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***OBLIGATIONS OF GOVERNMENTS  
TO ADAPT TO CLIMATE CHANGE: A  
CASE STUDY OF THE SOCIAL  
CONTRACT IN THE BAY OF PLENTY***

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## I. Abstract

The idea of a social contract has its origins in Ancient Greek philosophy coming from famous thinkers such as Plato. It is described as being one of the fundamental aspects of a functioning democratic society that holds governments accountable to their citizens. Climate change, theoretically, could pose issues for the social contract because governments of today must plan further into the future than ever before due to the expected impacts of climate change. In essence, the accountability of a government towards its citizens is altered by climate change as the priorities shift from current issues to ones in the future, with great uncertainty. Additionally, scholars argue that different social contracts provide lenses to see how obligations for governments can differ in terms of the ideal expectations versus the reality. This research intends to explore this idea further by looking at how climate change adaptation may alter government accountability by using the lenses of three different social contracts that scholars have recently come up with. These lenses are the legal, practiced and imagined social contracts. To do this a case study was employed in the Bay of Plenty, in New Zealand, to look at how local and regional councils facilitate climate change adaptation responses. More specifically, this research looked at three different sectors of government activities in the region that influence adaptation responses. The first of these was how institutions facilitate adaptation responses. The second was how policies facilitate adaptation responses. The third was how council considerations of climate change facilitate adaptation responses. These three sectors were chosen as they lined up with the three social contract lenses that observe how government obligations may differ. By observing the differences between the obligations of these different social contracts, the research was able to gain insights on the expectations of governments versus what the reality is and how these were formed. The research did this through the application of empirical evidence obtained from semi-structured interviews with policymakers from several regional and district councils in the Bay of Plenty and a documentary analysis of relevant council policies.

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# CHAPTER 1 INTRODUCTION

This chapter provides an overview of the study. Firstly, it addresses the research problem and background to the growing requirement in literature that states there needs to be wider analytical lenses to understand complex societal relations by introducing the social contract. Additionally, it presents the need for further research on climate change adaptation and using different social contracts, provided by Pelling and Blackburn (2018), to understand how government obligations to adapt can vary between expectations and reality. Secondly, this chapter describes the New Zealand context of adaptation and governance, where it concludes that using a social contract lens will add to the scholarship of government accountability regarding climate change adaptation. Thirdly, this chapter presents the case study of this research, i.e. the Bay of Plenty, and justifies the rationale of using the social contract lenses provided by Pelling and Blackburn (2018), which will enhance the understanding of different government obligations and how these are produced. Lastly, this chapter concludes with the objectives and key questions for this study.

## 1.1 Setting the Scene – The Growing Requirements for Social Contracts in Climate Change Adaptation

The Anthropocene has caused discussion in literature regarding the urgent reflection on the solidity, fairness and futurity of current dominant development trajectories (Folke, et al., 2002). In particular, the advent of climate change has raised awareness of the need for transformational adaptations to achieve sustainable development across all generations (Eriksen, et al., 2011). Moreover, this has left important questions on clarifying what adaptation futures are sought and defining what constitutes as fair governance in these adaptive shifts (Pelling, O'Brien, & Matyas, 2015). Consequently, there is a growing literature base on the need for developing wider analytical tools to discern power relations in an ever-changing landscape of complex societal relations to further transformational development agendas (Pelling & Blackburn, 2018).

One of the proposed ways to do this is to use the lens of a social contract which traditionally constitutes the power relations between citizens and the state based on explicit or tacit consent (O'Brien, Hayward, & Berkes, 2009). To elaborate further, the authority a government commands towards its citizens represents the legitimacy of a functioning social contract where elected representatives and government officials consider the best interests of their region and enact them into policy (Christoplos, Ngoan, Hoa Sen, Thanh Huong, & Lindegaard, 2016). Hence, citizens expect governments to be responsible for decisions on matters that are out of their control because of the



social contract that is established where people give up their freedom to rule over themselves in exchange for social order and security (Gauthier, 1969). Furthermore, social contracts are socially constructed paradigms of government authority, which makes them prone to change and deconstruction (Lewis, 1939). In essence, this implies that social contracts are constantly susceptible to renegotiation between citizens and states. Thus, it is here where the social contract lens has been argued to be beneficial in presenting the reality of power relations between citizens and states, which could therefore describe shifts in governing behaviours that are either necessary for, or act as a pathway of, transformational adaptation (Pelling & Blackburn, 2018).

It has only really been in the last 10 years where the language of the social contract has entered the atmosphere of climate change adaptation literature, and at best it has been broad on explaining how certain rights and responsibilities have been distributed (Pelling & Blackburn, 2018). For instance, climate change adaptation has been argued to test the authority of governments because it creates a dilemma that transcends timescales and causes vast uncertainties and an uneven distribution of burdens, which citizens have no control over (O'Brien, Hayward, & Berkes, 2009). This implies that the best interests of citizens, with regards to climate change, extend beyond the timeframe of the citizens that currently exist as more emphasis must be placed on future generations than ever before. Moreover, this also infers that current governing bodies will need to have the prudent capability to provide for citizens that are alive now, as well as balance this with the needs of future generations. In essence, the argument that is offered by scholars is that the process of climate change adaptation may alter traditional conceptions of government accountability under the social contract which may require transformational changes of governance (Adger, Quinn, Lorenzoni, Murphy, & Sweeney, 2012).

However, Pelling and Blackburn (2018) have stated that these kinds of assumptions do not necessarily interrogate through which the relations of this change in accountability is produced. More specifically, the contractarian theory that is used in adaptation and social contract studies has inherent limits where it can fail to point out representation, leverage, empowerment, risk perception, and citizen agency that are crucial in understanding complex societal pressures (Pelling & Blackburn, 2018). Thus, it is argued that social contracts are defined as multiple and constructed, and the mapping of these could reveal different layers of government accountability, obligations and expectations (Adger, Quinn, Lorenzoni, & Murphy, 2018). Pelling and Blackburn (2018) have created a framework to analyse this gap in literature which constitutes of legal, practiced and imagined social contracts that can be interdependent and/or independent in how they interact with one another. Therefore, it is argued that by applying these social contracts as lenses researchers can gain insights to describe the distribution of rights and responsibilities and/or citizen expectations and experiences of the state, as

well as how these are produced by their interactions (Pelling & Blackburn, 2018). Ultimately, this may give greater depths of understanding for the role of governance on climate change adaptation (Christoplos, Ngoan, Hoa Sen, Thanh Huong, & Lindegaard, 2016). Essentially, this research intends on exploring as well as testing this idea further by applying multiple social contracts to understand how government accountability is altered by climate change adaptation. The purpose of this is to add to the literature of social contracts on climate change adaptation as a potential lens to understand wider societal pressures for transformational change in governance to meet the requirements of sustainable development.

## 1.2 Climate Change in New Zealand – The Need for More Accountability

New Zealand has a relatively mild climate which people have become accustomed to and now rely on to make a living. For instance, in agriculture the difference between a good production year and a bad one, affected by a severe drought, can be as much as 1.5% of GDP, or over \$1 billion (Mullan, Tait, & Thompson, 2006). Additionally, low rainfall and snowfall seasons can dramatically lower the levels of storage lakes that supply hydroelectricity, the main form of power supply for the country (Mullan, Tait, & Thompson, 2006). Moreover, tourism is also a major economic factor which is climate dependent and equivalent to 11% of GDP in New Zealand. Although weather is not a key driver for tourism, it is an important facilitator in New Zealand (Mullan, Tait, & Thompson, 2006). Additionally, New Zealanders tend to have beach lifestyles with around 65% of the population living 5km away from coastal areas (Statistics New Zealand, 2017). Thus, New Zealanders have become accustomed to a mild climate, however with the advent of climate change and its impact on the environment this comfort becomes fragile. For instance, average temperatures are expected to increase, sea levels are expected to rise, and rainfall is predicted to be less frequent but more intense (Ministry for the Environment, 2018). It is already estimated that every dollar spent on disaster risk reduction now saves around \$3-\$11 in disaster costs by avoiding losses and disruption, but with the additional costs of climate change adaptation, due to an increase in abnormal weather events, this figure will likely rise (Boston & Lawrence, 2017). This gives some urgency for governments in New Zealand to prepare and adapt to the impacts of climate change.

However, New Zealand has been argued to have a relatively decentralised government, due to neoliberal reforms in the 1980s, which has transferred power from the central government over to local and regional councils (Mulgan, 2010). This has the implication that local and regional councils have more responsibility to deal with matters within their districts, without national assistance (Krupp, 2016). One of these matters is adapting to climate change which was made apparent by key pieces of

legislation such as the Resource Management Act 1991, and the amendments that followed, which handed responsibility to local and regional governments to respond (Lawrence, et al., 2015). Consequently, there have been several studies and technical workshops facilitated by researchers in New Zealand examining the limits to adaptation and the barriers that local and regional governments face (Climate Change Adaptation Technical Working Group, 2017). These have provided insights into how local and regional governments tend to be under-resourced and how national legislation is inadequate in allowing for consistent decision-making frameworks for councils to produce effective adaptation responses (Lawrence, et al., 2015). However, there has been little research done specifically on how climate change alters the social contract for governments in New Zealand. Thus, the lenses provided by Pelling and Blackburn (2018) provide an opportunity to explore the social reality of how climate change adaptation is ingrained into government agendas and understand the differences between social contracts which can reveal what the expectations of governments versus the reality. Essentially, these differences can add to literature on climate change adaptation in New Zealand by providing another perspective to look at the issue as well providing insights into how governments view their own obligations to respond.

### 1.3 Bay of Plenty – A Regional Case Study to Differentiate Social Contracts in Adaptation

This research employed a case study approach to understand how the different social contracts operate in relation to government responses to climate change adaptation. This is because the scope of this research is limited to one year, therefore it was practical to choose a regional based case study to examine how the social contract may be influenced by climate change. Thus, the Bay of Plenty was chosen as the case study for this research because of the region's known susceptibility to the impacts of climate change as well as its history of natural hazards causing problems for people living there. For instance, the Western Bay of Plenty District Council's response to the coastal erosion of beaches in Waihi in the early 2000s illustrates the region's susceptibility to coastal hazards, which is expected to be exacerbated in the future due to sea-level rise (Hayward, 2008). Additionally, it showed people's neglect of adaptation responses such as hard protection and managed retreat which the council is looking at initiating (Hayward, 2008).

In this case study, a qualitative approach was taken in obtaining the data by primarily doing interviews with staff from councils in the region and analysing their policy documents on climate change adaptation. This is because this qualitative data would allow for the analysis of how the different social contracts, stipulated in Pelling and Blackburn's (2018) research, operate for councils in their institutional frameworks, the policies they enact on adaptation as well as how they consider climate

change into their decision-making. Thereby, using the legal, practiced and imagined social contracts as lenses will highlight the different obligations councils in the Bay of Plenty have towards citizens regarding climate change adaptation responses. By identifying the obligations these different social contracts posit in the region, it will be possible to see what the differences are between them and how they are produced. Consequently, these can be related back to the idea of the social contract being a potential lens to understand wider societal pressures for transformational change in governance.

## 1.4 Objectives of the Study and Research Questions

Given the issues detailed above, the objective of this study is to gain insights into how climate change adaptation is facilitated by the institutions, policies and considerations of councils in the Bay of Plenty to gain a better understanding of how social contracts are influenced by these factors. To achieve this, the following questions need to be answered:

- What role do institutions play in facilitating adaptation responses and how is the social contract influenced by the dynamics in this realm?
- What role does policy play in facilitating adaptation responses and how is the social contract influenced by the dynamics in this realm?
- What role do council considerations play in facilitating adaptation responses and how is the social contract influenced by the dynamics in this realm?
- Does adapting to climate change alter the traditional conceptions of the social contract?

# CHAPTER 2: LITERATURE REVIEW

## 2.1 Introduction

This chapter will formulate the theoretical framework that will be used to interpret and analyse the data obtained from the research process. In particular, the first section interprets the Intergovernmental Panel on Climate Change's (IPCC) 5<sup>th</sup> Report and its definition of climate change adaptation. The purpose of this is to provide the thesis with a more nuanced view of how this definition is applied within broader international frameworks which is then filtered down to local scales, giving the implication that adaptation is primarily an impacts-based process. Additionally, this section draws the links between Disaster Risk Reduction (DRR) and adaptation in how adaptation is a component of DRR, which facilitates an impact-led approach as mainstream DRR is hazard based. The purpose of this is to foreshadow the mosaic of findings in this research as they are primarily impact and hazard based. The second section of this chapter dwells into the core theme of this thesis which is to understand how social contracts establish accountability as contractarian theorists posit it is a government's duty to protect its citizens from harm. It does this by firstly establishing the origins of the social contract and traditional conceptions of accountability. It then connects social contracts to disaster literature to highlight that social contracts are not static and subject to change if citizens are not protected from harm. The purpose of this is to pave the way for the third section of the chapter, which links the ideas of social contracts and adaptation because the impacts of climate change implicate that governments would be held accountable if they did not respond now. More specifically, the third section insinuates a framework established by Pelling and Blackburn (2018) to analyse how climate change adaptation makes social contracts susceptible to change in the legal, practiced and imagined realms, which challenges traditional conceptions of accountability. As a result, these frameworks will be utilised to frame the findings and discussions sections in the later chapters of this thesis.

## 2.2 Climate Change Adaptation Definition in IPCC

This section intends to define what climate change adaptation means by looking at how scholars and research organisations have framed it. It is important to understand how adaptation can be defined, because it is this definition which is then used in policy outlooks from international institutions, which is then filtered down to national, regional and local scales. Understanding the origins of these definitions will allow for a more enhanced and nuanced view of how local and regional governments define adaptation which also determines their framing and view of the problem and the actions they take to resolve it.

The very first IPCC Report that was published in 1990 mentioned the idea of adaptation, but this was primarily concerned with mitigation rather than being an area of its own. In the first phases of these IPCC reports, the main reliance for adaptation measures was on future climate models and scenarios, although these are still relied on (Eakin & Patt, 2011). The research was primarily mitigation-dependent and used adaptation related initiatives to pursue mitigation measures, rather than focus solely on adaptation options as they were considered taboo and halted mitigation efforts (Pielke-Jr, 2014). In other words, scholars state that adaptation options were another way, or excuse, for countries to negate mitigation initiatives (Burton & Schipper, 2009). Thus, one cannot escape the fact the adaptation was originally brought into the mainstream by questionable motivations.

Despite these origins, since the 1990s adaptation has gained considerable attention on the global, national and local scales, which therefore opened room for more funding, researching and policy-making endeavours. More recently, the 5<sup>th</sup> IPCC Report labels adaptation as *“The process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate harm or exploit beneficial opportunities. In natural systems, human intervention may facilitate adjustment to expected climate and its effects...”* (Noble, et al., 2014). It is important to note that adaptation is described as a ‘process’ because this implies that it is ongoing and ever-changing, rather than a static phenomenon. It is also important to note that the definition also has strong undertones of being an ‘impact-led’ approach. In other words, adaptation is defined as being focused on climate or environmental hazards that are expected in the future. In essence, the current overarching purpose of the impacts-led approach is to estimate the damage-costs of climate change and calculate how adaptation could alter these (Wandel & Smit, 2006). Essentially, this view of an impact-led approach is what most local governments are now dealing with and trying to resolve.

Nevertheless, if there are future changes in the climate that need to be met by adapting, then what exactly are those changes that are supposed to be adapted to? This question has been attempted to be answered by many scholars which has enriched the possibilities of what communities may need to do to adapt. For instance, some scholars have categorised this adaptation issue into three broad classifications (Street, Smit, Burton, & Klein, 1999);

- 1) Long-term changes in means or norms such as sea level rise
- 2) Inter-annual or decadal variability such as rainfall frequency and intensity
- 3) Isolated extreme weather events or weather conditions such as floods, droughts or storms

In essence, these broad categorisations signify that adaptation is the preparation for potential future scenarios. Conversely, one could argue that this has left open a rift of major uncertainty. The mere number of potential things communities may need to adapt to can be overwhelming depending on the context, scenario and scale of the research that has been carried out. For example, some scholars have stated that climate change can drive people's exposures to hazards by changing local environmental conditions so quickly that local knowledge and resources cannot keep pace with. For instance, local food and water resources along with pest management, especially with new species entering an eco-system due to a changing climate (Kelman, 2015). This is but one example and uncertainty is considered to be a major factor in local scale decision making, therefore the next section will cover uncertainty in more detail. Nonetheless, categorisations such as this continue to signify that adaptation is a process that focuses on impact-led approaches, and uncertainty is a major factor that policy-makers must overcome.

### 2.2.1 DRR and Adaptation

This section will explain how adaptation is intrinsically linked to DRR. It is important to note this linkage because adaptation can be considered as a subset of DRR initiatives (Mercer, 2010). In brief, DRR focuses on vulnerability reduction measures which are typically hazard-based and tend to ignore the underlying causes of disasters (Thomalla, Downing, Spranger-Siegfried, Han, & Rockström, 2006). Ideally, DRR should be focused on increasing the political, economic and social capacities of communities or individuals as this would address the underlying causes of vulnerability, but not entirely exclusive of other hazard reduction techniques (Mercer, 2010). Albeit, most of the mainstream adaptation literature focuses on a hazard driven approach towards reducing vulnerabilities (Mercer, 2010). This section will still attempt to uncover the crucial components of DRR and compare them to the mainstream thought on adaptation that are hazard related. The purpose of doing this is to highlight how DRR and adaptation tend to be conceptualised in literature, which are also reflected in international down to local policy mandates on adaptation. The findings of this research primarily show the hazard related side of adaptation measures, but this is because that is the reality and one that needs to be examined in further detail.

One of the ways to introduce adaptation into the mainstream was by placing it in line with DRR initiatives. In DRR, the purpose is to apply measures that would reduce the vulnerability of an affected group to a hazard that currently exists, which may lead to a disaster (Kelman, 2015). These measures sometimes include specific hazard reduction techniques that are built to handle or reduce the impacts of disasters such as flood walls. However, many proponents of DRR also argue that structural measures such as these do not necessarily address the main vulnerabilities of communities that

essentially put them in harm's way in the first place. Usually, it is argued, that a community is vulnerable to a disaster because of the societal condition they are placed in which incapacitates them from responding effectively (Gaillard & Mercer, 2013). Thus, when a disaster occurs these societal vulnerabilities are revealed which range from economic, social, political and cultural origins.

Mambo and Vincent (2017) have argued that climate change adaptation must take a longer-term and more forward-looking perspective. In essence the idea of adapting to climate change will involve the consideration of how it is an example of a "*Major environmental hazard driver and diminisher*" therefore "*indicating the intricacies and complexities involved in trying to understand the overlaps, connections, and interactions amongst environmental hazards*" will be an important aspect (Kelman, 2015). Thus, this distinction shows that adaptation measures do not necessarily address all vulnerabilities in a community, but rather they are more hazard focused as climate change may exacerbate the risk of a hazard in the future and therefore cause a potential disaster.

