaiapoi] and experienced what was out there [Kaiapoi] and perhaps thought that what was on offer there wasn't what they used to get in the city, so in the weekend they'd go back into the city to eat there (...)so they [businesses] set

up their own restaurant or café [in Kaiapoi]. And they've done it differently, a bit trendier, a bit cooler, and maybe Kaiapoi was always price conscious and now because people were used to paying an X amount of dollars in town are now prepared to pay that in Kaiapoi (...) I think the people who have moved out to the Waimak are more discerning, and they want to have some more, and better offerings and experiences with their food, and retailing' (Arequita).

In *Arequita's* talk 'taste' is associated with 'better offerings and experiences with their food, and retailing' as well as to 'a little bit nicer, something a little bit different', and more costly ('they are paying more for it'). Thus, 'taste' is not only a matter of purchasing choice, but shaped by the accumulation of economic, cultural, social, and symbolic capitals and can be used as an indicator of social status (Bourdieu, 2010), and new residency in Kaiapoi. By referencing individuals who prefer 'better offerings', 'a little bit nicer', 'a little bit different', 'trendier' and with a higher price, *Arequita* appears to place individuals with higher purchasing power who moved into the Waimakariri in hierarchically superior positions in the field of regeneration to the situation of local Kaiapoi residents. Local residents, it is inferred, have less purchasing power as they are described as 'always price conscious'. Analysis of *Arequita's* interview talk also suggests that individuals who could not find consumption offers in Kaiapoi which reflected their 'taste' for 'better', 'nicer', 'trendier', 'cooler', and more expensive items, demonstrated their alignment with a particular form of social status (or class), by choosing to commute to Christchurch in search of consumption options that aligned with their preferences. The 'vision' to revitalise Kaiapoi's Town Centre ascertained from *Tamandua's*, *Yaguarundi's*, *Arequita's* narratives, and from the planning documents, appears to be articulated with the aim of retaining these highly skilled and qualified individuals with higher purchasing power. In order to achieve this outcome, the plan is to expand Kaiapoi consumers' purchase options within the Town Centre in a way that aligns with new residents' sense of social status and identity. Therefore planning for the future has focused on activities that align with the habitus of the new highly skilled and qualified individuals with high purchasing power, who can increase retail spending and foster new business and service opportunities.

That said, if prices continue to rise, entire sections of Kaiapoi's community who do not hold sufficient purchasing power (economic capital) could be marginalised. This collective may also not possess the cultural and social capital necessary (highly skilled work attributes and credentials) to have their 'tastes' catered for in the town centre's planned economic activities and consumption offerings. Individuals with less purchasing power may have to accept relegation in their social

position to jobs as providers of labour targeted towards servicing the envisaged town centre. Town Centre revitalisation plans may therefore be framed as being targeted towards satisfying hierarchically situated new residents who have accrued the 'distinct' taste that reflects their elevated social status and purchasing power. This prioritisation of new residents with purchasing power is particularly relevant in a socio-economic context where high socio-economic deprivation levels characterise areas such as Kaiapoi West and Kaiapoi South (Atkinson et al., 2014). The Waimakariri Residential Red Zone Recovery Plan 2016 contains provisions for initiatives that do not require purchasing power, such as mahinga kai areas as well as a food forest, dog parks, and BMX tracks. However, the potential marginalisation of poor Kaiapoi residents from the activities to be developed in the Town Centre could add further socio-economic pressure on a sector of the community that is already experiencing high levels of socio-economic deprivation and stress, and ultimately erode human and social capitals.

The findings described above align with other findings in this chapter. Complexity is inherent in community capitals, with non-linear and unpredictable dynamics that can erode or accrue capitals, and distribute capital across a community in sometimes unseen or unexpected ways. Analysis of participants' talk shows the Waimakariri District continues to experience earthquake-related effects, including a marked decline in human and social capital manifested as increased levels of physical and emotional exhaustion amongst local emergency responders, farmers, and the 'working poor', many years after the earthquakes. Rebuild efforts have also continued, such as Kaiapoi's town centre redevelopment and the Waimakariri's residential red-zone recovery processes. Attempts to revitalise the economy of Kaiapoi's town centre have tended to prioritise the cultural preferences ('taste') of people with higher income, the new residents. This type of town centre redevelopment process could foster a rise in hospitality and retail prices (i.e., restaurants, café's) which could lead to the economic and spatial marginalisation of some of the original Kaiapoi residents from the town's centre, particularly those residents with low incomes.

7.6. Practical implication of long-term recovery in the context of an emotionally exhausted community facing economic and employment leakage

These findings may help inform long-term recovery planning processes. As an exemplar, the National Disaster Resilience Strategy (NDRS) 2019 acknowledges the importance of equitable outcomes and long-term recovery processes. However, in long-term economic recovery contexts, such as Kaiapoi's that are characterised by economic and employment leakage, attracting

individuals with high purchasing power may be seen as an efficient strategy to prevent or halt economic leakage and thus revitalise the affected region's economy more rapidly. Achieving the equitable and transformative outcomes aimed for in the NDRS 2019 in the context of small townships, like Kaiapoi that need of economic revitalisation solutions could prove to be a lot harder than recognised in the strategy.