It is also important to note that increasing incidences of extreme events or smaller climate hazards will not always lead to disasters – for it is the fusion of exposure and a vulnerable population that leads to increased disaster risk and therefore harm to livelihoods (Mambo & Vincent, 2017). Without the risk to human livelihoods, one could argue that climate change adaptation would only have a percentage of the attention it does now. Therefore, other scholars have argued that adaptation and DRR are not necessarily different initiatives and both can complement one another (William, O'Brien, & Leichenko, 2011). Ideally, adaptation and DRR should have the same principle or goal in mind, and that is to reduce vulnerabilities. However, vulnerability's root causes can be traced down to social and political conditions which can be addressed regardless of climate change, whereas treating hazards usually has an environmental component which is not straightforward to influence effectively (Kelman, 2015). Nonetheless, for the most part adaptation can be considered as a narrower objective within general DRR activities which addresses future hazards that are exacerbated or mitigated by a changing climate. Despite the similarities stated above, the reality is that adaptation is usually treated as its own discipline amongst many stakeholders and institutions on a multi-scalar basis (Kelman, 2015). Irrespective of the motivation for adaptation, both purposeful and unintentional adaptations can generate short-term or long-term benefits, which is another way that DRR can be linked to climate change (Adger, Arnell, & Tompkins, 2005).



## 2.3 Social Contracts

### 2.3.1 Introduction

The previous section helped establish a definition of adaptation and what approaches and actions adaptation usually takes in the mainstream. Thus, the purpose of these following sections is to link climate change adaptation to the basic principles of the social contract as this will highlight government accountability in a new light. In theory, climate change and the social contract should be linked because it is a government's responsibility to protect its citizens from harm (O'Brien, Hayward, & Berkes, 2009). In this case, harm is conceptualised as the new hazards that are expected and the old ones that are exacerbated, if the definition of adaptation is the one from the 5<sup>th</sup> IPCC Report. Therefore, adaptation is a process governments could use to protect citizens from the harms of climate change, or even utilise the benefits to enhance their lives (Adger, Quinn, Lorenzoni, & Murphy, 2018). The following sections will therefore cover the conceptual link between the social contract, disasters and climate change adaptation which will inevitably foreshadow a form of accountability local governments are currently struggling to frame that is reflected in the findings section.

### 2.3.2 Traditional Perceptions of The Social Contract

One way to measure government accountability is the commitment local authorities put into protecting their citizens from harm. This idea has its roots from ancient times such as in Greek and Stoic philosophy and Roman and Canon Law. However, it formerly gained traction during the Age of Enlightenment when 17<sup>th</sup> Century political philosopher Thomas Hobbes stated that citizens within a particular political boundary have the expectation that the government will provide social order and security to prevent discord in exchange for the citizen's right to govern themselves (Gauthier, 1969). The term that was used to coin this notion is called the social contract which usually concerns the legitimacy of the state over the individual. In essence, the social contract is an unspoken but well appreciated and essential doctrine that adequately establishes the importance of compromise on one hand, and the honouring of agreements on the other as the fundamental conditions of social co-operation (Lewis, 1939). With regards to government accountability, the social contract emphasises the ultimate artificiality of the state and thereby, whilst it renders people's loyalty more critical, it also produces a more steadfast awareness of political responsibility (Lewis, 1939).

It is important to note that the starting point for most social contract theories is an examination of the human condition that is absent from any political order, or in the words of Hobbes the "*state of nature*" where human life would be "*solitary, poor, nasty, brutish and short*" (Gauthier, 1969). In the absence of political order and law, it is stated everyone would have unlimited natural freedoms and

there would be a state of chaos (Gauthier, 1969). From this starting point, theorists demonstrate why a rational individual would voluntarily consent to give up their natural freedom to obtain the benefits of political order. Moreover, the central assertion that the social contract reaches is that law and political order are not natural but are human creations. Quintessentially, the political order the social contract creates is simply the means towards an end – the benefit of the individuals involved and the ruling rights over them by the sovereign are legitimate only to the extent that they fulfil their parts of the agreement (Lewis, 1939). Hobbes argued that the government is not a party to the original contract and citizens are not obligated to submit to the government when it is too weak to effectively suppress factionalism and civil unrest. Another famous political theorist, John Locke, added to this and stated that when the government fails to secure their natural or satisfy the best interests of society, citizens can withdraw their obligation to obey, or change the leadership through elections or other means including, when necessary, violence (Rousseau, Hume, & Locke, 1948). Thus, the social contract, whilst at its fundamental nature is locked into place to keep society stable, is susceptible to change and even complete deconstruction if a government does not uphold its duty to maintain peace and order in times of crisis.

### 2.3.3 Social Contracts & Disasters

Some scholars have framed how disaster politics may contribute to the overall understanding of how climate change can erode both the moral authority of governments and their ability to govern (O'Brien, Hayward, & Berkes, 2009). This is because in the past disasters have sometimes caused conversations on the political accountability of certain events, and therefore tested the ability of the social contract (Pelling & Dill, 2010). Consequently, scholars argue that a social contract, which is upheld in a governing system and fails to protect its citizens from a disaster, may reach a threshold of unacceptability that results in wider technical, policy or even political change that was underlying the development failures leading to the disaster (Pelling & Dill, 2010). This is illustrated by the events after the 1999 Marmara Earthquake in Turkey. The state had reportedly responded to the earthquake poorly which caused much frustration amongst all the citizens that were impacted directly and indirectly. An underlying factor that exacerbated this was the realisation that the state failed to implement the regulation of building standards pre-disaster. Thus, the erosion of trust in the state opened a policy and political gap, as well as a multitude of other state incompetency and corrupt antics, which provoked increased attention to underlying inequalities and inefficiencies in governance (Pelling & Dill, 2010). Interestingly, the major ruling parties in the Turkish parliament quickly realised that Turkey's main Islamic-orientated political party and a host of Islamic humanitarian relief organisations were heavily involved in the post-quake recovery process. With the government's fear and well recognised poor response, the ruling elites were coming to quick conclusions of a lessened

political term due to pro-Islamic politicians potentially taking the authorities fumbled response to their advantage (Pelling & Dill, 2010). As a result, mass repression of all humanitarian aid and media coverage was ordered by the Turkish government. Whilst this was a clear and decisive political move, the opportunity provided the state to increase centralisation of disaster management and opened space for technical and social policy changes that were more progressive, simultaneously providing a positive set of reforms and a justification for reduced attention to political reform as a measure for risk reduction (Pelling & Dill, 2010). In essence, the high level of public attention garnered by civil society during the crisis, and high rates of volunteer mobilization, opened a potential tipping point for a critical juncture in the social contract with a larger role for independent volunteer groups alongside established civil society and state actors (Pelling & Dill, 2010). This fully highlights the artificiality of the state as people recognised the accountability of the government and displayed strong efforts to deconstruct the social contract to fit their needs.

Another disaster that brought this idea up was Hurricane Katrina in New Orleans 2005. Michael Ignatieff, a Canadian author, academic and former politician, wrote in a New York Times piece that the United States government's failure to provide its citizens with protection from the disaster has undermined the belief in the contract that binds Americans together (Ignatieff, 2005). He wrote:

*"Had they [officials and engineers in charge of the levees] reasoned with any degree of political imagination, they might have started from the premise that there are some harms that a government must protect its people from, however unlikely they may turn out to be, whatever the cost. That is how the British reasoned when they built the hugely expensive Thames barrier, how the Dutch reasoned when they built their flood-control system. In America, a levee defends a foundational moral intuition: all lives are worth protecting and, since this is America, at the highest standard."* (Ignatieff, 2005).

The reason for much of the damage from Katrina can be pinned down to the vast economic, social and racial inequality the citizens of New Orleans had to live with before the disaster. However, the author makes the point that even despite these inequalities, as citizens who had given their rights to be ruled, they were more than entitled to *"levees that would hold, an evacuation plan that would actually evacuate them and a resettlement plan that would get them back on their feet"* (Ignatieff, 2005). The kind of thinking demonstrated by Michael Ignatieff fused with the imposition of climate change can create a whole new and dangerous dilemma. This dilemma is that if there are already government institutions and infrastructures that are not adequately placed to deal with abnormal climate events

now that result in disasters, then the future looks even less promising if extreme climate events are to increase in intensity and frequency in a non-linear fashion.

## 2.4 Social Contracts & Climate Change Adaptation

A phenomenon that could deconstruct original preconceptions of the social contract, and therefore overall government accountability, is the advent of climate change. This is because climate change, that is expected to happen at the scope and scale in the future, is an event modern humankind has never faced before. Some scholars argue that climate change has the potential to change the dynamics of the social contract because governments must place their time and resources on future generations more than ever before (O'Brien, Hayward, & Berkes, 2009). This is challenging because governments must meet the satisfactions of people that currently exist with already limited resources, and balance this with the needs of people in the future so that they are adequately prepared for the impacts of climate change. However, if disaster strikes in the future and creates an elongated period of crisis where governments cannot respond adequately, the social contract can potentially be compromised (Christoplos, Ngoan, Hoa Sen, Thanh Huong, & Lindegaard, 2016). Although it is unlikely that the “*state of nature*”, as described by Hobbes, would transpire and cause an interregnum of chaos. However, there could be mass dispute about the accountability for future disasters that climate change would cause or exacerbate. Therefore, the realities and potentially dangerous implications of climate change add a sense of earnestness to discussions and debates about social contracts (O'Brien, Hayward, & Berkes, 2009). In this sense, the social construct would be deconstructed in a way that suits future generations so that government accountability is not compromised when the impacts occur.

However, if the social contract was fundamentally changed by climate change, then it would be likely that the motives of all governments would be altruistic and looking very far ahead into the future with every decision being as beneficial as possible for future generations. Unfortunately, this is clearly not the case as if it were true there would be a major realignment of societal priorities. Nevertheless, it can still be argued that instead of fundamentally changing the core dynamics of the social contract, climate change just places added responsibility and obligations on governments (O'Brien, Hayward, & Berkes, 2009). This idea has still received little attention in academic literature, but it is crucial because the implications of climate change adaptation still provoke the idea of at least adjusting the notion of government accountability (Adger, Quinn, Lorenzoni, Murphy, & Sweeney, 2012). This adjustment is not likely to be major but examining it in light of the expectations of the social contract can provide interesting insights about how adaptation causes governments to reconsider the way they make decisions for their citizens. However, it is also believed that the more traditional contractarian theories do not capture the essence of other factors that influence government accountability such as

asymmetrical power relations between governing agencies, the policies that are produced and the changing relationship between the citizens and the state (O'Brien, Hayward, & Berkes, 2009). Therefore, Pelling and Blackburn (2018) have proposed three different analytical lenses to observe how climate change may adjust traditional conceptions of government accountability. These are the legal, practiced and imagined social contracts. Essentially, this study intends to examine how adaptation in the Bay of Plenty is framed within these social contract lenses. The next subsections will go over this in more detail.

#### 2.4.1 Legal Social Contract

Pelling and Blackburn (2018) describe that the legal social contract exists in the formally sanctioned distribution of rights and obligations between societal actors, which is defined through legal and constitutional frameworks, which indicates that the distribution may or may not be deemed fair by the individuals it governs. Thus, the legal social contract works in a domain where the institutions are the dominant deciders of what rights and responsibilities are distributed. Institutions, with regards to adaptation literature, are defined as the means whereby transactions between individuals, groups, and states are mediated and made tolerably predictable, thus they define the formal rules of interaction between all actors (Dovers & Hezri, 2010). It is also stated that humans pursue common goals and reconcile differences, respond to threats and opportunities, through institutions and the mechanisms of deliberation and decision-making that are enabled or constrained by institutions (Dovers & Hezri, 2010). Additionally, institutional characteristics and the relationships among them influence and affect responses to change against a backdrop of historical and cultural legacies (Adger, Quinn, Lorenzoni, & Murphy, 2018). Therefore, this social contract lens will be used to analyse whether the institutional values and frameworks of governments are compatible with implications of climate change.

With regards to adaptation literature, there has been little research done on analysing the institutional structures and processes that act to support adaptation implementation on the ground (McEvoy, Matczak, Banaszak, & Chorynsk, 2010). In most cases, especially in developed countries, local governments tend to already have frameworks that help make incorporating adaptation into their bureaucratic functions smoother due to those frameworks usually having principles about environmental sustainability (Fünfgeld, 2010). But this does not necessarily entail that these principles of environmental sustainability uphold the values of long-term adaptation that is required for climate change, as they can primarily be focused on current hazards (Mercer, 2010). Regardless, it is important to note that adaptation has been labelled as a context specific process as local communities are at the forefront of the impacts that are expected to occur, therefore responses must account for geographic

variability and downscaled climate vulnerability analysis (Berry, 2016). Consequently, this has the implication that local communities will essentially bear the costs that are associated with adaptation without the help of national or global assistance, other than policy mandates that are passed down. O'Brien et al. (2009) argue that this is because of global neoliberal reforms in the 1980s and early 1990s that decentralised government agencies and privatised many economies. Consequently, these decentralising mechanisms caused many central governments to pass down responsibilities of managing environmental problems down to local authorities, which therefore implicates that they will also pay for the costs of any initiative (Christoplos, Ngoan, Hoa Sen, Thanh Huong, & Lindegaard, 2016). O'Brien et al. (2009) also state that New Zealand's regulations regarding environmental management were weakened during this phase of decentralisation, which therefore left local governments with little legislative tools to encourage climate change adaptation.

It should also be noted how local institutional frameworks allow for the integration of climate change adaptation. It is stated by Urwin and Jordan (2008) that whilst there has been more of an acute awareness of how this happens in scholarship, there is also a weak evidence base and no accepted way of achieving it. However, much like national legislation, local governments also tend to connect the existing risk management policy and practice, land use planning, as well as political agendas and development priorities with climate change adaptation (Fünfgeld, 2010). However, in this process, there are usually a multitude of barriers that prevent adaptation to be incorporated, or at least hinder the progress (Walker, Adger, & Russel, 2015). A study in California found that the presence of adaptation barriers was present throughout various stages of ingraining it into the wider institutional frameworks of local authorities such as 'understanding the problem', inadequate staff expertise, low levels of funding and limited levels of data collection (Moser & Ekstrom, 2012). Additionally, the study found that an absence of a mandate requiring adaptation planning was observed as an important barrier for local authorities when progressing towards the formulation of action plans on adaptation (Moser & Ekstrom, 2012). Thus, the legal social contract lens could be used to identify how institutions facilitate the legal social contract as certain factors within the frameworks of governments will enable or restrict adaptation, which therefore clarifies what obligations local authorities can hold towards their citizens.

#### 2.4.2 Practiced Social Contract

The practiced social contract is the 'real-life' balance of rights and responsibilities which are performed and claimed by individuals and state actors (Pelling & Blackburn, 2018). In the negotiation of the social contract on climate change, there are trade-offs between objectives such as minimising vulnerability, maximising equity, and promoting system resilience that state actors factor into policies (Adger,

Quinn, Lorenzoni, & Murphy, 2018). It is important to note that implementation of adaptation policies and strategies goes beyond the institutional structures and processes because 'on the ground' factors influence how adaptation responses are carried out (Dovers & Hezri, 2010). For the most part, local governments have their own agendas and priorities which need to be accounted for (Brown, Few, & Tompkins, 2007). Therefore, even if the institutional structural mechanisms allow for adaptation to be easily incorporated into policy mandates, it does not necessarily mean that local governments will fully commit to initiating every adaptation policy possible. This is because they must consider adaptation alongside numerous other policy issues at the table (Brown, Few, & Tompkins, 2007). Thus, this social contract lens will be analysed to understand how policies, which are the replication of 'real-life' balances of responsibilities in the manifestation of physical documents that are created by government actors (i.e. policy-makers), reflect prominent government adaptation responses and how they produce obligations under a changing social contract (Pelling & Blackburn, 2018).

In relation to literature on the formulation of policies, it is stated that the policy cycle model is not necessarily a 'purely rational or logical pursuit' and that 'electoral, budget and other considerations often come into play' (Everett, 2003). Essentially, this means that the policy cycle is not always black and white because major public policies are the outcome of complex rounds of negotiations between interests, choices between values, and a competition between resources (Everett, 2003). Furthermore, the competition of resources would be amplified because more investment of time and materials would need to be positioned towards creating policies that allow for climate change measurements (Roaf, Roaf, Crichton, & Nicol, 2005). In this regard, the practiced social contract can either remain unchanged as the status quo forbids it to adapt, or there is enough interest and resources as well as a revolution in values amongst stakeholders during the time of policy formation for it to be deconstructed (Pelling & Blackburn, 2018).

One of the most prominent methods local authorities use to ingrain adaptation principles into their policies is to climate proof new or existing infrastructures, which typically involves 'hard' measures (Mambo & Vincent, 2017). However, Hallegatte (2009) makes the argument that many decisions have short-term consequences or are weakly climate sensitive, but also many decisions come with a long-term commitment and can be very climate sensitive. These long-term commitments usually bring with them a whole range of uncertainties that must be factored into decision-making. Examples of such decisions include urbanisation plans, risk management strategies, infrastructure development for water management or transportation, and building design and norms which have consequences over periods of 50–200 years (Hallegatte, 2009). Decision-makers usually have to consider factors such as

1/100-year flood events or other natural hazards that are likely to occur within an accepted timeframe into long-term planning. However, scholars argue that climate change alters these traditional decision-making methods because they must account for an increase in abnormality and variability (Hallegatte, 2009). For instance, precipitation changes in Europe according to the previous IPCC reports indicate an increase in rainfall in Northern Europe and a drying in the Mediterranean (Hallegatte, 2009). For a water manager, according to these models, precipitations in Toulouse could remain unchanged or decrease by up to 30% (Hallegatte, 2009). However, the issue is that water manager is also supposed to react to the latter change, which would require large modifications in water management strategies and infrastructures, and to this uncertainty (Hallegatte, 2009). Thus, the result is the creation of a robust framework of actions designed to work well enough across many possible futures based on a variety of accepted levels of risk (Quay, 2010). Therefore, providing a wide set of flexibility mechanisms to deal with a multitude of differing future scenarios requires more planning and investment by local authorities, but may allow the spreading of costs out over time and reducing losses if investments must be abandoned (Quay, 2010). Ultimately, the flexibility of policies that posit a robust approach would indicate governments are extending their obligations to citizens under the practiced social contract because they are accounting for more than one scenario of hazard risk. Thereby, this reduces the exposure of citizens to harm, at least by providing more adequate infrastructure, as there are more mechanisms in place to protect them than before (Adger, Quinn, Lorenzoni, Murphy, & Sweeney, 2012).