The NDRS 2019 acknowledges the importance of long-term holistic recovery in practice. Yet districts like the Waimakariri face difficulties in accessing resources to address earthquake-compounded financial, social and mental health issues, including challenges to the farming community, elderly isolation, emotional and physical stress, child anxiety, family violence, and suicide. *Kururú* referred to this situation in the following terms:

'We have two welfare officers within our organisation and we are only meant to have one, the second one is because of the earthquakes, and they [regional command] are constantly trying to pull that one away saying "you don't need it any more"' (Kururú).

Kururú's story infers that police emergency responders are still experiencing significant signs of emotional distress associated with the earthquake. He also notes that the levels of distress experienced by officers are also compounded by their constant exposure to an increased incidence of suicide attempts as well as having to manage situations where other psycho-social impacts on residents from the 2016 Hurunui/Kaikōura earthquakes are evident. *Kururú* suggests, that the emergency management apparatus belief that earthquake recovery support is no longer needed ('*you don't need it anymore*') and withdrawal of extra support staff, may also hinder the emotional recovery trajectories of police emergency responders in the longer-term. *Chajá* referred to a similar lack of support for other emergency and recovery workers:

'(...) the workers [Recovery Centre, Civil Defence, and other response and recovery associated workers] who are still around in the community I can pretty much say that most of them are walking around in an exhausted state, this far on past that earthquake. Because there wasn't that nurturing and emotional feeding of the people who were supporting the people who were affected, and we were all hurting, so that's something that really needs to be looked at, it's looking after the workers' (Chajá).

Chajá's talk suggests that the emotional exhaustion experienced by response and recovery workers which persists to this day ('*workers who are still around in the community (...) are walking around in*

an exhausted state) could be alleviated if they received *'nurturing and emotional feeding'* in a way that increased response workforce resilience. However, ensuring that broader and longer term support is available for response and recovery workers, as well as for the broader community, is undermined by government agency policies which stipulate that the recovery period is of limited duration. *Chajá* comments as follows:

'(...) when you are in a situation post-earthquake, or post-disaster, any disaster, yes there's money around and whatnot, but it's like for a year, it's a year, they are year contracts, and when you are still dealing with a hugely growing population in our community, who are still living with the after effects of going through a disaster for some reason our District Health Board or our Minister of Social Development don't see that there is a need anymore, even though there is evidence to say that there is (...) We [social services] need that funding to increase our capacity to deal with the amount of mental health and psycho-social issues that are prevalent in our community' (*Chajá*).

Interpretation of *Chajá's* interview talk indicated that although there was initial funding to support social recovery, the psycho-social effects of the earthquake endured well beyond the lifespan of that funding. Results from this research as well as other evidence (SSW, 2016, 2017, 2018) indicate that mental health and psycho-social effects of the earthquake are still present in Waimakariri's communities. Yet *Chajá* infers that regional and national administrations, which determine mental health funding, do not perceive this to be an ongoing issue requiring further financial support. The lack of adequate financial support for services has hindered the ability of local social and mental health service providers to be able to cope and respond effectively to the long-term demands of their community (SSW, 2016, 2017, 2018). Careful and considered analysis of the regions' psycho-social challenges and support needs is required to facilitate the development of contextually appropriate recovery policies and practices, which when implemented will help to ensure adequate health and psycho-social support services are available in the region, and foster long-term and holistic recovery in the region's regeneration field.

7.7. Conclusion

Results from the content analysis illustrated that similarly to analytical findings presented in the previous chapters, the word *'people'* continued to be at the centre of the overall regeneration. However, this stage was also characterised by new emerging issues manifested through the

frequent use of terms such as ‘business’, ‘development’, and ‘buildings’ which, together with the narrative analysis results, indicate that regeneration could be considered a distinct long-term recovery phase characterised by urban redevelopment and continuous emotional fatigue. Additionally, cluster analysis results suggest that regeneration in the Waimakariri district has been closely related to a cluster of political, built, and economic capital proxies including political relations between developers, Council, and the community in the redevelopment process of Kaiapoi. The results of a network analysis of capital relations found in participants’ talk highlighted the importance of considering relationships between capitals as complex networks of conceptual categories.

Kururú’s and *Chajá’s* stories have provided an entry point for analysing how a decline in human capital proxies such as mental health is still evident in the Waimakariri community seven years after the earthquakes and negatively affecting broader community well-being. This decline is associated with increased levels of stress, emotional exhaustion, and other manifestations of human capital decline such as increased suicide rates, and social capital decline evidenced in expressions of domestic and family violence. *Kururú’s* narrative presents the story of police emergency responders’ experiences of physical and emotional fatigue due to the compounding effects of having to face emergency situations on a daily basis while coping with the personal consequences of the earthquake including damaged houses, rebuild and insurance challenges. *Chajá’s* story in particular, illustrates how socio-economic pressures have had an even greater impact on Kaiapoi families with limited financial resources (‘working poor’) in comparison with the broader community, exacerbating the decline in human and social capitals in the Waimakariri District. The third narrative, *Tamandua’s* story, showcases how this developer’s accumulation of cultural, social, symbolic, political, moral, economic, and built capitals enabled him to occupy a central position in the field of regeneration. In this position he engaged with the community and the Council to address both community challenges and needs (business opportunities that respect the small town attitude), while ensuring his own personal need to make a profit was met. As a result, an alignment between the developer’s ‘vision’ and Council planning instruments was achieved that facilitated the materialisation of a community informed, Council regulated, and developer-led town centre redevelopment projects.

Overall, this chapter highlights the distinct shaping of a third post-earthquake phase characterised by development and business regeneration, as well as by cumulative levels of stress and emotional

exhaustion in some sectors of the community from continuous exposure to emergency situations and socio-economic deprivation. The close interrelations between physical and metaphysical capitals, which characterise the practice of redevelopment, are highlighted during regeneration. An exemplar of this can be found in the way *Tamandua's* pragmatic and moral relations with Council and community helped this actor occupy a central position in the redevelopment of Kaiapoi's Town Center (built, symbolic, cultural, social, political, and moral capitals).

In conclusion, the narrative analysis results showcased in this chapter are consistent with the content analysis which indicated that, although capitals are theoretically constructed as isolated conceptual silos, in practice, they constitute highly uncertain, unpredictable, dynamic, complex, and unfinalised assemblages of conceptual categories of capital. Capitals are combined, they can be accrued, and they can erode in unseen or unpredictable ways across time and in different sectors of the community affecting capital distribution. This chapter illustrates how, seven years on after the Canterbury earthquakes' sequence, specific sectors of the communities in the Waimakariri, such as 'the working poor families' and 'emergency responders', continue to face earthquake-related consequences associated with a marked decline in human and social capitals. This decline is manifested as increased levels of social isolation, stress and anxiety in the community. The chapter demonstrates that human and social capital decline is underpinned by compounding factors such as the long-lasting psycho-social effects of earthquake related issues, including: insurance battles, EQC claims, the loss of employment, damaged and reduced housing stock, as well as macroeconomic trends such as variations on dairy farming prices and increasing living costs.

Built capital redevelopment and regeneration efforts associated with the residential red-zone and town centre have also continued long after the earthquakes. Findings demonstrate that developers hold a central position in the field of regeneration which is secured through their ability to project and materialise development projects by accruing and mobilising significant amounts of economic, built, social, cultural, symbolic, political, and moral capitals.

The findings presented in this chapter may be usefully drawn on to inform long-term recovery planning and practices. As an exemplar, highlighting the necessity for sustaining public funding to ensure resilient health and wellbeing in the region may encourage recovery planners to give further consideration to mechanisms that enable local mental health and social services to provide sustained effective care following extreme events.

8.1. Introduction

This chapter concludes this thesis by presenting key findings that address the research aims, which were (i) to critically evaluate how community capitals are constructed and utilised in community resilience literature and practice; and (ii) documenting how community capitals were mobilised in the post-earthquake context of the Waimakariri District. These aims were addressed through three main research objectives: i) Design a conceptual framework based on a review of the resilience and community capitals literature to explain how different forms of community capitals influence earthquake response, recovery and regeneration in the context of the Waimakariri District. ii) Explore the effectiveness of the conceptual framework by applying it in the Waimakariri District to document the way in which capitals are drawn on and mobilised in the earthquake response, recovery and regeneration process. And, iii) Develop practical implications of the research findings for locality specific and wider risk governance and resilience building efforts in Aotearoa New Zealand.

A novel conceptual framework, called the Community Resilience Capitals Framework (CRCF), was developed through a review of literature on Social-Ecological Systems (SES) theory, community resilience theory, and multi-capital frameworks. The CRCF framework is presented in this chapter. A mixed-methods approach was applied exploring the breadth and depth of Waimakariri post-Canterbury earthquake recovery stories to investigate the effectiveness and flexibility of the framework to explore capital dynamics within participant's community resilience building processes and experiences.

Key empirical findings are also presented in this chapter and show how short-, mid-, and long-term disaster recovery can be conceived of as a short- (immediate response), mid- (recovery), and long-term (regeneration) process of earthquake recovery. Successive stages to the process such as immediate response, recovery, and regeneration can also be conceived as social fields in which capitals are mobilised and power exercised.

This chapter also describes findings which demonstrate how community capitals were drawn upon, combined and mobilised as capital assemblages in the fields of immediate response, recovery, and

regeneration pertaining to the restoration of the Waimakariri. In addition, the practical implications of this research for community resilience building processes in New Zealand are identified and described in this chapter. In the following section key findings are presented and consideration is given to the effectiveness and applicability of the CRCF and its three interconnected conceptual components (i.e., CRCa, CRCo, and CWBRS).

8.2. Community Resilience Capital Framework

CRCa was initially defined as a set of individual, collective, physical and metaphysical capitals used to build adaptive community well-being priorities in the context of uncertainty and change. In practice, the concept of CRCa was informed by participants' narratives where capitals were made visible using capital proxies. Content and narrative analysis facilitates identification of the capitals considered during this research and empirically informs the construction of the CRCa concept as physical and metaphysical capitals drawn on to overcome challenges. One specific example can be found in *Kururú's* narrative in which police emergency responders accrual of multiple types of capital was associated with a strong sense of legitimacy to lead emergency response actions (symbolic capital). In addition, CRCa was also presented in *Kururú's* narrative as a disciplined habitus (cultural capital), strong social cohesion within the police force (bonding social capital), and a strong sense of moral responsibility over the community (moral capital). In this instance, CRCa is directly associated with the accumulation of cultural, symbolic, moral, and bonding social capitals found in his narrative. Another example can be found in *Pitanga's* narrative which describes a strong sense of legitimacy to lead (political and symbolic capitals), a sense of pastoral care over the community (moral capital), strong social connections (social capital), and shared lifestyle upon which the Motorcamp's response was developed (cultural capital). Although identifying capitals as CRCa may be considered simplistic, using compartmentalised conceptual categories (capitals), in practice, as well as identifying the ways in which capitals were combined and mobilised to inform the concept of CRCo is significantly more complex. This will be explained in the following paragraph.