However, even if a robust approach is taken that incorporates flexibility mechanisms, the question of cost is still problematic. For instance, if a long-term approach was taken where architects or engineers accounted for not just one climate, but several potential ones, then the cost of being so flexible increases for the current users (Roaf, Roaf, Crichton, & Nicol, 2005). Hallegatte (2009) argues that paying this price now would be the only logical way to avoid large building and infrastructure retrofitting costs in the decades to come (Hallegatte, 2009). Alternatively, it is stated that a mathematical climate threshold should be met before large scale adaptive action is to be taken, as this would increase certainty with regards to what climate scenario will transpire, and consequently the adaptive pathway that must follow suit (Wilby & Dessai, 2010). In essence, this is called a precautionary approach where local governments make decisions based on the timing of impacts and the best solution will come as a result of what these impacts are (Roaf, Roaf, Crichton, & Nicol, 2005). The problem with this approach is that once a flexibility threshold is met, it may already be too late, and the damage has been done. Hence, these contentious debates in literature on what approach is best supports Pelling and Blackburn's (2018) idea of 'real-life' balances manifesting themselves in



government responsibilities as there is a clear trade-off between the benefits and costs of applying a robust or precautionary approach.

### 2.4.3 Imagined Social Contract

The imagined social contract constitutes the individuals' own subjective vision of a just social order, which may or may not be reflected in policy or practice (Pelling & Blackburn, 2018). Aforementioned, this social contract relates closely to Rousseau's assertion that the legitimacy of an authority is defined by those over who it rules (Gauthier, 1969). Therefore, it is imagined rather than material, but it is likely that it is informed by material struggles, and could also be perceptive, expectant or hopeful (Pelling & Blackburn, 2018). This social contract lens will be used to analyse how policy-maker's own considerations of climate change, into wider adaptation policy responses, reflect their perceptions of the expectations citizens have on them. Thus, this lens will identify what policy-makers consider to be the largest factors that determine adaptation policy, which is a result of their views on what they perceive people expect from them, both now and in the future. Additionally, Brown, Few and Tompkins (2009) state that climate change adaptation would bring about a series of differing and divisive considerations during the process of decision-making because of the various values citizens have. In essence, these factors reveal the underlying reasons for action as well as inaction for certain climate change responses (Adger, Quinn, Lorenzoni, & Murphy, 2018).

Uncertainty is arguably one of the biggest considerations for decision-makers when it comes to making adaptation responses (Rood & Lemos, 2010). Therefore, the major implication of uncertainty is that decision-makers heavily rely on science to provide accurate answers for the decisions they make. (Wilby & Dessai, 2010) Therefore, if there is uncertainty in sea-level rise by a certain time period then the question of how high a sea wall should be in coastal areas becomes a difficult one to answer and, moreover, justify (Rood & Lemos, 2010). With regards to the social contract, uncertainty is something governments must deal with in every other aspect of decision-making as the future is always uncertain and ever-changing. However, what makes adaptation more unique in that respect is because of the added pressure from political, social, economic and cultural reasons to adapt (Street, Smit, Burton, & Klein, 1999). Additionally, the potential impacts climate change can have on certain environments can be detrimental to human and natural life, assuming the worst-case scenarios (Pittock & Jones, 2000). Therefore, with all these motivations in mind, there are plenty of reasons as to why uncertainty in adaptation is unique and would increase the accountability of governments to respond and decrease harm regardless, even if they do not.

Although, studies show that uncertainty mixed with other factors such as place attachment contribute to the overall difficulty of justifying coastal retreat strategies (Alexander, Ryan, & Measham, 2012). For instance, the Byron Bay Council in Australia opted for a planned retreat strategy under which no property owner can protect his or her beachfront property, inspired by the notion of nature eventually having its way, and for the benefit of the long-term (Mustelin, 2011). There was also a clause in the policy which stated that owners must guarantee that any structure is demountable and can be moved if necessary (Mustelin, 2011). However, the local residents were not pleased with such a radical proposition and took the council's decision to the Supreme Court and won (Schliebs, 2016). The court also ordered that the council is responsible for ordering and maintaining most rock walls that protect the shore (Schliebs, 2016). Intriguingly, some saw the council's decision as sensible because it would allow for more coastal retreat strategies to be gradually implemented in the future due to sea level rise and storms (Schliebs, 2016). However, despite this being a legal battle between the government and its residents, the underlying ideology behind it was short-term priorities. Many of the residents did not feel threatened by erosion and had dreams where their children could grow up in houses where they could run directly onto beaches and enjoy the lifestyle they experienced as children on the New South Wales South Coast (Schliebs, 2016). Nonetheless, the values of the locals to continue residing at the beach outweighed the council's own to pursue coastal retreat. Moreover, the council was attempting to alter the social contract to make the government accountable to people now as well as the future. However, the citizen's disregarded this idea because they felt that their own rights were being breached and withdrew their obligation to obey the government by taking the council to court. The council was thinking far further into the future where they wanted to give residents more of an incentive to move to avoid future economic, social and physical detriment to the community that will be living there (Mustelin, 2011).

Thus, this court battle goes to show that people's current lifestyles weigh more than possible risks to them, or even more so to people in future generations (Mustelin, 2011). Some psychologists argue that is called psychological distancing, where the perception of climate change, which has major underlying uncertainties, will occur at a distant point in time which will hinder solutions as people are less likely to act here and now (Evans, Milfont, & Lawrence, 2014). Therefore, it is argued that adaptation must essentially deal more with questions about what a community values (Mustelin, 2011). Consequently, it is recommended that governments should allow for wider transparent participatory programmes to help facilitate these discussions with communities, which will ultimately help both citizens and governments understand what their expectations are of each other (Adger, Quinn, Lorenzoni, & Murphy, 2018). Other studies have shown that if a community is willing to accept managed retreat as an adaptation option, they are likely to push for it to be a government funded

initiative (Rulleau & Rey-Valette, 2017). This is because people perceive that governments, who allow properties to be developed in hazardous locations, are liable for any adaptation costs because they are the ultimate consent authority (Alexander, Ryan, & Measham, 2012). Interestingly, Adger et al. (2018) found that citizens are more willing to adapt to climate change if governments have responded adequately in the past to disasters. Therefore, the citizen's expectations of governments were based on their performance in responding to disasters, which increased their own willingness to adapt under the imagined social contract. This relates back to Rousseau's idea that the legitimacy of an authority is defined by those over who it rules, and if governments do not satisfactorily consider citizen's expectations of safety from harms, their legitimacy is lessened under the imagined which limits the possibilities of adapting to climate change. Ultimately, government considerations can decide which adaptation response is going to be pushed forward, and, as a consequence, either keep the status quo or extend their obligations and accountability through the imagined social contract.

## CHAPTER 3: RESEARCH CONTEXT

### 3.1 Current Political Milieu of Climate Change in New Zealand

Due to the increasing scientific evidence of the climate changing and international political advancements, the politics of climate change in New Zealand has changed over the last 10 years. This has influenced the ratification of international agreements, national and local policy-making, and the overall public opinion. It is important to understand that political milieu has a direct influence on how climate change adaptation is facilitated because political elites are the deciders of how adaptation is originally managed, or not. Recently, the New Zealand Labour Party has described their commitment to climate change through Jacinda Ardern's comment of "*my generation's nuclear free moment*" (Ewing, 2017). The biggest step the 5<sup>th</sup> Labour Government has taken towards this is the proposed Zero Carbon bill. Albeit, the bill mostly deals with New Zealand and its mitigative efforts to become a legally binding zero carbon economy by 2050 or sooner (Zero Carbon Act, 2017). However, it makes important mention of the need for New Zealand to adapt to climate change by proposing that the Minister of Climate Change makes a National Climate Risk Assessment every 5 years (Zero Carbon Act, 2017). Following this, the Minister must make a plan to address the risks that were identified in an 'Adaptation Programme' (Zero Carbon Act, 2017). The Zero Carbon bill has yet to come into passing, but no doubt it would impact the wider adaptation policies and procedures that currently exist.

In New Zealand, according to a poll, just 52.4% of people consider climate change to be an "*urgent problem*" or a "*problem for now*", while 14% say it is "*a problem for later*", 14.1% "*don't know*", and 19.5% say it "*[isn't] a problem*" (Evans, Milfont, & Lawrence, 2014). However, studies show that the number of people seeing that climate change is an "*urgent problem*" is increasing potentially due to more people believing in climate change, focused media attention and communicated individual experience of climate change-related extreme weather events (Milfont, Wilson, & Sibley, 2017). Politically, however, New Zealand has been more divided in the past about climate change. Supposedly, before 2006, the National Party mostly herded with climate change sceptics and finally in 2008 National stopped opposing the Kyoto Protocol and adopted several policies to reduce greenhouse gas emissions (James, 2007). Interestingly, the ACT Party went into the 2008 general election with a policy that in part stated "*New Zealand is not warming*" and that their policy goal was to ensure "*that no New Zealand government will ever impose needless and unjustified taxation or regulation on its citizens in a misguided attempt to reduce global warming or become a world leader in carbon neutrality*" (ACT Party, 2010). However, in 2018 all current parties in the Beehive have announced they are climate change believers, including ACT, but the extent to which they agree on how much of this would be detrimental to the country, and consequently how much action should be

taken, is still vastly different. Thus, in the last 10 years the political milieu of climate change has transformed relatively drastically in New Zealand from major parties being non-believers to somewhat supportive of new climate change policies. There have been policies and frameworks in place that fostered adaptation that either were or weren't climate change related before this new political milieu, which will be covered in the next section. Nevertheless, that does not mean that this radical change in political milieu over the last 10 years has not impacted these policies and frameworks.

## 3.2 Central and Local Government Responsibilities towards Climate Change Adaptation & The 'Snags'

This section will explain the core functions and responsibilities central and local governments play with regards to climate change adaptation. Firstly, it is important to establish the responsibilities each sector of governance has in New Zealand as this would allow for a better understanding of who is accountable for what. Secondly, it is elemental to understand the responsibilities of governance of New Zealand, with regards to adaptation, as this sets out the accountability that is underpinned in the social contract between citizens and the state. By understanding these formal and legal responsibilities, it is easier to demonstrate the current state of the social contract and how this is impacted in more context specific instances in the findings. Lastly, this section will discuss the known 'snags' in the New Zealand governance framework with regards to adaptation as these will allow for a better overall nuanced understanding of the factors that may limit or enable certain adaptation initiatives in the findings section.

### 3.2.1 Central Government Responsibilities

Generally speaking, the central government in New Zealand retains ultimate control and accountability over all levels of government due to the abolishment of provincial governments in 1876 and the dismantlement of the second chamber of the national parliament in 1951 (Guerin, 2002). Parliament is elected to deal with issues relevant to New Zealand as a nation. In particular, the central government is responsible for the taxing of income and expenditure to create revenue for spending on civic amenities such as education, healthcare, police, army and social services. Because the central government retains ultimate reigning authority over New Zealand as a whole, this leaves the implication that if something goes wrong in the country, it will find itself involved in one way or another (Guerin, 2002). With regards to the social contract, the central government is therefore seen as accountable to many issues in the country. This will be explained further in the 'snags' section.

New Zealand has committed to several international agreements such as the Paris Agreement 2015 and the Sendai Framework 2015 which have provisions relating to climate change adaptation planning

as well as general hazard risk reduction. Due to these international agreements, the central government has enacted and amended several pieces of legislation that provide policy frameworks for climate change adaptation. The most commonly cited ones are the Resource Management Act 1991, Civil Defence and Emergency Management Act 2002, National Policy Statement for Freshwater Management 2014, and the New Zealand Coastal Policy Statement 2010 (Lawrence, et al., 2015). For the most part, however, these pieces of legislation offer a more flexible and precautionary approach, where decision-makers are to consider the effects of climate change into their proposed plans. Although the extent to which they are required to consider climate change is still flexible, therefore it depends on the information and bias that is used to make a decision, which determines the extent adaptation is considered (Lawrence, et al., 2015). However, since there is not one single bit of legislation that is only adaptation related, this leaves the implication that New Zealand's mandates and laws surrounding adaptation are scattered and fragmented. Despite this, there has been a commitment by the central government to spend approximately \$100 million over 10 years on research and projects relating to adapting to climate change (Ministry for the Environment, 2018). This research will supposedly support local councils, businesses, individuals and communities to identify impacts and implement effective adaptation solutions.

### 3.2.2 Regional & Local Government Responsibilities

It is important to establish that everything local authorities do is within the legislative framework established and maintained by the central government (Internal Affairs, 2011). New Zealand has two tiers of local government where the top tier consists of 11 regional councils, and the second tier consists of 67 territorial authorities which are 13 city councils, 53 district councils and the Chatham Islands Council. Local governments receive their funding for community projects via taxing land which is allowed and can only be changed by statutory declaration by the central government, and also borrowing funds (Guerin, 2002). Therefore, local governments in New Zealand tend to function as an agent of the central government by interpreting or administering rules set centrally. The range of discretion allowed to local governments in making and implementing policy varies from nil to almost complete (Guerin, 2002). The implication of this, with regards to the social contract, is that responsibility between central and local governments is shared on some matters, depending on the level of disposition, and completely discrete. According to the Local Government Act, councils are democratically accountable to their communities, but as figures of law and statute they have an obligation to take on any task that central government assigns, which should theoretically provide them with double oversight (Lawrence, et al., 2015). In reality, these overlapping layers of responsibility make the gap in accountability between central and local governments very blurred.

Local government activities can be categorised into three sections (Guerin, 2002):

- I. Prohibited (policy set and implemented nationally)
- II. Mandatory (policy set nationally and implemented locally)
- III. Discretionary (completely local activities)

The statutes that define these powers can be found in legislation passed by the central government such as the Local Electoral Act 2001, the Local Government (Rating) Act 2002 and the Local Government Act 2002. With reference to climate change adaptation, local governments usually have a set of responsibilities to research, prepare and reduce the negative impacts that are forecasted under a multitude of statutes passed by the central government, but also have the flexibility to apply these accordingly (Willis, 2014).

Usually the regional government (i.e. the regional council) deals with the larger issues pertaining to the region as a whole. These responsibilities can be categorised into (Department of Internal Affairs, 2011):

- ✚ *Sustainable regional well-being.*
- ✚ *Managing the effects of using freshwater, land, air and coastal waters, by developing regional policy statements and the issuing of consents.*
- ✚ *Managing rivers, mitigating soil erosion and flood control.*
- ✚ *Regional emergency management and civil defence preparedness.*
- ✚ *Regional land transport planning and contracting passenger services.*
- ✚ *Harbour navigation and safety, oil spills and other marine pollution.*

Local governments (i.e. city and district councils) responsibilities are more specific and related to their districts rather than a larger area. These responsibilities can be categorised into (Department of Internal Affairs, 2011):

- ✚ *Sustainable district well-being.*
- ✚ *The provision of local infrastructure, including water, sewerage, storm water, roads.*
- ✚ *Environmental safety and health, district emergency management and civil defence preparedness, building control, public health inspections and other environmental health matters.*
- ✚ *Controlling the effects of land use (including hazardous substances, natural hazards and indigenous biodiversity), noise, and the effects of activities on the surface of lakes and rivers.*

It is important to break down these two tiers of government's responsibilities because the regional and local areas are the focus for this research. Although, generally speaking, the councils have slightly

different responsibilities, they usually share these by working in conjunction with one another. For instance, in the six months after every local authority election, a region's councils meet to discuss how they will work together, and document this in a triennial agreement (Department of Internal Affairs, 2011).

However, the reigning bit of legislation which makes it a legal requirement for regional and local councils to consider the effects of climate change is the Resource Management Act 1991. This includes potential effects of high probability, and of low probability, which have high potential impact, cumulative effects over time or in combination with other effects whether positive or adverse, temporary or permanent and whether past, present or future (Climate Change Adaptation Technical Working Group, 2018). The Resource Management Act 1991 also sets a hierarchy of planning documents including coastal and national policy statements, national environmental standards, national planning standards, regional policy statements, regional plans, and district plans (Climate Change Adaptation Technical Working Group, 2018). Through this hierarchy, councils are empowered to control both new and existing development, including where such development may be exposed to avoidable climate change effects (Climate Change Adaptation Technical Working Group, 2018). In provincial areas, regional councils tend to be the dominant authority in pushing agendas and district councils implement these into their own policies and make them context relevant. Essentially, regional councils create guidelines for climate change policy and district councils usually incorporate these, for instance, into district plan provisions, resource and building consents, and infrastructure provisions.

Therefore, responsibility is usually left in the hands of regional and local authorities because the impacts will be context relative, as stated by the Resource Management Act 1991. Thus, central government views that individuals, communities and local governments are best placed to decide the management and adaptation options suited to them (Manning, Lawrence, King, & Chapman, 2015). This highlights a clear demarcation of inferred responsibility between the local and central government. Additionally, this gives local and regional governments more flexibility to use adaptation measures that are suitable to their own environmental contexts. However, placing adaptation responsibilities solely into the hands of these tiers of government has several implications for the social contract. Firstly, local governments are already at the forefront of many day-to-day issues with the public with high levels of mistrust (Krupp, 2016). Secondly, central government often passes regulatory tasks without funding whose costs are ultimately borne by communities, where adaptation measures do not seem to be an exception (Krupp, 2016). Lastly, as mentioned before about double oversight, local governments are going to be seen as the decisive authority for adaptation measures because of blurred levels of accountability in the statutory realm which will ultimately be reflected in the public's eyes (Krupp, 2016).



### 3.3.3 The ‘Snags’ Preventing Effective Adaptation in Central & Local Government

Despite there being some distinguishable responsibilities for each sector of government to deal with climate change adaptation, this does not mean that there are no major hindrances that prevent effective adaptation management and planning. New Zealand, in general is still at its beginning stage of fostering effective climate change adaptation policy and decision-making, like most western countries. This section will explore what the major ‘snags’ are in New Zealand which are preventing effective adaptation to gain a better understanding into how the governing framework may influence the implementation of local climate change policy.

#### 3.3.3.1 Financial

Firstly, it is important to note that New Zealand’s policies and funding institutions largely address property damages post hoc via the Earthquake Commission, or commonly known as the EQC, and ad hoc political decisions to support affected communities. However, this can be seen as a relatively large issue because reactive responses to climate events in the future will be increasingly costly and socially disruptive (Boston & Lawrence, 2017). This is mainly because reactive measures do not necessarily address the issue at hand, that is adaptation to a future climate, and instead focuses on getting people back to their original state of being. This notion runs in line with the idea that governments avoid expenditure on disaster risk reduction and draw their attention to relief to get votes and avoid public scrutiny (Boston & Lawrence, 2017). New Zealand has a long-standing history of Crown ‘bail-outs’, which has the potential to raise public expectations of continued protection and funding assistance (Boston & Lawrence, 2017). The most recent example of this is the flooding in Edgecumbe in 2017 where 70% of the town’s properties were flooded. Consequently, the government allowed for the EQC to clean and repair all affected properties, including the uninsured ones (Boston & Lawrence, 2017). Arguably, this could also be damage control because many of the town’s citizens saw this as the government’s fault for not addressing a supposedly well-known flaw in the stop-bank. Nevertheless, whilst this is still a decent action for the town’s citizens, the precedent these actions set for the future are costly both socially and economically when taking into account the impacts of climate change. The biggest instance of this occurring is during the Christchurch Earthquakes of 2010 & 2011 where the government of the time ‘Red-Zoned’ a series of properties. The properties essentially lost all value because the residents were strongly urged to relocate. Under a Supreme Court ruling in 2015 the government was forced to pay out all the uninsured home and landowners 100% of their 2007 value. By 2017 virtually all Red Zone property owners had accepted the government’s offers, at an initial cost to the Crown exceeding \$1.9 billion (Boston & Lawrence, 2017). Thus, governments in New Zealand tend to be reactive. Therefore, with the scope, scale and duration of the impacts and the complexity of the responses required for climate change adaptation, the current mindset on relief over reduction

expenditure will continue the cycle of public expectation. On top of this, it generates a potential 'safety paradox', where the long-term implications of increasing climate risk profiles are inadequately considered during the recovery process (Boston & Lawrence, 2017). With the introduction to a non-linear changing climate, this 'safety paradox' will be exacerbated. Consequently, there will be an increase in the overall cost of damages in the future in a pool of funding that will quickly dry up.

### 3.3.3.2 Statutory Misalignments

On top of reactive financial responses, there are some relatively major misalignments in how climate change adaptation objectives are incorporated into legislation, policy, agencies and planning documents. For instance, there are inconsistencies in the timeframe for considering climate change effects with; the Building Act requiring a 50-year design life and no express consideration of climate change effects; the New Zealand Coastal Policy Statement using a timeframe of at least 100 years; and the Local Government Act requiring 30-year infrastructure plans (Climate Change Adaptation Technical Working Group, 2017). This type of misalignment makes matters complicated and convolutes the urgency and priority to act on adapting. Consequently, the central government's agencies responses to adaptation are not coordinated and have no alignments in adaptation goals. As a result, even more inconsistency and uncertainty is created amongst those with specific responsibilities at central and local government (Climate Change Adaptation Technical Working Group, 2017). Additionally, there are a number of strategy documents targeted at certain sectors that highlight the importance of considering climate change into decision-making and planning such as the National Civil Defence Emergency Management Plan Order 2015 and the Thirty-Year New Zealand Infrastructure Plan 2015. Problematically, these documents do not include a clear articulation of the priorities for action, timeframes for delivery and how these should be monitored to ensure implementation is and remains effective (Climate Change Adaptation Technical Working Group, 2017). One of the consequences of not having a planned approach is that climate change adaptation is not formally factored into decision-making. This creates a risk that new government initiatives are not able to deliver the benefits planned because they could increase New Zealand's exposure to climate risk.

Lastly, it is important to note that the majority of New Zealand's climate change adaptation planning is based under natural hazard management which overlooks the complex impacts it will have on society such as individual and community health, pest infestations and financial security, as well as people's ability to deal with it in the first place. While, it may be beneficial to prepare for increased frequency and magnitudes of severe weather events, it does not address the prolonged effects of phenomena such as sea-level rise, changes in temperature and impacts on human health (Lawrence, et al., 2016). Some central and local government statutory mandates include the interests of future

generations, cumulative impacts, and uncertainty management of at least 100 years for long-lived activities and 30 years for infrastructure (Lawrence, et al., 2016). This can cause decision-makers to lean towards a long-term direction. However, this practice is apparently mixed at best and short-term at worst (Climate Change Adaptation Technical Working Group, 2017). Despite a longer time frame being mandated, the practice is to plan for 5 to 10 year periods as part of the Local Government Act. There is also little evidence of there being any investment in decisions within shorter time periods being linked to local council's ability to cope with climate changes over longer time frames (Lawrence, et al., 2016). All of these 'snags' are problematic because the central government is the key leader and visionary for the rest of the country. Therefore, an inefficient response to climate change adaptation will be mirrored and reflected in other governing and private sectors of the country. However, on a positive note, the proposed Zero Carbon Bill hopes to address some of these 'snags', if it is passed.

#### 3.3.3.3 Underequipped Local Government

Local governments usually have a pretty good understanding of climate change and the potential impacts of it on their own region and responsibilities. However, because of the inefficient management from central government, many representatives from local governments argue that climate change adaptation is halted in their region without higher central guidance (Lawrence, et al., 2015). Some of these factors are a lack of funding, leadership, consistent policy and legislation, and prioritisation of other governmental initiatives. Interestingly, the scope to which each council considers adaptation varies mostly due to the exposure to climate-related changes they face, and the level of resources available to them. These different approaches can create confusion for the public, and inconsistencies and litigation of decision-making. There are also no apparent common goals between all 78 councils to help guide adaptation and in the majority of cases councils do not have a plan for how to go about climate change adaptation (Climate Change Adaptation Technical Working Group, 2017). It has also been noted that there needs to be greater public awareness of climate change adaptation, as the current awareness/non-awareness is posing a barrier to adaptation (Manning, Lawrence, King, & Chapman, 2015). With regards to being flexible with climate change, it is a statutory requirement for a review of Regional and District Plans every 10 years, and Long-Terms Plans every 3 years. However, the processes for making these changes are generally slow to respond to the changing risks and opportunities because they are time based and arbitrary rather than flexible and adaptable (Climate Change Adaptation Technical Working Group, 2017). It is also important to note that over the next 30 or so years the gap between expenditure and revenue for councils is likely to increase due to expected costs of infrastructure renewal (Boston & Lawrence, 2017). This is problematic because revenue in the future is decreasing, and with the advent of climate change

adaptation, the funding arrangements councils will have are unlikely to meet the challenges that are required to adapt (Boston & Lawrence, 2017).

### 3.4 The Bay of Plenty

The Bay of Plenty is located in the upper eastern part of the North Island. The Bay of Plenty consists of 259km of open coastline that is used for economic, social, recreational and cultural purposes. A large part of the Bay of Plenty region is centred in the Taupo Volcanic Zone which extends from the centre of the North Island northwards to White Island. Thus, the Bay of Plenty region covers 12,200 km<sup>2</sup> of land and 9,500 km<sup>2</sup> of coastal marine area. The Bay of Plenty has a temperate, maritime climate, with warm humid summers and mild winters. It is one of the warmer regions in the country and has the most areas that experience at least 2,200 hours of sunshine per annum (Chappell, 2013). The average daily maximum temperatures range from 9–16 °C in winter to 22–26 °C in summer (Chappell, 2013). Rainfall usually occurs more frequently in winter than in summer, but tropical storms in summer and autumn can produce heavy rain with high winds. For instance, central parts of the region can receive up to 2000mm of rainfall annually, whilst the eastern and western areas can receive up to 4000mm (Chappell, 2013).

The number of people currently residing in the Bay of Plenty is 267,740, but this number increases during the summer period. However, the number of people residing in the Bay of Plenty is expected to increase relatively substantially over the next five decades. For instance, Tauranga City's population was 119,800 in 2013 and is expected to increase to roughly 200,000 by 2063 due to internal and external migration (Jackson, Cameron, & Cochrane, 2014). This places pressure on infrastructure and development as Tauranga City will need to accommodate around 45,000 new households (Jackson, Cameron, & Cochrane, 2014). Additionally, by 2033 over 1/3 of Tauranga and Western Bay of Plenty District's population will be aged 65 and over (Jackson, Cameron, & Cochrane, 2014). As a whole region, the population is set to rise by an average of 0.8 per cent annually until 2043 (S).

The GDP value of the Bay of Plenty from 2016 was \$13.1 billion, around 5.2% of New Zealand's entire GDP (Steele, Thomson, Cochrane, & Barret, 2017). This figure is expected to grow because of predicted economic growth and an increasing population. Agriculture, natural resources and tourism are the region's major industries. The most common agricultural land uses are horticulture, dairy, grazing and sheep farming. Some notable horticultural crops include kiwifruit, apples and avocados which are dependent on the warm climate. The region also has an abundance of coastal, forestry and geothermal resources. Rotorua, Tauranga and Mt Manganui are the region's biggest tourism destinations that are reliant on the environment and climate to operate successfully (Steele, Thomson, Cochrane, & Barret, 2017).

The Bay of Plenty region has one regional council followed by seven district councils that are within the region's territory. These are; Bay of Plenty Regional Council, Western Bay of Plenty District Council, Tauranga City Council, Whakatane District Council, Kawerau District Council, Opotiki District Council, Rotorua Lakes Council. All these governing bodies and their work on climate change adaptation will be incorporated into the findings of this research.

#### 3.4.1 Climate Change in Bay of Plenty's Future

The Bay of Plenty Regional Council requested for an updated climate change assessment for the region from NIWA in 2011. The assessment that was used prior to this was a 2003 report. It is likely that the 2011 assessment is now used for all climate change related decisions and policy-making as it has the updated results. Some of the major findings in the 2011 assessment will be shown in this section to give some idea of what is expected in the future. Additionally, it would give good background information into how decision and policy-making on adaptation will be influenced. It is important to note that NIWA has expressed in their report of the different possible emission scenarios and how this could impact the effects that are dispersed around the region, as well as policy-making based on these (Griffiths, et al., 2011). Mid-range emissions are the primary focus of the report however, with some attention to the possibility of high emissions scenarios. This report indicates that some of the effects of climate change will be felt around 2040 in the Bay of Plenty, but from then they will get more noticeable (Griffiths, et al., 2011).

Bay of Plenty Projected Summer Mean Temperature Change between 1980-1999 and 2080-2099<sup>a</sup>

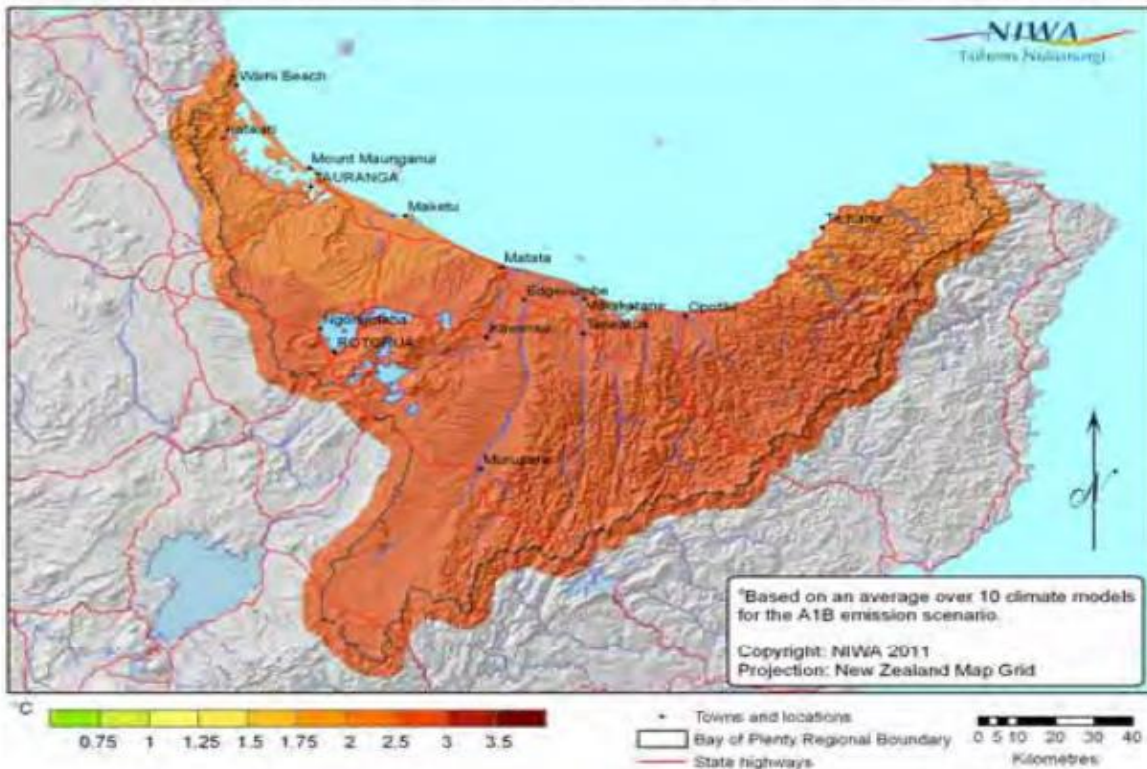


Figure 3.1 - Screenshot from NIWA's 2011 Assessment of Temperature Changes in BOP from 1980 – 2099 (Griffiths, et al., 2011)

As far as temperatures go, by 2040, the region’s annual mean temperature is expected to be around 1.2C warmer than it was in 1990, and by 2090 it is expected to warm between 2.7C and 3.6C (Griffiths, et al., 2011). Figure 3.1 shows how temperature is supposed to change in the region between 1980-1999 and 2080-2099 under the mid-range emissions scenario. With average temperatures rising, the total amount of rainfall in the region is expected to increase by 10% during winter and decrease by roughly 10% in the summer (Griffiths, et al., 2011). Although all these figures may seem insignificant, NIWA emphasises that if the temperature distribution at a specific location is shifted by 2°C, what is a very rare event now may become commonplace and conversely, some common events may become increasingly rare (Griffiths, et al., 2011). In essence, this means that there will be more extreme weather events that may disrupt the region as well as make the weather that currently seems normal into a slightly different climate altogether. For instance, Figure 3.2 shows the increasing number of days where the temperature exceeds 25°C in certain parts of the region under the mid-range emissions scenario and high emissions scenario. Some of the increases by 2090 even in the mid-range scenario are six-fold in places such as Opoitiki (Griffiths, et al., 2011).

District	Observed Days Where Temperature Exceeds 25 Degrees	Mid-Range Scenario For Temperature Exceeding 25 Degrees in 2040 In Days Per Year	Mid-Range Scenario For Temperature Exceeding 25 Degrees in 2090 In Days Per Year	High Range Scenario For Temperature Exceeding 25 Degrees in 2090 In Days Per Year
Opotiki	9.6	25.6	61.1	80.6
Rotorua	12.0	25.3	49.6	62.6
Tauranga	21.7	41.6	73.8	89.4
Te Puke	21.3	38.2	68.4	84.9
Whakatane	22.2	47.4	82.7	102.3

*Figure 3.2 – Change in Hot Days from Currently Observed Measurements to 2040 and 2090 under Medium and High Range Scenarios (Griffiths, et al., 2011)*

On average, under current climate, droughts lasting more than a month are infrequent in the Bay of Plenty. Projections under both middle and high-range emissions scenarios by century-end show the largest changes are likely to occur in droughts lasting longer than a month. Increases of between 9% and 17% in time spent in low intensity summer drought, lasting 1 month or more, are likely at 2090 under the middle-range emissions scenario (Griffiths, et al., 2011). The overall temperature change, rainfall amount and drought frequency will have an impact on the pasture growth in the region, if there is no adaptation. Projections for 2090 show that there will be little change in the overall biomass of pasture, but there will be major changes in the seasonality of pasture growth in the Bay of Plenty (Griffiths, et al., 2011). This is because projected higher summer temperatures significantly reduce summer pasture growth, and mild temperatures will result in large increases during winter periods (Griffiths, et al., 2011).

On top of this, the sea level is expected to rise up to 0.7m by 2070 along the coast (Bay of Plenty Regional Council, 2018). There is already evidence to show that sea level rise in the Bay of Plenty is an indicator of warming temperatures. For instance, there are recordings from Moturiki Island, off Mt Maunganui, that show sea levels there have risen 11cm since 1950, an average rise of 1.9mm a year, matching the average global increase (Bay of Plenty Regional Council, 2018). However, sea level rise will exacerbate coastal erosion and flooding during storm surges, where infrastructure and significant land sites are threatened (Bay of Plenty Regional Council, 2018).

# 4 METHODOLOGY & METHODS

## 4.1 Introduction

This chapter will introduce the qualitative research design this research has decided to undertake. Firstly, it discusses that the general research design is based on a post-positivist approach that seeks to use qualitative methods to help uncover a more accurate reality of council policy-making. Secondly, this chapter justifies why a case study in the Bay of Plenty is appropriate for the purposes of the qualitative inquiry and displays the benefits of using one. Thirdly, the forms of data collection are explained and justified in the form of interviews and policy documents. Fourthly, a thematic analysis is briefly described as well as explained in how it was used to analyse the data set. Lastly, this chapter will explore some of the key research dilemmas and positionalities which have impacted the overall findings this thesis has.

## 4.2 Research Design

Positivist approaches typically consist of modelling and creating a research hypothesis where the reality is seen and objectively determined and are therefore looking for quantitative data within a specific realm (Lake, 1993). In contrast, a post-positivist approach recognizes that all observation is fallible and has error and that all theory is revisable (Clark, 1998). This debate between positivism and post-positivism is philosophical in its nature because positivism intrinsically assumes that scientific truth can be measurable and objective. By contrast, post-positivism came as a critique of positivism because scholars claim that an objective truth is not possible to reach and biased to the paradigm of knowledge the researcher has, whereby social constructs determine the overall methodological process (Clark, 1998). Thus, a post-positivist emphasizes the importance of multiple measures and observations, each of which may possess different types of error, and the need to use triangulation across these multiple errored sources to try to get a better idea on what's happening in reality (Fischer, 2005). Climate change adaptation is a socially constructed process, whereby people can interpret what adaptation is to them which will determine what their actions are towards resolving it. For this reason, a post-positivist approach would suit better for this research as, in some respects, this research is seeking for the meanings that are attributed towards adaptation and how considerations, which are largely subjective in a council setting, influence policy-making on climate change adaptation. Additionally, it is seeking for insights on how councils view their obligations under different social contracts to adapt to climate change. Moreover, the knowledge this research is seeking to obtain is from a specialised set of individuals that can only be acquired with a post-positivist methodology.



Post-positivist methodologies usually have a qualitative research design where the research obtains data from interviews and other secondary sources (Myers, 1997). In this study there are multiple views from local and regional government policy-makers that show an in-depth knowledge on the current predicament of the Bay of Plenty with regards to climate change adaptation. A quantitative study that is purely based on the number and scope of adaptation initiatives in the region would fail to capture the magnitude and nuances of the considerations local authorities are currently taking into account into their policy-making, and can possibly foresee in the near future. Qualitative data is usually diverse and filled with feelings, emotions, perspectives and behaviours, but this is what the study set out to see as it is, in part, looking to understand the social reality of adaptation policy-making and how this influences the social contract (Hoggart, Lees, & Davies, 2002). Additionally, a qualitative approach will allow for the benefit of finding underlying reasons, opinions and motivations from council policy-makers that quantitative methods tend to miss out (Roulston, 2012).