CRCo is theorised as the process through which capitals are accessed and mobilised by individuals or collectively across any given community. In these terms, capitals appear in participants' narratives as complex assemblages of concepts instead of isolated or compartmentalised forms. This complexity can be illustrated by revisiting the analysis of *Yaguareté's* narrative, which described his leadership role in the Pines and Kairaki Beach recovery process. Through his narrative it is possible to see how *Yaguareté* had access to 'legitimate' knowledge production techniques and language

through his designer praxis and his engineering connections (a combination of symbolic, cultural, and social capitals). He had the ability to dialogue fluently with community residents and Council staff (another combination of cultural and social capitals). Additionally, he also had a strong sense of moral responsibility towards the community, which he felt a part of (moral capital). However, it was the combination of these capitals that gave him the necessary symbolic and political capital to represent his fellow residents during recovery. In this case, *Yaguareté's* leadership position in the Pines and Kairaki recovery process was constructed upon an assemblage of symbolic, cultural, social, moral, and political capitals. Examples like this one suggest that CRCo is characterised by highly complex processes of assembling and/or transforming physical and metaphysical capitals into capital networks. Furthermore, analysis of participants' narratives also highlights how specific metaphysical capitals such as cultural, moral, symbolic, and political capitals, can have an important influence on the way capitals are mobilised across a community to materialise different well-being priorities. This last point will be further developed in the next paragraph.

CWBRS can be understood as collectively agreed upon well-being, resilience, and sustainability priorities (CWBRS). Yet, analytical findings indicate that collectively agreeing upon CWBRS priorities is far from simple. Research results suggest that different sectors of the community might have very different perspectives, and establishing an agreement between these sectors can often be very hard to achieve. An example can be found in the contrast between two sectors of the Kaiapoi community. According to (*Kururú*), who was part of the Kaiapoi Residents Association leadership (*Kururú*) and represented a sector of Kaiapoi residents, the red-zoning process and resulting Crown offers were positive for community well-being. In contrast, the red-zoned residents who decided to stay in their red-zoned homes such as *Pindó* and *Karumbé* held diametrically opposed views eliciting a different set of well-being, resilience and sustainability priorities. However, both sectors are part of the wider Kaiapoi community which shows how creating collective agreement over post-disaster priorities in heterogeneous communities can be a contentious and complex process.

CRCo and CWBSR required further investigation to better understand capital mobilisation dynamics, their relation to well-being and resilience priorities, and the overall effectiveness of the framework to explore these elements in the context of participants' community resilience building experiences. The critical theoretical approach to analysis has facilitated an exploration of the relations between CWBRS priorities and the mobilisation of capital through CRCo. The implementation of the critical theories described in Chapter 3, namely Bourdieu's theory of fields and capitals, Foucault's theory

of power, and Harré's theory of social positioning, yielded better understanding of these complexities. These complexities and the CRCF's effectiveness to explore capital dynamics will be described in the following sections.

8.3. Disaster recovery and fields

One of the key conclusions of this thesis is that the different stages or 'fields' of response, recovery and regeneration can be constructed as multi-scalar, interrelated and permeable, hierarchical, and dynamic fields of power. These characteristics are discussed in the following paragraphs.

Firstly, disaster fields have well-defined actors across different scales which make these fields multi-scalar. For instance, in the field of recovery, actors such as international reinsurers can co-inhabit the field with locally based residents associations, like the Pines and Kairaki Beach Association described by *Yaguareté* in chapter 6. Each actor can move or be moved within the field to occupy central (dominant), bridging, linking and marginal positions in the field. Position is directly determined by accrual (CRCa) and mobilisation (CRCo) of multiple types of capital including social, cultural, political, symbolic, moral, natural, and human capitals. Furthermore, actors that mobilise significant economic capital such as the international reinsurers can also produce cascading effects in the field. Through requiring 'hard' science to provide certainty and reduce private as well as public economic exposure, international reinsurers and central government may have created a situation in which residents and local authorities were excluded from land assessment and related knowledge production processes. These processes contributed to the physical displacement of local residents from their homes, and the trajectory of local recovery efforts ultimately affecting community well-being.

Secondly, immediate response, recovery, and regeneration should not be understood as stand-alone and independent fields, but rather as a highly interrelated temporal and spatial continuum of social-ecological circumstances in constant state of change. As an example, the erosion of human capital associated with the exposure of local police emergency responders to frequent stressful situations (e.g., loss and damage of their own homes, response to multiple extreme events, daily exposure to extreme situations) commenced in the immediate response field. However, this erosion of human capital permeated and was compounded while transitioning through the fields of recovery and regeneration. Additionally, although each field (immediate response, recovery, and regeneration) has unique characteristics (such as differences in how, and where actors position themselves and others in the fields, and the issues emerging from participants' narratives), all fields

share a common characteristic: a hierarchical internal structure. The hierarchical structuring of immediate response, recovery, and regeneration fields in the Waimakariri region following the 2010-2011 earthquakes is explained in the following paragraphs.