### 4.3 Case Study

This research went through several phases in its original formulation as it was difficult to conceptualise a case study for adaptation that had a unique twist. However, at its core it always had qualitative research parameters that intended to gain insights on climate change adaptation from councils. Therefore, a case study would suffice for the analytical generalisations this research aims to produce. Scholars argue that case studies posit the axiology of post-positivist approaches towards research because they hold true to the empirical and questioning nature of knowledge (Harrison, Birks, Franklin, & Mills, 2017). In essence, a case study as an empirical inquiry that investigates contemporary phenomenon within its real-life context using multiple sources as evidence (Yin, 1989). This research analyses how local governments in the Bay of Plenty region make adaptation policies in light of the social contract. Thus, the conditions of the definition provided above are met as it is an empirical inquiry in the sense that the information that is obtained is from primary and secondary sources. The fact that policy-making is not a static process and continuously changing signifies that it is a contemporary phenomenon. On top of this, policy-making on adaptation in the Bay of Plenty is all just unfolding now, therefore it is not a historical event. Lastly, there are several council policy-makers that are being interviewed from district and regional councils in the area with, more or less, their own views on how adaptation is being handled.

Using a case study approach for this research has several advantages. The biggest advantage is that it enables a holistic view of certain phenomena or series of events (Gummesson, 1999). This is because it provides a round picture as there were several sources of evidence from interviews and policy documents (Noor, 2008). Since this research is focused on adaptation in a region, gathering data from

several different local councils helps build this round picture and provides a more holistic view on what the region's priorities are with climate change. Another major advantage is that a case study can be useful in "*Capturing the emergent and immanent properties of life in organisations and the ebb and flow of organisational activity, especially where it is changing very fast*" (Noor, 2008). The purpose of this research is to understand how local governments facilitate adaptation and how this impacts the social contract, therefore a case study should clearly reveal some of the inner workings of councils. However, it is important to note that the findings in this research may not be an exact representation or reflection of every other region in New Zealand, which is a weakness of using the case study approach (Johnson, 1995). The case study will provide enough information to understand council obligations to adapt to climate change within the Bay of Plenty context, from the perspective of council staff. If the research were to be replicated and produced in a different region or setting, it should be expected that the findings would be different as regions vary in their environments, priorities, demographics and resources. Therefore, a case study will inevitably collect information in the form of subjective perceptions, situated actions and culturally mediated sense-making from council policy-makers that are specific to the Bay of Plenty area in New Zealand (Henwood, 2014). However, other scholars argue that case studies can provide analytical generalisations that can invoke theoretical concepts which focus on whether explanations about the phenomenon analysed are credible and can open doors for further theory development (Baxter, 2010). Thus, even if this study were to be replicated and the findings were not consistent on a statistical level in a different region, it can still produce relevant ideas for future research in climate change adaptation responses and obligations under the social contract at a regional and local level. Nonetheless, the positioning of this case study reflects the axiology of post-positivism where maintaining intellectual honesty, managing bias, and acknowledging limitations, coupled with meticulous data collection and accurate reporting are critical elements in the conduct of research (Harrison, Birks, Franklin, & Mills, 2017).

## 4.4 Data Collection Techniques: Sources of Evidence

As mentioned before, this research employed primary and secondary sources of data, mainly from semi-structured interviews as well as local and regional policy documents. Case studies usually rely on several sources of evidence, thus the research methods used in this thesis has allowed for the triangulation of data and allowed for a more cohesive account of the ideas analysed and corroborated in the research findings.

### 4.4.1 Semi-structured interviews

Interviews were appropriate to conduct because the research seeks to unravel complicated relationships between councils and how they consider adaptation into their policy-making, as well as

slowly evolving events, which adaptation clearly has been (Hoggart, Lees, & Davies, 2002). Semi-structured interviews were conducted with the research participants which allowed for a more open approach to asking questions, discussing certain topics and for a better idea of what participants thought of adaptation in the region (Roulston, 2012). The interviews were all conducted over the phone and participants were given a sheet which indicated the sorts of questions and discussion areas the interviewer was going to cover. Flexibility was a key part of the semi-structured interviews which allowed for more fluid conversation between the researcher and the participant. Additionally, the semi-structured nature of these interviews allowed the interviewer pursue lines of inquiry in a friendly manner, which was beneficial because the participant was more willing to discuss certain topics in greater detail that may have otherwise been missed (Yin, 1989).

A direct approach was used with the interviewees by emailing them and seeking permission to be interviewed. This approach was used because the interviewees had specialised knowledge that is specific to their role and they had public profiles that were easily accessible online with their information. Interviews were conducted primarily with staff from local and regional government councils that had a role to play in policy-making in their organisation. The roles of the interviewees usually ranged from strategic, analytical, natural, financial, policy and advisory roles in their respective organisations. Some interviewees were of a higher authority and were managers in their organisations, which added seniority to the interviews and discussions that followed. One interviewee was also a politician which adds a different perspective on adaptation initiatives. In the name of consistency and ethical obligations, the positions and roles of each interviewee will not be stated in Table 3.1 as some wished to be named and others did not. By giving the specific roles and positions of each interviewee next to their code, their identity could be easily compromised by a quick search online. Nevertheless, interviews with council staff and an incumbent gave detailed insight from their perspectives about how local governments consider factors such as funding, uncertainty, public scrutiny and political viability into creating and implementing adaptation policies. Additionally, the interviewees were able to give their own opinions and experiences on how their council's accountability towards climate change has been altered in their time of working there.

Interviews from a total of five out of the seven councils in the Bay of Plenty were conducted. Participants from Tauranga City and Kawerua District Councils were contacted, however no response was received back. In total, 9 interviews were carried out with 10 participants which usually lasted 30 to 40 minutes. Interviews were conducted over the phone, rather than face-to-face as this was easier for the researcher to organise without having to travel. Travel was an issue because no car was available and bus transportation in the region where the researcher lived was not adequate, i.e. buses going from the researcher's home town to places in the Northern Bay of Plenty took over 8 hours due

to indirect routes and stopovers, whereas if car transportation was available it would take only 1 hour. Additionally, this was a region wide study with interviews being scheduled in line with the participant's availability, who were all busy and could only do certain times which were spread out. Thus, collectively these transportation and logistical issues made travelling to do face-to-face interviews impractical, inefficient and time consuming. Therefore, phone interviews were used as a compromise.

The total number of interviews did not go past 10 due to the researcher reaching a point of saturation where the information received from participants was becoming recognizable and certain patterns were emerging that became persistent (Lummis, 1988). It was found in some studies that a group of 12 participants from a homogenous group is all that is needed to reach saturation (Guest, Bunce, & Johnson, 2006). However, in this case 10 was a satisfactory number due to the mostly similar nature of the participant's occupations as well as the specificity of the information on policy that was required from them. A list of interview participants is provided in Table 3.1. It is also important to note that this research was made to exclusively understand policy-making from the perspective of councils and how they factor certain things into this process that influence adaptation responses. Therefore, perspectives from other stakeholders such as private enterprises, civil society and international organisations were not required for the purposes of this research. This is because in its nature the research is focused on the social reality of climate change adaptation from the view of councils and how they view the social contract creates obligations on them. A study on what expectations citizens have from government responses under the social contract should be instigated in future research as they are the other half of the picture.

**Table 3.1: List of interview participants**

Organisation	Interviewee Code
Bay of Plenty Regional Council	BOP1
	BOP2
	BOP3
	BOP4
Whakatane District Council	WDC5
	WDC6
	WDC7
Rotorua Lakes Council	RLC8
Western Bay of Plenty District Council	WBD9
Opotiki District Council	ODC10

All interview participants were provided with a Participant Information Sheet which outlined the nature of the research as well as the expected interview procedures. Additionally, all participants received a Consent Form before the interview commenced for them and their managers to sign in order to legally authorise the interview. On top of this, all interviews were provided with a rough set of questions that were going to be asked during the interview to help them prepare if need be. Not all participants agreed to have the interview recorded, part of this is due to it being over the phone, although most were fine with it. Of the ones that were not recorded, some interviewees wished to see a copy of the discussion notes which was sent to them via email. The interviewees who did not mind being recorded received a copy of the audio recording if they wished upon request but did not want a full transcription.

#### 4.4.2 Policy Documents

Data was also obtained from several policy documents that were produced in the regional and local councils. These documents were analysed to support and corroborate evidence from the semi-structured interviews as a means of triangulation to seek convergence between sources. Scholars state that triangulation helps guard against the accusation that a study's findings are simply an artefact of a single method or an investigator's bias (Patton, 1990). It is claimed that a common source of secondary data in qualitative research is documentation which contain text and images that have been recorded without a researcher's intervention (Bowen, 2009). Additionally, since this is a study that is focused on policy, it is important to mention these policies in the findings because they are the result of the considerations and factors that the participants talked about in the interviews.

The documents that were analysed in this research were regional and local policies that related to proposed district and regional plans, long-term district and regional plans, and other strategies and policies that were listed on the respective council’s website which were relevant to the research topic. These policy documents are listed in Table 3.2. Long-term plans list the council's activities for the next 10 years and covers everything councils do and how they pay for it. They also set the budget for the next decade but get reviewed every 3 years. These plans essentially highlight what the council is intending to prioritise over the next 10 years and describe what it is going to do to get things done. Long-term plans helped identify the degree of prioritisation councils have on matters such as climate change. These plans contained information and policies on how to incorporate climate change parameters into wider natural hazard management initiatives. Other supplementary documents such as strategies and management plans were also utilised as they contained some more detailed ways of incorporating adaptation parameters into more specific policies such as waste, stormwater and infrastructure management. These policy documents are relevant to the research because they highlight what specific measures councils are taking into account to adapt to climate change. Essentially, these policies are the result of wider considerations and pressures that councils must prudently factor into to their policy-making procedures, thereby solidifying their obligations under the social contract.

**Table 3.2: List of policy documents used in research**

Council	Document
Bay of Plenty Regional Council	➤ Long-Term Plan 2018-2028
Tauranga City Council	➤ Long-Term Plan 2018-2028 ➤ Infrastructure Strategy 2015 – 2045 ➤ City Plan 2018
Western Bay of Plenty District Council	➤ Long-Term Plan 2018-2028 ➤ Coastal Erosion Responses Policy 2017
Opotiki District Council	➤ Long-Term Plan 2018-2028 ➤
Whakatane District Council	➤ Long-Term Plan 2018-2028 ➤
Rotorua Lakes Council	➤ Long-Term Plan 2018-2028
Kawerua District Council	➤ Long-Term Plan 2018-2028 ➤ Annual Plan 2017/2018

## 4.5 Data Analysis Technique

The data from the semi-structured interviews and council policy documents were analysed by using a thematic analysis. A thematic analysis is seen as arguably a foundational method of qualitative analysis (Holloway & Todres, 2003). At its most basic core, a thematic analysis is used for identifying, analysing, and reporting patterns/themes within data, where it minimally organises and describes the data set in rich detail (Braun & Clarke, 2006). A thematic analysis will be beneficial for the purposes of this research because of the inherent flexibility that it posits in identifying and explaining complex themes. However, using this form of analyses means generating codes and themes from qualitative data that seem interesting to the researcher and may potential answer the questions the research has to do with adaptation in the Bay of Plenty. Additionally, codes are used as the basis of themes that are patterns of meaning underpinned by a foundational ideal, which are then useful to organise and interpret the data (Braun & Clarke, 2006).

The first phase of this thematic analysis was a familiarisation with the data (Braun & Clarke, 2006). With regards to interviews, the researcher listened to the audio recordings as soon as the interview ended, if recording was allowed in the first place. Interviews that were not recorded, due to the request of the participant, had discussion notes that were written during the interview, and afterward if necessary. After this initial familiarisation phase, the recorded interviews were transcribed which allowed for the development of coding ideas. Coding enabled for the identification of features in the data that appeared relevant for the research topic at hand. Most literature on thematic analysis indicates that highlighting certain parts of the data in different colours is helpful for identifying patterns, and therefore the sorting of potential themes (Braun & Clarke, 2006). All themes and codes were organised coherently to represent the data obtained accurately and were reviewed afterwards. The data was then organised into text format, followed with certain quotations, and then presented in the findings section in a way that was relevant to the research question and literature reviewed earlier.

## 4.6 Limitations of the Study

One of the beneficial things about the positionality of this research is that it coincidentally happened around the time when adaptation is getting 're-framed' around New Zealand, due to the 5<sup>th</sup> Labour Government's new proposals as well as the local and regional council's own agendas changing. It can be argued that there is a link between the local and central government's recent 're-framing', or 're-vamping', of adaptation initiatives. Nevertheless, the interviews were conducted around a time of change which made the overall research process more intriguing and 'fresh' as some participants were willing to express how this change may alter the council's old way of conducting adaptation

procedures. However, there were also some dilemmas in the interviews themselves. Firstly, the fact that some respondents did not wish to be recorded made it difficult on the researcher to jot down every important detail that the interviewer mentioned. In fact, this may lead to misquotations and incomplete information. This has been remedied however by contacting the interview for clarification on certain concepts to get the most accurate answer possible. Secondly, interviews that were recorded over the phone can contain excerpts that are difficult to make sense of due to interference or the distance the interviewee was sitting from the phone. Although, this has also been remedied by contacting certain interviewees for clarification. Lastly, data from interviews might be compromised because of researcher bias due to poorly communicated questions, data inaccuracies and framing of information that causes respondents to reply in a manner that the researcher desires (Yin, 1989). In order to remedy this issue with interviews, the researcher also used policy documents that were created by the local and regional councils to gain a better formal understanding the of considerations governments must consider when developing adaptation policies and how these may influence the social contract.



# CHAPTER 5: ADAPTATION AND SOCIAL CONTRACT IN THE BAY OF PLENTY

## 5.1 Introduction

This chapter will introduce the core findings of the research in accordance with the focal points in the theoretical framework regarding the legal, practiced and imagined social contracts. It firstly presents the results concerning how the interviewees see institutions as being capable of ingraining adaptation into their current frameworks, and whether this heightens their council's legal accountability to respond to climate change. The second section then presents the policies councils make to facilitate adaptation and how these are examples of governments adjusting their obligations towards citizens under the speculative conditions of climate change. The third section will present the interviewee's opinions on how their council's considerations on climate change adaptation reflect the expectations of the citizens they govern in the Bay of Plenty.

## 5.2 Institutional Assimilation of Climate Change:

### Adaptation's Compatibility with Government Frameworks

#### 5.2.1 National Regulatory Framework Enables Adaptation to be Ingrained at Lower Governance Scales

In the interviews that were conducted, it appeared that local and regional government response to climate change was influenced by natural hazard considerations stemming from national level institutional frameworks. This was mentioned earlier in the context section that legislation such as the Resource Management Act and the Local Government Act make the management of climate change and natural hazards a local and regional government issue. However, some interviewees explained that the recent amendment to the Resource Management Act in 2017 will notably extend government accountability to do with matters such as climate change.

*"Changes in the RMA in 2017 made the management of natural hazards a matter of national importance. That immediately introduced higher levels of accountability for decision-makers under the RMA, and councils are consent authorities."* – WDC6

In particular, it is Section 6 of the Resource Management Act which was amended. The box below contains a passage from this section that highlights the interviewee's point.

Resource Management Act 1991

*"Section 6: Matters of national importance*

*In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall recognise and provide for the following matters of national importance:*

***(h) the management of significant risks from natural hazards."***

Clause 'h' was inserted into the Resource Management Act, on 19 April 2017, under section 6 of the Resource Legislation Amendment Act 2017. Coincidentally, the Edgumbe Flood occurred on April 7<sup>th</sup> 2017. However, it is mostly a response to issues identified following the Canterbury Earthquakes, which have been identified since 2012, and should result in a greater focus on natural hazards risks during planning and consenting processes (Foundation, 2018). The management of significant risks from natural hazards means that these risks must be recognised and provided for as part of the sustainable management of natural and physical resources (Maw & Mehlhopt, 2017). In contrast, Section 7 of the act states that there must be an obligation to "*Have particular regard to*" certain matters, which requires those matters to be given genuine attention and thought, although they may be still be ultimately rejected (Maw & Mehlhopt, 2017). The requirement now is to "*Recognise and provide for*" matters which requires a decision-maker to make actual provision for the listed matters (Maw & Mehlhopt, 2017). Thus, this legislation essentially solidifies the obligations of local authorities under the legal-institutional social contract to respond to climate change. Additionally, it also implicates that councils must give more attention to it than before in their planning initiatives.

On top of this, WDC6 stated that "*Under the Local Government Act, you've got to consider future generations*". The extract in the box below quotes what the Local Government Act says about future generations. WDC6 also described that the amendment to the Resource Management Act and the current Local Government Act "*Line up quite well*" in councils, which further heightens local and regional government accountability under the legal social contract. Although, the Local Government Act has been around since 2002, which means that future generations have been considered into council policy-making initiatives since at least then. Nonetheless, both of these institutional frameworks solidify council's obligations to respond to climate change under the legal social contract.

Local Government Act 2002

*“Section 14 Principles relating to local authorities*

*(1) In performing its role, a local authority must act in accordance with the following principles:*

*(c) when making a decision, a local authority should take account of—*

*(ii) the interests of future as well as current communities; and*

*(iii) the likely impact of any decision on the interests referred to in subparagraphs (i) and (ii):*

*(g) a local authority should ensure prudent stewardship and the efficient and effective use of its resources in the interests of its district or region, including by planning effectively for the future management of its assets; and*

*(h) in taking a sustainable development approach, a local authority should take into account—*

*(iii) the reasonably foreseeable needs of future generations”*

However, other interviewees argued that *“There needs to be more even more legislation, action and leadership from the national level to induce accountability for authorities on all scales of government”* – RLC8. This is because it was stated that *“Local Government New Zealand are crying out for national led direction. Every council individually does not need to re-invent the wheel and it really sends the message. There needs to be centralised action and coordination with things such as more national policy statements”* – RLC8. Therefore, whilst there has been somewhat influential legislation on the national level, which has increased accountability in the regional and local tiers of government, many local authorities are waiting for increased accountability on the central government tier, with regards to climate change adaptation. This is because it was stated by the interviewees that local and regional governments *“Tend to already be under-resourced, and with the advent of climate change it will exacerbate things”* – BOP2. Thus, the legal social contract is underpinned by national frameworks that create enforceable mandates for local authorities to respond to climate change, but have the implication that councils will be negatively held accountable if they do not respond adequately, even if they cannot. Additionally, it was also stated that an increase in central government accountability would allow for *“Big-decisions to be made by the national government, in relation to climate change adaptation, that should filter down so we’re all consistent across the country. Rather than some councils leading the way and other councils not”* – OPD10. OPD10 also stated that the Opotiki District Council has numerous existing natural hazards to deal with, therefore they are obligated under

national law to adequately respond. Thus, this means that even though there are legal mandates obligating councils to respond to climate change, the current institutional framework has the implication that some councils will need to respond more than others because of their and geographies, despite how under resourced they can be, which potentially causes equity issues in local and regional scale accountability.

Lastly, WDC7, who is an incumbent that has been in both national and local government elected positions, witnessed that the debate of climate change has shifted from *“Whether it is a real thing and should be recognised, to yeah we’ve got to act on it. But my sense is that we’re still kind of tinkering because we don’t know what it exactly means for us”*. In this sense, WDC7 was stating that governments shifted from complete neglect regarding climate change, which nullified local, regional or central accountability on the matter, to recognising it as a problem, but with no proper known direction. WDC7 explained that it is this endeavour to understand what climate change means, on all scales of government, which is how it will influence overall government accountability in the Bay of Plenty, and beyond. In essence, the reason why national institutions struggle to grapple with justly incorporating climate into the legal social contract is because adaptation is not defined to its full extent in what it means for the obligations of governments across all scales.

The quotation below illustrates this idea.

*“I think the local and national government is struggling with accountability. And I suppose that’s one of the reasons as to why it’s taking so long to act as it is outside the normal cycle of business, especially with discounting rates as you are talking about very long-term time frames. It’s also right outside of any conceivable and series of electoral cycles. There’s also a distinction between those who do understand it as a major ethical issue of our time whom are trying to understand what it means for people in future generations, and those that do not. So it is changing people’s sense of it, but it is very contesting and difficult.” – WDC7*

### 5.2.2 Local Institutional Frameworks Limit Adaptation

In the interviews that were conducted, some participants stated that climate change has not necessarily altered the view of how local and regional governments perceive accountability under the legal social contract because they have intergenerational equity principles embedded into their institutions. These principles are primarily to do with funding and are explained by the interviewees in the quotations below.

*“I wouldn’t say climate change has altered accountability because we have an obligation towards intergenerational equity anyway. For instance, when we look to fund things through rates sometimes*

*we need to spread that out when we borrow money, so that people in future generations who are going to be receiving the benefit will also pay from the initial expenditure. So that should already be built into the thinking of those processes anyway. So I don't think climate change has required a shift of thinking in that space particularly.” – BOP3*

*“I know that the idea of intergenerational equity comes up a lot when we are looking at budgets and things like that. For all sorts of projects like infrastructure replacements and spreading out debt over an asset for a longer time so you're not lumping up your current rate payers with something that's going to be used over a long time. So I think that intergenerational equity has always been a part of what we do. So certainly climate change will be a huge focus and concept that will guide our response, but it's already sort of in the work that we do.” – WDC5*

Figure 5.1 is an example of how the Bay of Plenty Regional Council's long-term expenditure is going to be managed over the next 30 years for the River Schemes Initiative. This River Schemes Initiative is an example of how councils value intergenerational equity, albeit only being planned 30-years ahead. Nonetheless, the council is going to do this by increasing the general rate up by 9.1% in 2018/2019 and is going to introduce targeted rates for certain regions that people reside in. The purpose of introducing these is to fund work that has a local benefit and to ensure that people who benefit from the service also pay for it (Bay of Plenty Regional Council, 2018). Target rates correlate with the services people receive across the region, therefore if a region does not have a particular service, for instance the river schemes program, they will not be charged for it. Consequently, it also makes it clearer to people within a region where their money is spent. On top of this, the council intends to borrow \$166 million to fund its various programs. Ultimately, borrowing to pay for assets allows the council to spread the cost out over time so that future generations will pay for the benefit they will receive, as well as freeing up money to be invested for future benefits (Bay of Plenty Regional Council, 2018). This approach is principally allowing for intergenerational equity because all generations will reap the benefits of programs such as the river schemes initiative. Although the initiative is only looking 30-years into the future, where the expected impacts of climate change are supposed to last for centuries, the plan still highlights that the principle of intergenerational equity is ingrained into the council's institutional framework, thereby increasing responsibilities under the legal social contract.

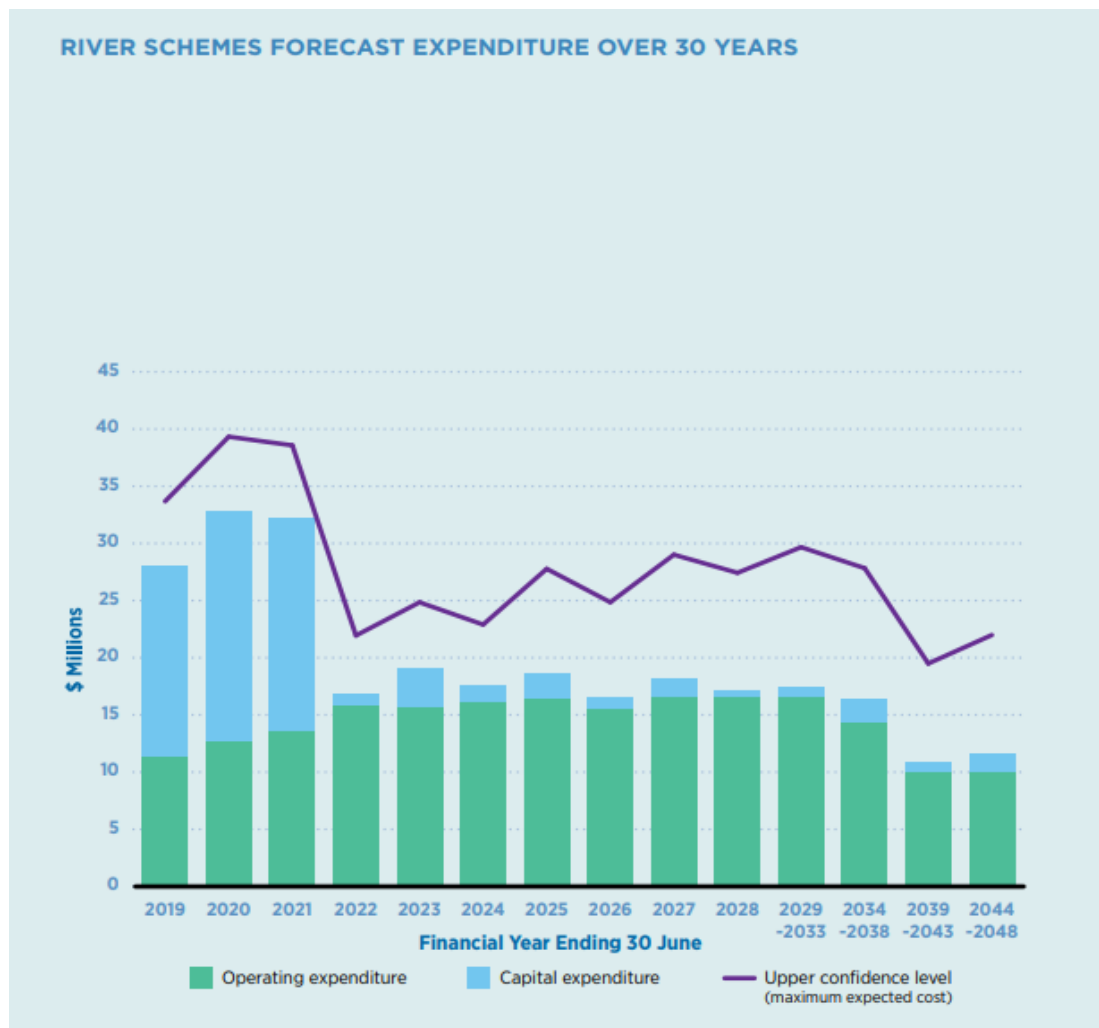


Figure 5.1 River Schemes Forecast Expenditure for Next 30 Years by the Bay of Plenty Regional Council - (Bay of Plenty Regional Council, 2018)

Thus, in this regard, the legal social contract makes adaptation compatible with current local and regional government accountability in the perspective of BOP3 “because councils tend to have a forward-looking perspective in their planning anyway”. However, whilst in this case climate change may not necessarily alter current government accountability, other interviewees believed that in their council’s framing of climate change has gone through a revamping. This revamping has primarily been in the form of increased discussion and awareness of the implications of climate change for their district. But for some councils there has been more policies enacted to respond, such as the Western Bay of Plenty’s coastal erosion policy that has been implemented.

This revamping is further demonstrated in the quotations from the interviewees below:

*“For me there has been an increase in climate change related discussions. In my short time here the council has recently embarked on a climate change project where the intention is to update the current*

*sustainability strategy. There's definitely been an increase on the strategic policy side of climate change related things for sure.* – WDC5

*"In my two years here, the council adopted the Coastal Erosion Responses policy, which is probably the biggest change. We also prepared the Infrastructure Strategy, which is also part of the Long-Term Plan which included some focus primarily around coastal erosion response. There were some regulatory provisions in place under the District Plan for coastal erosion, prior to my starting. But, those have been reviewed and now reflect the particular impacts of sea-level rise."* – WBD9

*"There were always greenies that supported climate change action, but it wasn't supported by the wider community as part of the sustainability strategy as it just wasn't seen as a priority. But in the last year, there has been more mainstream talk about it with the public coming in asking for more local action and input into it."* – RLC8

Albeit, some interviewees framed the revamping that climate change has gone through in their councils as part of obligations and objectives that councils have had for some time but was difficult to put on the agenda. *"It's been easier to progress our strategy with climate change, which was always an objective, but never prioritised like it is now. However, the support is more for adaptation than mitigation."* – RLC8. Although, when asked about whether this revamping of climate change may alter government accountability, one interviewee responded with the following, *"I think that when you are looking out that far and trying to consider climate change, you have to make decisions in a completely different way. That is challenging for local authorities because they are bureaucracies. Bureaucracies are not known for being agile in responses in changing the way they do things quickly. But that's the nature of a bureaucracy really. It is challenging and can potentially lead to inaction"* – WBD9. Thus, whilst some interviewees, and council documents, clearly showed that climate change is increasingly being put on the agenda, other interviewees suggested that they are *"Not at the stage yet where we can make proper decisions that far ahead, no one is"* – BOP4. Therefore, the implication is that whilst climate change has gone through a recent revamping phase in councils, the current bureaucratic parameters restrict the scope of what could possibly happen. In essence, the current legal social contract of local and regional institutions is compatible with adaptation to be incorporated into their frameworks, but the bureaucracies that run them are too chaotic and either negate the full potential of this revamping, or are too slow to process it, thereby lessening government obligations to adapt.

Additionally, other interviewees stated that even with this new prioritisation, matters such as more every day priorities can still be a hindrance to taking further action. For instance, WDC7 stated that *"Councils just get co-opted with the day-to-day stuff... Which just churns out heaps of staff time and energy. So, with everything else going on the ability to do all that, then take a big breath and then look*

*at the bigger picture in a long-term strategic way is a big challenge because of the urgency that is involved with minor things that need to get done by the end of the day such as cracks in the pavement”.* In this regard, climate change has a long way to influence a radical change in the institutions of local and regional governments because attention to other everyday matters still halts progress. Therefore, the stringent nature of bureaucracies combined with their prioritisation of every-day matters lessens local and regional government accountability to respond to climate change under the legal social contract.

## 5.3 Council Adaptation Policies Solidifying Obligations towards Citizens

The policies councils in the Bay of Plenty have created to adapt to climate change dictate the extent to which their obligations under the practiced social contract are solidified. In particular, the method a council employs towards a particular project solidifies its obligations towards adapting to climate change as it is the result of wider pressures from the practiced social contract. Thus, some councils in the Bay of Plenty have similar policies in proposing how to adapt to climate change which are primarily indicated in their 2018-2028 Long-Term Plans, and other councils have different methods. These are all categorised below under timeline, precautionary and status quo-based policies regarding infrastructure, which therefore illustrate the differing obligations councils in the region have placed themselves under the practiced social contract.

### 5.3.1 Timeline-Based Policies Extend Council Obligations Towards Citizens

Some councils, such as Opotiki, have comprehensive measures regarding coastal erosion, flooding or other natural hazards in their 2018-2028 Long-Term Plan. For example, in Section 6.7 the plan states that there are three options regarding an investment decision on pump stations, reticulation and ponding upgrades.

These are outlined in the box below (Opotiki District Council, 2018):

Option 1: Complete stormwater infrastructure upgrades to allow for the onset of climate change. 2019-29. for \$8.1m. Includes \$5.2m from Option 2.

Option 2: Complete stormwater infrastructure upgrades to address current flooding 2019-24 for \$5.2m.

Option 3: Maintain status quo.

The justification for these options is also outlined in the same section, where it is explained that the Opotiki stormwater reticulation and discharge scheme have historically been overlooked as the least critical waters scheme. Therefore, *“With the global recognition of climate change and the*



improvement in engineering investigation methodologies over the past 10 years, appreciation for effective stormwater infrastructure has dramatically increased, which is necessary because of how vulnerable the Opotiki township is to flooding, due its location bounded on three sides by the Waioeka and Otara Rivers and their stop banks” (Opotiki District Council, 2018). On top of this, OPD10 explained that the township is generally around two to five meters above sea level, which makes it even more susceptible to natural hazards. However, the plan even goes as far as stating and predicting when these upgrades will occur, but explicitly states that they are subject to change “beyond the 3-year term and are based on reassessment of priority post 2018 Long-Term Plan finalisation” (Opotiki District Council, 2018). Figure 5.2 is an extract from the plan below that highlights key dates, decisions and specific costs.

### Stormwater Project Timeline

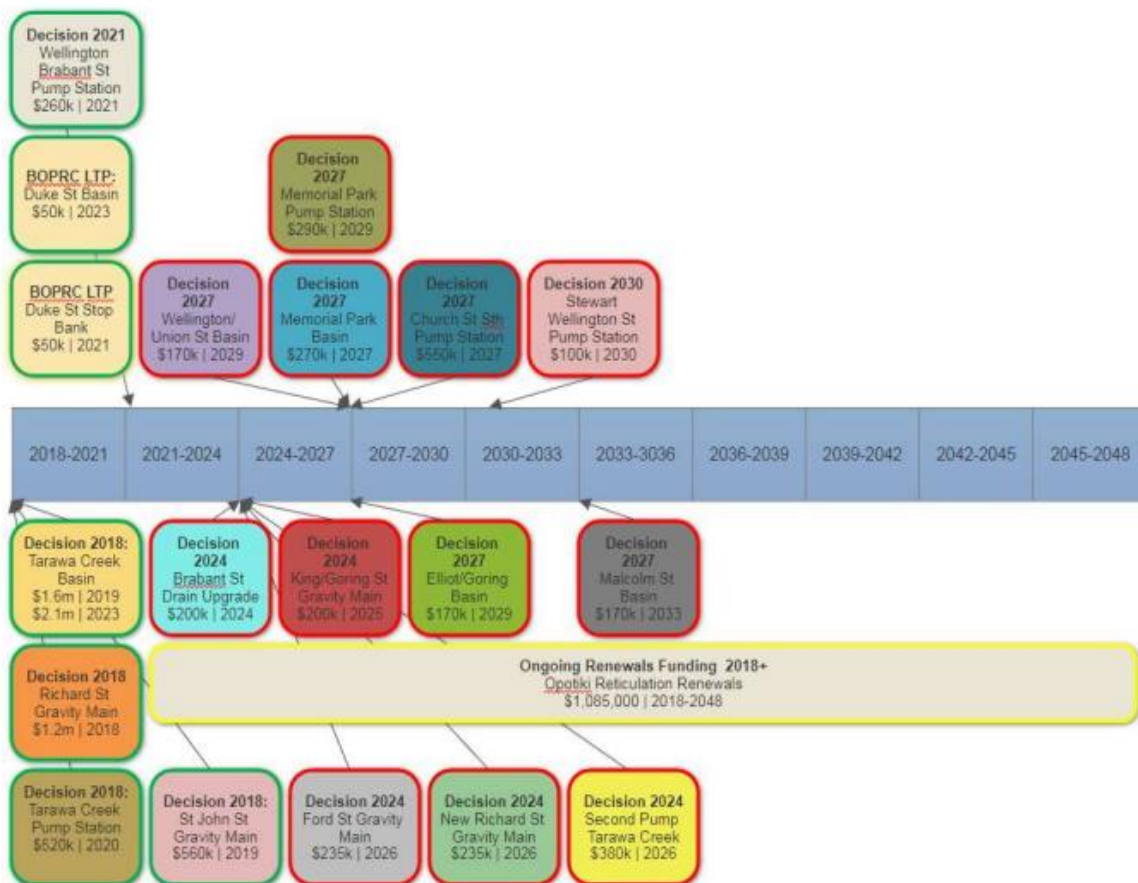


Figure 5.2 extract from Opotiki District Council's 2018-2028 Long-Term Plan Outlining Stormwater Decision-Making Timeline (Opotiki District Council, 2018)

Although these are still only choices, as Option 3 in Section 6.7 clearly states that there is a possibility that the status quo will be maintained. But this is rather unlikely as OPD10 argued that due to the flooding in 2017, a general awareness of climate change as well as how susceptible the district is to

flooding, the council and people in Opotiki have a good understanding of what the future would hold if there was no action. OPD10 also stated that with regards to accountability, the council is mindful of equipping new infrastructure to incorporate climate change measurements for the next 50-100 years because *“Putting things in that might be acceptable to people now won’t be acceptable to people in 50 years’ time”*, which also solidifies the council’s obligations to adapt under the practiced social contract. The quote below further exemplifies this idea.

*“We’ve built stop banks over the years in Opotiki and so that makes people a bit numb to climate change because they assume these stop banks will protect us. So what Edgecumbe did was highlight that stop banks serve a purpose, but they do fail which could cause significant damage. People who were sitting inside the stop bank were paying their targeted rate towards their maintenance and were quite happy because they thought the stop banks were doing their job. Then when the flooding happened people realised the stop bank did not work and some were flooded out of their homes, when they assumed they were perfectly fine.” – OPD10*

Additionally, the Bay of Plenty Regional Council’s 2018-2028 Long-Term Plan makes *“significant assumptions”* on the total amount of money that is going to be spent on infrastructure over a timeframe of 30-years to climate proof it for the future (Bay of Plenty Regional Council, 2018). For instance, the plan states that in the Major Flood Control Capital Works Programme the council will spend \$1.9 million on climate change 2030 scenario in the years 2024 and 2025. In the same programme, the council plans to spend another \$775,000 on climate change capital works between 2041-2045 which are essentially new flood control infrastructure projects (Bay of Plenty Regional Council, 2018). However, the plan mentions that the Infrastructure Strategy is a live document and will develop as new information is incorporated, such as new climate change data. Nonetheless, the fact that their policy is factoring in climate change that far ahead into its planning and budgeting has the implication that the regional council is aware of its obligation to act now and is extending its obligation by creating 30-year timeframes. Although, it does not necessarily crystalize it into a pledge under the practiced social contract, but it does highlight that it intends to extend its obligations to adapt.