All fields had different actors who positioned themselves or were positioned by others in a hierarchical arrangement in the various fields. Positions within each field were underpinned by accumulation of diverse forms of capitals (CRCa) including linking and bridging social capital, symbolic, moral, political, economic, cultural and built capitals. Accessibility to capital accumulation (CRCa) legitimises and naturalises hierarchical positioning across all fields. Actors with significant CRCa can hierarchically exercise power over dispossessed stakeholders marginalising the community members that challenge their dominance and the interests and CWBRS priorities they represent and embody. Exemplars include the way civil defence authorities like *Kururú* (Police) or *Tacuara* (Local Government) position themselves in their emergency response narratives, the way in which insurance and reinsurance companies are situated in the recovery field, and the way developers like *'Tamandua'* are established in the regeneration field. Marginalised positions are evidenced in *Pitanga's* storying of the Kairaki Beach Motorcamp's placement at the border of the immediate response field and *Yaguareté's* location of the red-zone stayers in the margins of the field. Equally, the working poor's situation in the field of regeneration as narrated by *Chajá*.

Finally, although fields do share some common traits such as the ones described above, they present situational characteristics that differentiate them from each other making these fields distinct and dynamic in nature. The following sections will describe some of the distinctive situations that characterise each field in which CRCa was mobilised as CRCo.

8.3.1. The field of immediate response and capitals

The Waimakariri's field of immediate response is characterised by frequent references to built and human capital. Content analysis showed that although 'people' appeared at the centre of the response narratives, words such as 'earthquake', 'community', 'Council', 'works', 'Kaiapoi', and 'water' also appeared frequently indicating that 'people', although at the centre, were surrounded by issues associated with cultural, social, built, political, and economic capitals.

Narrative analysis of the stories of *Kururú*, *Tacuara*, and *Pitanga* showed that the central position of the response field was dominated by formal actors including official civil defence authorities, the police force and WDC. These actors had accrued CRCa in the form of organisational capital that could

be drawn on and mobilised through CRCo to solve emerging issues. However, capital mobilisation (CRCo) was underpinned by cultural capital. An example of this can be found in the way Local Council staff such as *Tacuara* set 'work', 'school', and 'home' as CWBRS priorities associated with a 'normal' productive habitus (embodied cultural capital). However, during the initial stages of the response, in focusing on these 'normal' CWBRS priorities Local Council's emergency response marginalised actors with less CRCa who stood outside of the boundaries of the 'work', 'school', and 'home' normality. An example of such actors can be found in the Kairaki Beach Motorcamp community characterised primarily by retired people living in caravans, and residents who enjoy a fishing and boating lifestyle. Furthermore, in addition to prioritising 'normality' Local Council's also prioritised human public health as narrated by *Tacuara*. Prioritising human public health resulted in the disposal of raw sewage onto the Kaiapoi River and Kairaki coastline which can be conceived as parts of a larger indivisible living being which incorporates the mountains, tributaries, and sea as an integrated river system (Muru-Lanning, 2016). Being marginalised from the field of immediate response exposed these living entities to potential harm associated with the dumping of untreated sewage on them.

8.3.2. The field of recovery and capitals

The field of immediate response transitioned into the field of recovery as issues changed to political, economic, and human capital related challenges such as insurance, home repairs, and land re-categorisation. In this context, content analysis indicated that again 'people' appeared at the centre of the recovery narratives, but words such as 'housing', 'money', 'government', and 'insurance' highlight different issues associated with human, political, social, economic, built, and cultural capitals.

Narrative analysis of the voices of *Yaguareté*, *Yarará*, and *Apereá* suggested that the recovery field was dominated by actors such as Central Government, as well as insurers and reinsurers who set national public interests and the stability of financial sector of New Zealand as CWBRS priorities. These actors accrued capitals as CRCa that could be drawn on and mobilised as CRCo to secure their CWBRS priorities through establishing a dominant recovery discourse about the structural and financial unviability of remediating the damaged land. Actors with less accrual of capital (CRCa) who had a different set of locally driven CWBRS priorities such as being able to remain on their homes despite the red-zone challenged central government's dominant land damage discourse and CWBRS priorities. However, capital dispossessed actors who challenged the dominant CWBRS discourse,

were marginalised from the field of recovery or compelled to accept the dominant CWBRS discourse and faced displacement from their land.

8.3.3. The field of regeneration and capitals

Finally, the field of recovery evolved into the field of regeneration which was characterised by frequent references to political and human capital. Similar to the two previous stages, content analysis demonstrated that ‘people’ were at the centre of the regeneration narratives, but words such as ‘community’, ‘councils’, ‘development’, ‘buildings’, ‘housing’, and ‘business’, related to diverse issues associated with human, political, social, economic, built, and cultural capitals.

Narrative analysis of the interview talk of *Kururú*, *Chajá*, and *Tamandua*, showed that leading positions in the regeneration field were occupied by key stakeholders including the WDC and land developers. These stakeholders accrued capitals as CRCa that could be drawn on and mobilised as CRCo to respond to emerging CWBRS priorities such as the redevelopment of Kaiapoi’s Town Centre and Red-zoned land. However, other actors, such as police emergency responders, mental health and social service providers, as well as socio-economically deprived sectors of the community continued to experience significant loss of human capital. The erosion of human capital manifested itself as stress and anxiety underpinned by multiple earthquake and non-earthquake compounded pressures associated with built, economic, and natural capitals such as: non-resolved housing and insurance issues (built and economic capital), droughts (natural capital), earthquakes and aftershocks (natural capital), increased costs of living and debt (economic capital), and loss of household income (economic capital). In addition, due to their lack of access to CRCa, these actors and their CWBRS priority to address the emerging psycho-social issues, were also marginalised from the regeneration field.