### 5.3.2 Precautionary Based Policies Allow for Flexibility in Council Obligations towards Citizens

The Western Bay of Plenty District Council has outlined in their 2018-2028 Long-Term Plan that \$20,000 will be dedicated towards the formulation of a climate change action plan (Western Bay of Plenty District Council, 2018). This action plan will guide the council in developing relevant policies and best practice in determining a precautionary response to practical infrastructure provisions in

some areas with known natural hazards. It is also stated that the plan will help the council in utilising the best approach to managing these infrastructure provisions. The Western Bay of Plenty's plan states that \$200,000 will be budgeted towards assessing the council's own assets along coastlines, with regard to coastal erosion and sea-level rise (Western Bay of Plenty District Council, 2018). Whilst the plan explains that the council incorporates climate change measurements into infrastructure parameters, it does not detail how much. Nonetheless, these are relatively different budgeting allocations compared to the councils beforehand because they are investigating whether the current budgeting and infrastructure plans are going to be viable in the future, which is part of the precautionary approach that is applied. To support this, the plan states that *"We need to better understand the implications of climate change to inform future management and investment decisions we make on our infrastructure"* (Western Bay of Plenty District Council, 2018). Thus, the council's precautionary based policies highlight that they understand climate change poses extended obligations under the practiced social contract, but does not constrain them to one set of methods and timeframes, which allows for more flexibility.

One comprehensive policy that deals with the precautionary approach is the Western Bay of Plenty's Coastal Erosion Responses Policy. This policy was made in 2017 and is looking at what protective measures need to be considered for infrastructure due to inundation and erosion. Section 3.1 justifies the creation of this policy by stating that *"Over time, with a predicted sea level rise of +1 m in the next 100 years, coupled with more frequent and intense weather events, what we currently consider to be extreme 1 in 100-year coastal hazard events will trend to becoming the average event"* (Western Bay of Plenty District Council, 2017). This section also claims that *"In the next 20 to 30 years coastal hazard events may be manageable but beyond this inundation risks will grow much more rapidly even with modest sea level rise"* (Western Bay of Plenty District Council, 2017). WBD9 gave a description of what the policy intends to do, *"It looks at what approach the council might take where infrastructure on publicly owned land is going to be impacted by erosion"*. It is important to highlight that the interviewee mentioned public land, which is council owned, rather than private land which is owned by regular homeowners.

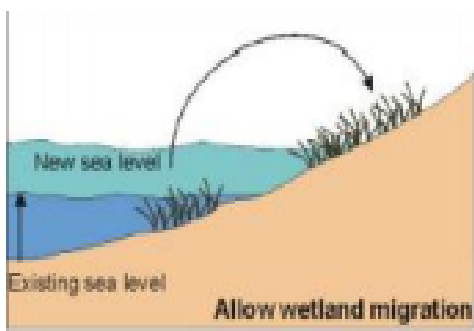
Section 3.2 sets out the council's obligations and states that in most cases there is no *"Legal obligation for the council to protect its own lands or private property from erosion"* (Western Bay of Plenty District Council, 2017). However, it also points out that there is a *"view that by the Council providing limited protection to some private properties in the past it is obliged to continue this approach or provide compensation if Council changes its approach to erosion"* (Western Bay of Plenty District Council, 2017). This section complicates the accountability of the Western Bay of Plenty District Council because it recognises the dilemma, but does not create a solution other than say that *"It could be*

*argued that those property owners who have been defended in the past have already enjoyed considerable benefit at public expense, therefore a former injustice to the ratepayer is being put right. However, each situation will be assessed on its merits and Council's general approach to erosion mitigation is set out in this Policy"* (Western Bay of Plenty District Council, 2017). More specifically, Section 4.1 states *"That the council will adopt a precautionary approach to inner harbour and coastal erosion protection and to the future subdivision and intensification of the inner harbour margins and coastal settlements"* (Western Bay of Plenty District Council, 2017). In essence, the precautionary approach that is undertaken in this policy complicates the obligations of the council under the practiced social contract. This is because the council recognises that there needs to be coastal protection but has given itself the flexibility to determine its own accountability to enact these adaptive measures.

Section 4.2 goes into further detail and explains the three approaches the council may take. The three different approaches are identified in Figure 5.3 below from the document to illustrate how they work (Western Bay of Plenty District Council, 2017).

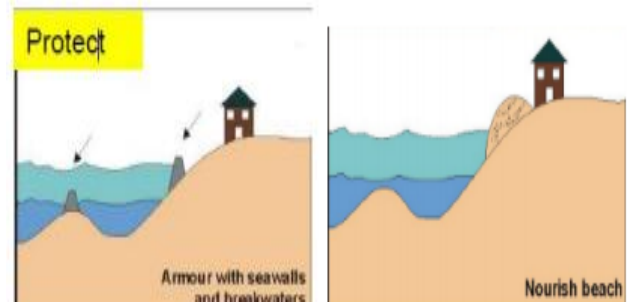
Approach 1:

**“Let nature take its course** - coastal processes of erosion (the gradual wearing away of beaches and cliffs by the natural wave action) and accretion (the gradual build-up of beaches and dunes from sand deposited by natural wave action) are left to occur naturally, without any human intervention. For currently undeveloped inner harbour and coastal margins Council will promote a “let nature take its course” approach to allow the dynamic natural processes (including sea level rise) to take place.”



Approach 2

**“Holding the line** - protect the existing foreshore and/or strategic assets from further erosion, in line with the New Zealand Coastal Policy Statement, by promoting the use of soft engineering options (dune replanting/beach nourishment) over hard engineering solutions (timber seawalls/rock revetments) where appropriate. Council will need to balance the life expectancy and value of the strategic assets to be protected and the lifespan of any proposed coastal protection structure. Hard rock structures have a longer lifespan (+80 years) than timber structures (30-50 years) but are costlier to construct, maintain and upgrade.”



Approach 3:

**“Adaptive approach** - manage hazard situations by abandoning assets or relocating assets and activities away from the coastal processes threatening them, thereby removing the hazard. Council will assess the merits of taking an “adaptive approach” on the future management of inner harbour and coastal erosion. This means taking at least a minimum 100-year view in relation to the effects of sea level rise and climate change.”



Figure 5.3 Extracts from Western Bay of Plenty District Council’s Coastal Erosion Responses Policy

These approaches are regarded as being precautionary in the sense that under Section 5.3 the council has 14 different assessment criteria to analyse the appropriateness and timing of when to best utilise these three approaches. The criteria range from (Western Bay of Plenty District Council, 2017):

- Effects on amenity values,
- The ability and willingness of the wider community to pay for maintaining shorelines

- Construction and maintenance costs of protection works, which may be greater than the capital value of strategic assets to be protected
- Evaluation of where existing inner harbour or coastal protection structures have failed, whether replacement is a sustainable option.

Thus, these criteria place obligations under the practiced social contract on the Western Bay of Plenty District Council to monitor coastlines and ensure proper action is taken. Therefore, this heightens the council's overall accountability if something goes wrong within these jurisdictions.

The Whakatane District Council has precautionary based policies which are outlined in its 2018-2028 Long-Term Plan. This is because the council is also in the process of creating an action plan to respond to climate change with a similar purpose that is to *"Provide strategic direction for the council and officials around climate change and its implications and how it factors into decision-making. We've only just started that process, but I could see that will be quite influential for the council moving forward"* – WDC6. Additionally, the long-term plan explains that one of the issues in the future will be the water sources in Whakatane and Ohope being more susceptible to saline water intrusion during periods of low river flow, contamination with cyanobacteria, and high turbidity during extreme rainfall events. Thus, the plan states that recently the Council has managed the reduced supply capability caused by salt water intrusion by imposing water restrictions and installing a temporary emergency intake upstream from the permanent intake (Whakatane District Council, 2018). WDC7 confirms this because he met with the Mayor of Whakatane, who had the intake pipes in the river moved *"Because salt water was encroaching further up the rivers, which he linked to climate change"*. However, the Long-Term Plan declares that climate change will exacerbate those problems, so the council is investigating other water supply options. These options are listed in the box below (Whakatane District Council, 2018).

Option 1: Supply water from a new bore in the Paroa Road area, although preliminary tests have found the water quality at this bore to be of poor quality.

Option 2: Expand abstraction from the Otumahi water supply and construct a pipeline to the Whakatāne Water Treatment Plant. This would cost approximately \$6.8 million plus additional resource consent costs and is not currently being progressed.

Option 3: This option is currently underway with exploration bores further upstream of the existing water treatment plant. If successful an infiltration bore will be established in this location, likely lessening the effects of climate change on the resilience of the Whakatāne and Ōhohe water supply.

Option 4: Develop a large water storage site within the Awakeri/Paul Road area which will be supplied from the Otumahi system. Connecting it to the Whakatāne and Ōhohe water supply will provide resilience, increased security and flexibility of water supply into the future.

The plan then states that the council will investigate a long-term solution for water security, taking into account climate change impacts and resilience for the Whakatāne water supply (Whakatane District Council, 2018). However, in the meantime the council will continue to utilise the temporary emergency intake arrangement and work towards consumption reduction measures until a decision is made on this project. Nonetheless, the options in the policy mentioned above indicate that the council has a heightened sense of accountability under the practiced social contract as they are planning and looking into options that are not necessarily relevant to the district yet, but will be cautious in how they go about this.

The Rotorua Lakes Council, in their 2018-2028 Long-Term Plan recognises that climate change will cause more frequent intense winter rainfalls, where current 1-in-50-year rain event of 200mm rainfall will increase in 2040 to 1-in-33, and by 2090 to 1-in-18 (Rotorua Lakes Council, 2018). It therefore states that stormwater capacity will need to be increased where estimated cost to upgrade may be in the order of \$200m over 70 years. The plan also states that “*Stormwater designs are being revised to cater for increased predicted rain events*” (Rotorua Lakes Council, 2018). More specifically, in the water supply, wastewater, stormwater and transport assets, the council has incorporated climate change projections into their future budgets of maintenance and upgrades, which leaves room for spending if required. Although this is less specific than the previous council’s policies, the Rotorua Lakes Council still recognises that climate change will impact the region. In the significant forecasted assumptions section of the plan, the council stated that “*If it is assumed that climate change will impact the council in the future, and it is adequately planned for in our planning, then the risk to the council is low and it will be better able to cope with the nature, extent and timing when events do occur*” (Rotorua Lakes

Council, 2018). Thus, this part of the policy states that the council is aware of a low risk if there is response to climate change over time which means that it can proceed to be cautious in its planning parameters (Rotorua Lakes Council, 2018). Consequently, this creates obligations for the council to adequately respond to a low risk scenario for climate change. However, this also implicates that if there is a high-risk scenario, then the council will be held accountable under the practiced social contract.

### 5.3.3 Status Quo Based Policies Do Not Alter the Obligations of Councils Towards Citizens

Tauranga City Council, in their 2018-2028 Long-Term Plan, state that the council has provided placeholder budgets for resilience infrastructure upgrades which are significant (total \$175m over the last 7 years of the Long-Term Plan). Part of this budget will be allocated towards *“Investigations to get a better understanding of the risks and implications for our infrastructure and emergency planning processes”*, and it was stated in this section of the plan that climate change and its associated impacts on sea and groundwater levels were part of these risks (Tauranga City Council, 2018). Therefore, the council is in the process of obtaining information on climate change, which will then be used for further inquiry and planning. However, in their Infrastructure Strategy 2015-2045 it states that the council has no set policy position on considering the effects of climate change on existing infrastructure within Tauranga (Tauranga City Council, 2015). This effectively means that there are no substantive obligations in the form of policy under the practiced social contract, in comparison to the other councils, for the council to adapt to climate change.

Kawerau District Council’s 2017/2018 Annual Plan states that the *“Council has assumed that the excess capacity in the District’s infrastructure will cope with any effects of climate change such as changing weather patterns (extreme weather events)”* (Kawerau District Council, 2017). In their recent Long-Term Plan, the council also states essentially the same thing under the climate change section:

*“Extreme weather events in Kawerau have not generally caused significant flooding or required Council to change levels of service. Flooding in the district in 2017 however, from high intensity rainfall over a short duration, required the council to undertake some work to increase capacity in the stormwater system to prevent possible future flooding. Council recognises that due to climate change, more extreme weather events are likely over the period of the Long-Term Plan. The planned costs in this Plan do not include any possible financial implications of natural disasters”* (Kawerau District Council, 2018).

Essentially, these policies on climate change have the assumption that there are adequate measures in place, with regards to infrastructure, to respond and adapt to the impacts of climate change. However, in another section it states that the council will be upgrading two culverts under River Road to eliminate clogging which has resulted in the backup of water causing property inundation, which



are due to changing rainfall patterns. Therefore, *“The council will regularly monitor climate changes and assess the capacity of the network to cope during significant rainfall events. Any decisions to make changes to the network will be based on these assessments”* (Kawerau District Council, 2018). Lastly, under the funding for infrastructure and affordability section, the plan declares that *“The effects of climate change, increasing environmental expectations or the need to improve resilience to earthquakes may require a territorial authority to invest in upgrading infrastructure”* (Kawerau District Council, 2018). This policy carries the implication that if there needs to be further investment in upgrading infrastructure due to climate change, a territorial authority may need to do this. In essence, this shifts the obligation to adapt away from the Kawerau District Council under the practiced social contract because it implies it will not be them needing to invest into infrastructure.

## 5.4 Council’s Considerations of Climate Change

### 5.4.1 Shift in Governance from Technocratic to Citizen Led

In the interviews that were conducted, it was stated that public support was a major factor that councils consider in their adaptation responses. This is because interviewees, particularly from the Bay of Plenty Regional Council, found that *“Climate change adaptation must be a community led thing”*, as stated by BOP1. The interviewee explained that this was a result of councils starting to understand that going forward with adaptation would require various expectations of people to be met. Thereby, the logic is to let citizens in the Bay of Plenty decide the expectations of local and regional councils themselves via the imagined social contract. BOP2 also explained that radical turns and *“Time investment action to climate change can be risky”*, in the sense that making big decisions without proper consultation can have negative perceptions on governments because they are not appealing to the expectations of people alive now. Therefore, BOP3 said that, in light of accountability, the regional council is going through a shift of governance *“From going out to communities and telling them what to do, to a facilitatory role”*. BOP3 explained that *“The old approach is not going to work because it needs to be a community led thing, so it’s more about shifting our role to supporting and facilitating conversations and decisions by communities”*. The interviewee also added that there were other factors that were influencing the shift in the council’s overall role in the region, *“But in the climate change space it’s the only way it can be done as you need the community to be on board with how it’s going to affect them”*. Essentially, this is because of the idea that climate change may potentially require large scale societal shifts that will change people’s original expectations of governments. Therefore, this shift in governance will let the council get a step ahead by identifying the expectations from the people they govern under the imagined social contract.

Another example that shows that the regional council is considering public support is when the interviewees discussed that input from communities, who may be impacted by climate change, is seen as an important figure in the current and future adaptation responses *“Because communities are the ones that are going to be impacted most”* – BOP3. This continues to resonate with the logic of letting people decide what their expectations are of governments, rather than councils doing so, which will dictate the extent the imagined social contract is altered. For instance, BOP1 described that *“People are usually not aware of the full consequences of climate change, especially in their own area, therefore it is difficult to even start a discussion due to the difference in views”*, which is resonated in the implementation of adaptation policies directly related to the wider public. BOP1 also explained that *“The key to loosening this language barrier is frequent consultation, education and conversation campaigns with certain communities”*. This would allow for better citizen engagement as there would consequently be a better understanding of climate change. Nevertheless, BOP1 stated that the issue is that even if people gain an understanding of the different parameters of climate change, *“Those things may not necessarily be relevant to people regardless”*. In light of this, BOP1 explained that the councils take note of these and therefore use educative options that are relevant to them, *“For instance, in the countryside the only thing people care about is fish, then we have to take that into consideration when we discuss the future climate as there could be detrimental impacts on rivers due to excessive rainfall and therefore fish levels might decrease”*. Thereby, having public consultation programmes, that include people’s priorities, makes the regional council place slightly more power in the hands of the citizens that may be impacted by climate change. Ultimately, this shows that the imagined social contract is changing because the governments are realising that some issues, such as climate change, require a deeper understanding of people’s expectations of governments, to initiate a better response to climate change.

Furthermore, the Bay of Plenty Regional Council’s 2017/2018 Annual Report states that they have created two new positions to focus on climate change (Bay of Plenty Regional Council, 2018). In particular, BOP1 stated that these roles will foster the creation of more *“Deliberate adaptation action plans that are currently in development to help identify the council’s role in the future”*. Therefore, part of the new position’s roles, and the in-development adaptation action plan, is to extrapolate the council’s placing in the role of adaptation and community engagement, *“Which is part of a construction of a moral framework will help guide future decisions with communities”*, according to BOP1. Additionally, the departments in *“These roles will oversee all adaptation related activities and make them more concise”*- BOP2. Thus, the fact that the regional council created new roles that are specific to climate change activities, highlights that the council itself needs more knowledgeable staff to work on the matter because they recognise that climate change needs prudent policy and decision-

making. Moreover, this shows that the council is considering the community further into their policy-making and planning, which implicates a deconstruction in the imagined social contract as the council is attempting to create a framework of decision-making, partially based on the expectations of what communities may want from them.

#### 5.4.2 Funding Adaptation May be a Problem

In the interviews that were conducted, funding was a major consideration for climate change adaptation policy, or to put in more simple terms, a lack thereof. In essence, this is because citizens have the expectation that councils will buy out their damaged properties. More specifically, BOP4 explained that adaptation is not a dissimilar issue from all planning *“As you quickly get to the cost point of who is going to pay for it”*. BOP4 pointed out that when funding models are looked at for local government adaptation initiatives, there is a general assumption that *“We can afford to do this. But I’m not sure we can afford to do this as a society”*. The interviewee also drew the link between the Bay of Plenty and the Hawke's Bay, which is a few steps ahead in the adaptation area, to highlight this. Essentially, the Hawke's Bay project has gone to the stage of discussion where people are asking who is going to pay. Thus, *“The residents are saying the council let them build near the beach, so the council has to pay, but does the council need to pay and how on earth is it going to?”* – BOP4. Therefore, it appears some interviewees from the Bay of Plenty Regional Council are aware of the potential future discussions that will take place, as a large part of the community is residing in areas that are within hazard prone coastal and flood risks, despite the fact that the council is not at that stage with the community yet. Moreover, the BOP4 stated that, with regards to accountability, *“There is now a question who is likely to be responsible to pay for adaptation measures”*. BOP4 further explained that this is because local, regional and central governments have strong principles of *“Nobody gets left behind”*, under both the government's and citizen's own expectations of the imagined social contract. In terms of disasters, climate change can alter this principle due to the costs involved, therefore the council does not want to *“Throw that principle out without thinking things through properly”* - BOP4. The consideration here is one of finding a new way to deal with policies that will require managed retreat from hazardous areas because it would get too costly in the long-term.