In conclusion, the key findings presented in these past sections show that the novel and evolving CRCF is an effective framework to construct an understanding of how physical and metaphysical capitals were and are accrued as CRCa and mobilised as CRCo in this district’s community resilience building practices.

8.4. Implications of research findings for planning and emergency management policy and practice

Key research findings show that resilience discourses found in documents such as the National Disaster Resilience Strategy (2019) (NDRS) can be hard to implement in the context of

heterogeneous communities due to the complex multi-scalar capital interrelations that characterise the various post-disaster fields. Practical implications for immediate response, recovery, and regeneration are summarised below.

The necessity to centralise political capital in executive and hierarchical decision-making is well recognised in emergency response policy and legislation such as the Civil Defence Emergency Management Act, 2002, the CDEM Acts subsequent 2012 amendment, the CDEM Strategy (2008), the CDEM Plan (2015), and the recently released National Resilience Strategy (2019). Centralised political capital characterised by executive decisions and a hierarchically structured chain of command in emergency situations can save lives by reducing response time and increasing response efficiency. However, researchers such as Marchezini (2015), Kenney & Phibbs (2015), and Lambert (2014) suggest that executive and hierarchical chains of command also tend to homogenise what are heterogeneous communities resulting in the marginalisation of those who do not share the dominant cultural capital (*habitus*). *Kururú's* narrative indicated that the New Zealand Police's sense of authority, legitimacy (symbolic capital) and leadership (political capital) in immediate response was based on their disciplined and trained emergency response *habitus* (cultural capital). Yet this *habitus* led to the marginalisation of indigenous cultural practices as well as informal civil emergency responders. Put differently, executive and hierarchical chains of command that reinforce the dominant cultural capital in the field of immediate response can pose a serious risk of social and cultural capital erosion. Furthermore, research findings also show how 'normalised' productive cultural capital can be prioritised by CDEM and local government over other forms of life (Kaiapo River and Kairaki Coastline) and cultural capital (Kairaki Beach Motorcamp community). As participants indicated, in the context of heterogeneous communities, it is essential to ensure that centralising political capital and prioritising 'normalised' cultural practices does not result in the systematic marginalisation of isolated rural communities, Māori, and 'non-professionalised' civil emergency responders. Doing so will enable inclusive responses that enhance social, cultural and natural capitals in accordance with the NDRS (2019).

The complex multi-scalar relations that underpin capital mobilisation in the field of recovery can further inform policy implementation associated with the NDRS as the following finding suggests. Economic and political capital accumulation by a few key actors or stakeholders can pose barriers to implementing participatory recovery processes such as the recovery approach recommended in the NDRS (2019). An example of this can be found in the way the insurance and reinsurance sectors

were able to accrue significant political capital by providing the necessary economic capital to stabilise New Zealand's financial markets. In exchange, central government provided reassurance to the insurance and reinsurance sectors through executive, top-down, and scientifically informed decision-making that would reduce their financial exposure, and provide stability for home-owners and the national economy. However, this situation simultaneously led to the marginalisation of Local Council and local residents from the knowledge production process that led to the red-zoning process and the displacement of thousands of residents from their homes. In addition, the ongoing reliance of government on the insurance and reinsurance sectors reinforces these stakeholders' accrual of political capital. The overall accrual of capital by stakeholders in the insurance and reinsurance sectors not only exceeds that of local communities, but possibly also the Government's political capital base as well. This situation can create a significant barrier to developing the locally led, participatory, inclusive, reflective, and compassionate recovery processes described in the NDRS.

This research also informs long-term recovery planning and the NDRS 2019 acknowledges the importance of long-term holistic recovery. Findings from this research indicate that human and social capital erosion manifested as increased psycho-social negative effects of the earthquake such as emotional and physical stress, child anxiety, family violence, and suicide are still present in Waimakariri's communities. Furthermore, this research indicates that the longer-term erosion of human and social capital in the Waimakariri is still compounded by broader built, economic, and natural capital related processes (damaged homes, drought, increased costs of life, reduced household income) after seven years of recovery. Districts like the Waimakariri face difficulties in accessing resources to address this longer-term erosion of human and social capital. The lack of adequate and long-term financial support (economic capital) for social and mental health service providers in the Waimakariri has hindered their ability to cope and respond effectively to the long-term erosion of human and social capital erosion (SSW, 2016, 2017, 2018), and translate the NDRS strategy's intentions into local reality.

8.5. Recommendations for future research

CRCF can be used to assess the equitability of community resilience building processes in practice and thus contribute to shaping inclusive response and recovery decisions that are fair to all community sectors, and which facilitate effective coping and recovery from unexpected extreme events. The CRCF can produce such assessments by providing a conceptual and methodological

framework to identify capitals accrued by different actors as CRCo and describe how they are mobilised and drawn on (CRCa) to secure CWBRS priorities through-out the different post-disaster fields. By identifying capitals and how actors draw on them, CRCF can also be used to identify hierarchical power relations between sectors of the community in the post-earthquake context. However, as valuable as assessing the equitability of community resilience building processes through capital distribution and hierarchical power relations may be, the future practical implementation of the framework can pose challenges for potential users, and these issues will be discussed in the following paragraphs.

In the case of this research, the CRCF was implemented by a single researcher, trained in inter and trans-disciplinary²⁴ research and through a complex mixed-methods data gathering and analysis approach underpinned by critical social theories. Potential users of this framework will require access to this type of expertise as well as familiarity with critical social theory. These type of capabilities often found in research and consultancy organisations, such as Universities, consultancy firms, or national public organisations (e.g., Ministry of Social Development, Ministry of Business, Innovation and Employment). This means that the implementation of future research that uses CRCF will still require partnerships that connect the capabilities found in research organisations such as Universities, consultancy firms, and national public organisations with Local Councils or Local community based organisations interested in assessing community resilience building processes in their communities.

8.6. Final reflections

In summary, this research shows that capitals can be theoretically constructed as compartmentalised conceptual categories and accrued by actors as CRCa. However, in practice physical capitals, such as built and economic capitals, and metaphysical capitals, such as symbolic, cultural, social, political and moral capitals, are assembled and mobilised through CRCo shaping complex unfinalised capital assemblages. Furthermore, in the context of heterogeneous communities, actors with significant CRCa can assemble and mobilise their capitals to impose their own set of CWBRS priorities onto other actors with less CRCa and different or contending CWBRS priorities and therefor shape hierarchical power relations in post-disaster fields. Further research

²⁴ Inter-disciplinary research is a type of research that integrates different scientific disciplines; trans-disciplinary research is a type of research that integrates different bodies of knowledge beyond scientific disciplines (i.e., traditional, indigenous, experiential bodies of knowledge).

needs to take these interrelations into account because not recognising the inherent complexity and power relations that underpin real-life disaster recovery in heterogeneous communities can hinder equitable and inclusive community resilience building processes recommended in legislation and policy documents such as the NDRS.

In simpler terms, it can be said that after the earthquakes, the Waimakariri District Council designed and implemented what was called an Integrated Community Based Recovery Framework. They designed the framework based on strong political, social, and moral capital pillars such as: inter-institutional integration and communication, participation, local knowledge, and social justice. This approach enabled further development of community capitals through diverse initiatives including artistic community interventions in the urban environment and communal food forests, amongst others. Yet, interests responding to broader economic and political processes, such as continuous central government interventions, insurance and reinsurance processes, paradoxically contributed to the erosion of human capital. Human capital erosion manifested as increased rates of suicide, and family violence, as well as increased levels of stress across the community. Ultimately, and despite central government, local Council, and community efforts, these broader processes hindered community well-being in the long-term.

The story of the 'Waimak' looked at through the eyes of the novel and evolving CRCF has helped construct an understanding of how physical and metaphysical capitals were and are accrued as CRCa and mobilised as CRCo in this district's community resilience building practices shaping complex (multi-scalar, emergent, uncertain), dynamic, and un-finalised capital assemblages. The complex capital dynamics and power relations that underpin the processes of negotiating and enacting collective CWBRS priorities have been highlighted and identified to be a barrier for equitable community resilience building processes in the context of heterogeneous communities. Acknowledging that these complex power dynamics inherently underpin real-life situations is of essential importance to translate community resilience discourses into community resilience practice. The CRCF, despite its possible limitations, is a tool that offers the potential to facilitate this process.

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APPENDICES

Appendix A: Massey University Human Ethics Committee low risk notification



Date: 20 March 2017

Dear Martin Garcia Cartagena

Re: Ethics Notification - 4000017421 - **Unveiling Community Resilience Capital Networks: An action-research approach to Earthquake Community Resilience & Sustainability in Aotearoa New Zealand.**

Thank you for your notification which you have assessed as Low Risk.

Your project has been recorded in our system which is reported in the Annual Report of the Massey University Human Ethics Committee.

The low risk notification for this project is valid for a maximum of three years.

If situations subsequently occur which cause you to reconsider your ethical analysis, please contact a Research Ethics Administrator.

Please note that travel undertaken by students must be approved by the supervisor and the relevant Pro Vice-Chancellor and be in accordance with the Policy and Procedures for Course-Related Student Travel Overseas. In addition, the supervisor must advise the University's Insurance Officer.

A reminder to include the following statement on all public documents:

"This project has been evaluated by peer review and judged to be low risk. Consequently, it has not been reviewed by one of the University's Human Ethics Committees. The researcher(s) named in this document are responsible for the ethical conduct of this research.

If you have any concerns about the conduct of this research that you want to raise with someone other than the researcher(s), please contact Dr Brian Finch, Director - Ethics, telephone 06 3569099 ext 86015, email humanethics@massey.ac.nz. "

Please note, if a sponsoring organisation, funding authority or a journal in which you wish to publish requires evidence of committee approval (with an approval number), you will have to complete the application form again, answering "yes" to the publication question to provide more information for one of the University's Human Ethics Committees. You should also note that such an approval can only be provided prior to the commencement of the research.

Yours sincerely

Appendix B: Full Massey University Human Ethics Committee approval



Date: 03 October 2017

Dear Martin Garcia Cartagena

Re: Ethics Notification - **SOB 17/28 - Community Resilience Capital Framework: An action-research approach to Earthquake Community Resilience and Sustainability in Aotearoa New Zealand.**

Thank you for the above application that was considered by the Massey University Human Ethics Committee: Human Ethics Southern B Committee at their meeting held on Tuesday, 3 October.

Approval is for three years. If this project has not been completed within three years from the date of this letter, reapproval must be requested.

If the nature, content, location, procedures or personnel of your approved application change, please advise the Secretary of the Committee.

Yours sincerely

Dr Brian Finch
Chair, Human Ethics Chairs' Committee and Director (Research Ethics)

Appendix C: Information sheet



Community Resilience Capital Framework: An action-research approach to Earthquake Community Resilience and Sustainability in Aotearoa New Zealand.

My name is Martín García Cartagena and I am a PhD student from Massey University who is interested in helping communities deal with earthquakes. My main supervisor is Prof. Bruce Glavovic, and my co-supervisors are Dr Corrina Tucker from Massey University, Dr. Christine Kenney from Massey University, and Prof. Iain White from Waikato University. This research is funded by Quake CoRE (a government funded Centre for Research Excellence), and Massey University, and it will help identify what communities need to improve their well-being after an earthquake (e.g., housing, emotional and spiritual support, friends, family, money, political connections, etc.) and how they might do so. The results of this research will seek to bring the opinions, views and values present in the Waimakariri closer to the ongoing recovery and regeneration efforts currently underway in the Waimakariri District.

Your opinion as a member of one of the multiple communities in the Waimakariri District is essential for this purpose, and as such I would greatly appreciate your involvement in this research. I am particularly interested in finding out your views on the following: (1) *The role/s you have played in the Waimakariri going as far back as prior to the 2010/2011 earthquakes;* (2) *What community well-being means to you, and how you see this in relation to the earthquake events;* (3) *What can be done, by whom, and when, to strengthen community well-being.*

Participating in this research will mainly involve providing your time to conduct one or two interviews in the following four to six months. Interviews are expected to take about 60-90 minutes. Interview times will be scheduled at your convenience, and with your permission, interviews will be recorded and transcribed. Interview transcripts will be sent to interviewees on request, while information obtained from the interviews will be stored securely by the researcher for a minimum of five years, and may be destroyed thereafter. The findings will be reported so that the individual identity of participants is strictly confidential, unless participants indicate otherwise. You are under no obligation to accept this invitation.

If you decide to participate, you have the right to: decline to answer any particular question; withdraw from the study (specify timeframe); ask any questions about the study at any time during participation; provide information on the understanding that your name will not be used unless you give permission to the researcher; be given access to a summary of the project findings when it is concluded; ask for the recorder to be turned off at any time during the interview. Finally, I am mindful that the Canterbury earthquakes and the subsequent recovery process generated serious physical and emotional consequences for community members in the region. Having the presence of a support person of your choice (family member, neighbor, friend, etc.) during the course of the interview is an absolutely viable option and encouraged if you feel the topic of the interview (Points 1, 2, and 3 from above) might expose you to any kind of emotional discomfort. This can and will be accommodated in a way that your personal emotional safety, comfort, and privacy are prioritized.

During the course of the fieldwork I will be based in Rangiora. Please feel free to contact either myself or my primary supervisor if you have any questions. Thank you so much for considering this invitation, and I sincerely hope that I hear from you sometime in the very near future.

Yours sincerely

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This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 17/28. If you have any concerns about the conduct of this research, please contact Dr Rochelle Stewart-Withers, Chair, Massey University Human Ethics Committee: Southern B, telephone 06 356 9099 x 83657, email humanethicsouthb@massey.ac.nz

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Appendix D: Consent form



MASSEY UNIVERSITY
COLLEGE OF HUMANITIES
AND SOCIAL SCIENCES
TE KURA PŌRENGA TANGATA

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PARTICIPANT CONSENT FORM - INDIVIDUAL

I have read the Information Sheet and have had the details of the study explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

1. I agree/do not agree to the interview being sound recorded.
2. I do / do not wish to view a copy of my interview transcript for the opportunity to edit it prior to it being used for research outputs.
3. I do / do not wish to receive a summary of findings.
4. I agree to participate in this study under the conditions set out in the Information Sheet.

Signature: Date:

Name:

Please provide your email or postal address here in case you do wish to receive a summary of findings (Point 3):

Appendix E: Semi-structured interview schedule



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Participant Pseudonym: _____ Date: _____

Interview location: _____ Start time: _____ End time: _____

Questions.

1. Could you explain to me what community well-being means to you?
2. With whom or which groups/organizations do you feel you share your opinion on well-being?
3. Based on your own experience, how was community well-being affected/changed after the 2010/11 earthquakes? Can you think of stages/events that triggered changes in community well-being over time?
4. What support/assets do you think your community needed/s to achieve/sustain community well-being after the earthquakes (ex. housing, emotional and spiritual support, friends, family, money, others)?
5. Do you think some people might need different support than others and why?
6. Do you think everybody in the community has access to the support they need/ed? Who does? Who doesn't? Why? Could this be changed? How?
7. What can be done, by whom, and when, to strengthen community well-being in the face of adversity?
8. How do you think that actions to achieve individual well-being could affect well-being at a community level?
9. Do you feel everybody in your community has a say/influence in the way past and ongoing earthquake recovery was shaped? Are there any other agencies that could be more involved? Can or should this be changed? How?