BOP4 cited a case at Matata about managed retreat as an example of a microcosm of the potential dilemma climate change will bring upon in the future. In the case of Matata, the area was flooded in 2005 by a debris flow that came from inside a gully that knocked over several properties. These properties were rebuilt, however recently there were hazards that had been identified as intolerable to live with by the council which caused a plan change to extinguish existing use rights to some properties. BOP4 then stated that *“Ultimately the deal is that these houses have got to be purchased, which will cost a few million dollars”*. With this in mind, the interviewee then discussed that this case

illustrates a microcosm of what citizens living near coastal areas in New Zealand are to expect in the future with regards to adaptation. “For instance, *Ohope* is a small town located on a sandspit with expensive real-estate, I don’t think we can take the *Matata* example and buy out the front row of *Ohope*”. Figure 5.4 is an image from the top of Mount Maunganui overlooking expensive real-estate and shopping complexes to highlight the interviewee’s point on the potential scope of funding managed retreat in the future in the Bay of Plenty. This funding dilemma highlights that the regional council must consider the communities’ expectations of them versus the council’s legal liability and general accountability to respond. In essence, it highlights how some citizens, from the perspective of the interviewees, have certain expectations of the government to protect them from harm. In this case it is from the impacts of climate change under the imagined social contract, but the council does not have the resources to do this in the future.



*Figure 5.4 - Overview of Coast Developments at Mount Maunganui (Researcher’s Own)*

Additionally, WBD9 explained that insurance is also something that councils are widely considering in their policies regarding adaptation. This is because there is a high chance that insurers will not pay for the damages that climate change will cause, *“Due to fact that the risk that has been known”* – WBD9. WDC6 explained that this could exacerbate the dilemma councils already have with funding things such as managed retreat *“As a lot of people, don’t understand that risk, when it becomes known, so they’re unlikely to get insurance as it has an annual renewal and insurers can just walk away at any point”*. This implicates that the social contract should extend beyond states and citizens, because other large stakeholders, such as insurance companies, have power over outcomes that are out of government’s control. WDC6 then explained that *“When you put this on the stage of coastal hazards people are still paying premium money for beach front properties under the expectation that someone is gonna come and buy them out. I can’t see that readily happening, particularly if information becomes known that the risk of sea-level rise on those properties becomes more certain. So there needs to be some long-term strategic thinking that’s quite wide ranging”*. Thus, this further elucidates the idea of culpability between citizens, the state and other actors in the imagined social contract concerning funding.

Lastly, WDC7 stated that policies regarding managed retreat also extend beyond whether the government is accountable to pay for them. This is because managed retreat has other ethical and equity implications for the people that chose not to live near hazardous areas, as well as people who live in economically and socially deprived areas. *“One of the things that worries me with managed retreat, is that are we seriously gonna ask people in Murupara, one of the most economically deprived areas in the country, to pay for really wealthy people who have been living in mansions on the beach for however long whom knew that climate change is coming?”* – WDC7. This raises the question of personal responsibility under the imagined social contract as councils will essentially be paying for people who *“Wouldn’t take responsibility for the choices they make”*, according to WDC7.

#### 5.4.3 Infrastructure Provides False Sense of Security

Similar to funding managed retreat, some of the interviewees made points that councils in the region are considering whether policies on building and maintaining infrastructures to protect people are a viable option for the future as they potentially create a falsely continued expectation of protection. To elaborate further, OPD10 explained that raising stop bank levels will only go so far due engineering and inefficiency factors. Therefore, OPD10 stated that the difficult question is *“Whether we should be thinking where we position our population centres? We can put things in place to raise floor levels, but the trickier discussion is actually is this an appropriate place to be investing and should we be looking to build in other areas?”*. BOP3 also stated that the continuation of relying on infrastructure and *“Building higher and higher flood walls will just not be economically viable in the long-run”*. The

dilemma here is surrounding the idea of sustainability in current hazard reduction methods and the ability of the council to provide people with safety, which would be costly if the structures had to be repaired and upgraded constantly due to climate change. Additionally, WDC7 explained that the flooding in Edgecumbe in 2017 triggered a conversation around *“The broader question of long-term prognosis of the Rangitikei Plains. This is because it used to be a massive wetland and it will continue to be a massive wetland. We’ve got a wild river flowing through it, which we think we’ve tamed but it’s clearly shown that it hasn’t been tamed”*. The interviewee further stated that *“Our civilisation is locked into this mindset of confinement where we will tame nature, we will build bigger stop banks. We will ensure you never have to move because we have to build a massive wall. But at some stage we can’t keep doing that”*. Thus, the consideration around policy on retaining infrastructures to protect people is something council staff and incumbents are increasingly becoming more sceptical of. Moreover, the implication of this kind of thought train on accountability is that if governments continue making promises to people that they cannot keep, as highlighted by WD7, then the imagined social contract is bound to be impacted negatively because people’s expectations will stay in line with what councils are claiming they can provide.

#### 5.4.4 Uncertainty is a Problem, But Only a Small Part

Uncertainty, with regards to the precise impacts of climate change, is another major consideration councils must factor into their adaptation policies because it can alter citizens’ expectations of when or if councils need to respond to climate change. In particular, WBD9 stated that *“Uncertainty is a barrier that’s not going to change anytime soon. Unless the science becomes crystal clear tomorrow, which seems to be highly unlikely”*. WBD9 also explained that this is because there will be a myriad of potentially different impacts climate change will have on the region, as well a distant and changing time frame of when these are supposed to occur.

*With general stuff, even before now, we’ve had a 100-year planning time frame, so in 100 years let’s assume 0.8m sea level rise. Okay, so that’s easy and you model based on that and work the policies back from that point. But now, we’re in the situation where that kind of framework is not particularly robust. So now it could be 2.8m or 0.6 meters in 100 years. The further out you go out the more uncertain the outcome is.”* — WBD9

However, BOP2 said that *“Regardless of the uncertainty, councils still respond in whatever way they can”*. WDC6 explained, that the predicted range of impacts is still useful for councils in the sense that it helps planners identify a threshold of when to act. Thus, WDC6 stated that *“If you and the community can identify some points at which you can touch base, as in which track is starting to show what is more realistic than others”*. The implication here is that governments must be careful in how

they frame uncertainty and thresholds of when to act, because that will dictate the extent and timing of their response to climate change. Additionally, the framing of uncertainty must also be done in a way that lets communities understand at what points there needs to be action, therefore their expectations of government response are in line with the reality of the timing of climate change's impacts. Alternatively, WDC6 also said that *"If you just use a maximum credible events scenario, then that becomes very problematic for a lot of communities"* with regards to applying adaptation measures that are not pragmatic and look to the worst-case scenario only. Thus, the main issue would be in being able to come up with *"Robust enough policies"* that factors deep uncertainty into future climate scenarios, according to BOP2. BOP1 stated that councils are using a *"Precautionary approach and take things as they come"* which does not ground the councils to a particular decision-making process in dealing with climate change adaptation. Instead, it *"Grants the councils with the power of flexibility, which in turn will be used to deal with aspects of uncertainty"* – BOP1. Therefore, the council's considerations of uncertainty, from the interviewee's perspective of citizen expectations, shows that uncertainty plays a major role in framing the imagined social contract. This is because whilst councils are still obliged to adapt to climate change under uncertainty, they understand that there needs to be a precautionary approach in place to guide their response, which is in line with citizen's expectations under the imagined social contract. Consequently *"Councils must find a balance"*, according to BOP1, as responding with drastic measures under uncertainty would not suffice with the citizens now, despite the response potentially being beneficial for them and future generations.

WDC7 was strong in opinion that uncertainty does not mean councils should remain static and not act on adapting to climate change. In particular, WDC7 said that *"Uncertainty can be an issue to a degree, but it can also be a bit of a cop out. We may not know exactly what's going to happen, but we've got a pretty good broad picture. One of the problems is I don't think we've pulled it all together and promulgated it throughout the organisation"*. WDC7 explained that this supposedly causes a certain tension within councils where there is intention to act but it can limit what options are currently available. Additionally, WDC7 believed that uncertainty was not necessarily the biggest detail councils should focus their attention on because the underlying foundations of risk are associated with whether *"People are vulnerable to hazards in the first place, not when something is expected to happen"*. WDC5 adds to this idea by saying that, in relation to uncertainty, *"Our district generally has low socio-economic areas and I think that there are a lot people that live day-to-day and it's not really an option to think about it. When you don't even know how to put food on the table, engaging in a discussion about climate change, for instance how afraid you are of the impacts in about 100 years, is just so far removed from day-to-day survival that it becomes a privilege to think about"*. Essentially, what is being said here is that, with regards to the imagined social contract, this framing of uncertainty

mixed with everyday struggles is something that councils will need to understand more because it may completely alter the way they perceive the expectations of citizens and more so what citizens could expect from governments. The quotation below illustrates this point further.

*“There’s always going to be uncertainty, and I’ve gone to talks where people ask what’s the baseline of sea-level rise at 2080? And in 2080 we don’t know whether it’s going to be this or whether it’s going to be that. But I think that’s kind of irrelevant because climate change is not going to stop at 2080. It’s going to keep going for hundreds of years, so whether it’s going to be 2080 or 2150, in terms of basic settlement patterns and infrastructure, we’re trying to argue over a detail that’s not the most critical question” – WDC7.*



# CHAPTER 6: DIFFERENT SOCIAL CONTRACTS, DIFFERENT OBLIGATIONS

## 6.1 Introduction

In this chapter the research findings are discussed in the context of the theoretical framework established in Chapter 2 regarding legal, practiced and imagined social contracts. These will be examined in light of international and national scholarship on climate change adaptation and the social contract. The first section will discuss the role of institutions in facilitating the legal social contract. The second section will discuss the role of policy in facilitating the practiced social contract. The third section will discuss the role of council considerations in facilitating the imagined social contract. Lastly, this chapter will tie the findings back to the original question of whether climate change adaptation alters the traditional conceptions of the social contract.

## 6.2 The of Role Institutions in Facilitating Legal Social Contract

International scholarship states that humans pursue common goals and reconcile differences, respond to threats and opportunities through institutions and the mechanisms of deliberation and decision making that are enabled or constrained by institutions (Dovers & Hezri, 2010). Institutions are defined as being the set of rules, informal norms, or shared understandings that constrain and prescribe political actors' interactions with one another, which can be generated and enforced by both state and nonstate actors, such as professional and accreditation bodies (Gilad, 2015). The findings section demonstrated that there are multiple existing institutional frameworks that already determine the local authority's accountability in the Bay of Plenty, to people now and in the future according to the interviewees, prior to the consideration of climate change. Thus, the institutions that enable adaptation to be incorporated into governance frameworks solidify the existing legal social contract towards citizens, rather than alter it. This is relatively different to what some literature, in particular O'Brien's work on social contract theory, claims where New Zealand has gone through a phase of de-regulation in the 1990s that ultimately left local authorities with little legislative tools to encourage adaptation to climate change (O'Brien, Hayward, & Berkes, 2009). Thus, WDC6's statement that the reamendment of the Resource Management Act in 2017 is different to O'Brien's theory because Section 6 (h) of the statute gives greater regulatory authority to councils because natural hazards are

considered to be a national priority. Thereby, this gives councils greater legal authority to make progress on reducing natural hazard risk, which climate change is considered to be a part of under Section 7 of the Resource Management Act. Albeit, this is a relatively recent amendment, but it still shows that some of the interviewees from councils would dispute the idea that there is no encouragement from national mandates to adapt to climate change. Additionally, WDC6 stated that the Local Government Act 2002 had strong provisions for local and regional councils to consider the interests of future generations into their policies and plans, which further runs counter to O'Brien's claim on institutions in New Zealand not being able to cope with climate change (O'Brien, Hayward, & Berkes, 2009). Arguably, the institutional framework, from the national level, enhances the accountability of local and regional councils in the Bay of Plenty to respond to climate change, rather than diminishes it.

However, OPD10 and RLC8's statements on a lack of resourcing and leadership from the national government does support O'Brien's scholarship in the sense that adaptation is left entirely in the hands of local and regional councils, which limits their overall capacity to respond (O'Brien, Hayward, & Berkes, 2009). Additionally, it holds true to Lawrence's studies on New Zealand's institutional barriers to climate change adaptation, in the sense that local and regional governments are left to deal with the problem themselves (Lawrence, et al., 2015). This is relatively problematic, because even though WDC6 stated that there is support from the national level, the support is for local authorities to have a greater legal standing in implementing adaptation measures in their own districts and regions. But there is no support in the form of prudent leadership and specific policy that is consistent across all councils in the country. As a result, if a council is under resourced to deal with climate change, then the implication is that they will still be held accountable by citizens anyway and, more so, under the law without any national assistance. In essence, O'Brien and co-authors are inaccurate in saying that there are no regulatory mechanisms in New Zealand to assist local and regional councils in facilitating adaptation (O'Brien, Hayward, & Berkes, 2009). However, with regards to the legal social contract, the obligations the national institutional framework gives to local and regional councils to protect their citizens from the harms of climate change is not consistent and potentially profuse without central government support. Therefore, scholars argue that if climate change represents a shift in the operating environment of societies, then institutional change is necessary so that frameworks allow decisions to be informed and made differently, and more attention must be paid to the mechanics of such change (Dovers & Hezri, 2010). In the case of the perspectives of the interviewees from councils in the Bay of Plenty, there needs to be more institutional change to make the legal social contract more uniform and consistent across all scales of governance.

Some interviewees believed that climate change did not necessarily alter their own council's views on accountability under the legal social contract. This is because local and regional councils have strong core commitments to intergenerational equity in their planning as well as their policies. It was stated that because of these obligations to intergenerational equity, climate change does not necessarily change the thinking regarding government accountability as it is already built into other core principles. These statements from the interviewees run counter to O'Brien et al. (2009) where it is stated that governments fail to represent citizens of the future. In particular, it is argued by scholars that the recognition of rights and responsibilities of distant people and future generations are critical to addressing climate change, as they have little voice in the social contracts that exist today, because that would extend egalitarian concerns between generations (O'Brien, Hayward, & Berkes, 2009). However, the Bay of Plenty Regional Council's funding and targeted generational rates show that some councils are at least considering future generations in the sense that the purpose of some of their projects is to create and upgrade infrastructure that would benefit people in 30 years' time. Therefore, people who are alive now will pay for these projects out of their rates and so will people in the future that will primarily benefit from them. This is similar to how some scholars have demonstrated that one of the most common ways of integrating climate change into government institutions is to connect it to the existing risk management policy and practice, land use planning, as well as political agendas and development priorities (Fünfgeld, 2010). Some scholars would argue that 30 years is not necessarily long-term enough in planning to fully consider the impacts of climate change, as the impacts are suspected to increase in a non-linear fashion for centuries to come (Moss, et al., 2010). However, the interviewees and policy documents demonstrate that the principle of intergenerational equity still strongly exists, which leaves room for planning timeframes and thresholds of intergenerational values to be extended beyond the current ones in the legal social contract.

The idea of potentially heightening accountability under the current local and regional institutional framework was made apparent when the interviewees stated that climate change has gone through a relatively recent 're-vamping' in their councils. However, it is more likely that the 're-vamping' of climate change in councils solidifies the existing obligations governing authorities have towards intergenerational equity, rather than alter or extend them completely. This is supported by literature when scholars argue that a societal issue such as climate change requires changes to institutional frameworks, but the integration is usually limited to what the current framework deems as 'acceptable' (Dovers & Hezri, 2010). This was made apparent in the findings when WBD9 said that councils are still bureaucracies, "*Whom are not known for being agile in responses in changing the way they do things quickly*". In essence, this means that there may be more policies and plans that are formulated to deal with climate change, but they are likely to be ones that work within the current

parameters of bureaucracies, at least for now. Moreover, things such as other everyday matters in councils still take priority and take time away from planning on climate change, according to WDC7. In essence, the 'everyday' aspect of bureaucracies is a part of a larger societal and cultural legacy where the "*Big picture of climate change*", as described by WDC7, is overlooked. This extends the argument in Adger et al. (2018) where it is stated that a backdrop of historical and cultural legacies creates a social licence, or in effect a social contract, that governments use to create boundaries to govern citizens which produces a social licence of acceptability. In the case of the councils in the Bay of Plenty, cultural and societal pressures of everyday matters for councils to respond to, such as cracks in the pavement, determines the social licence of acceptability in the legal social contract. Consequently, climate change adaptation may be able to sit within these parameters, but the potential to fully integrate it into societal norms is limited due to the intrinsic nature of current institutional frameworks.

O'Brien points that the only way to remedy this is to clearly define the rights and responsibilities of all parties to the legal social contract (O'Brien, Hayward, & Berkes, 2009). In the case of the councils in the Bay of Plenty, intergenerational equity is not clearly defined in their legal social contract and is instead incorporated into long-term budgets that factor in future generation's interests. However, these do not leave too much space for them to properly be considered due to the laborious nature of bureaucracies and other tasks taking priority. It is here where Pelling and Blackburn's declaration of "*Establishing a governing institution that address powerlessness across all scales via inaugurating new conditions in an existing legal social contract world*" has validity (Pelling & Blackburn, 2018). This is because current institutions appear to be incompatible, or at least too slow in the Bay of Plenty, in addressing pressing issues such as climate change adaptation, which could have major implications on government accountability if the impacts occur and councils are unable to adequately respond due to their restrictive institutional frameworks.

### 6.3 The Role of Policy in Facilitating Practiced Social Contract

Scholars have stated that the policy-process is not black and white because major public choices are the outcome of complex rounds of negotiations between interests, values and a competition between resources (Everett, 2003). Thus, adaptation policies are a practical way for government obligations to be measured as they are a reflection of the values, interests and competition between resources and decisions that form the basis of the practiced social contract (Pelling & Blackburn, 2018). The findings chapter showed that councils in the Bay of Plenty Region vary in their policy responses to climate change, which highlighted differing conceptions of accountability that are a reflection of the practiced social contract. Thus, the adaptation policies that the councils enact solidify their obligations towards

citizens, but the degree of this depends on the method or approach that councils decide to frame adaptation with.

Some councils such as Opotiki and the Bay of Plenty Regional Council had relatively comprehensive policies, which displayed how they were planning to respond and adapt to climate change over an extended timeframe of 30-years by upgrading and installing infrastructure. This runs in line with research that states that adaptation is primarily incorporated into policy by climate proofing new or existing infrastructures (Mambo & Vincent, 2017). Additionally, as mentioned in the previous section, scholars would argue that 30 years is not long-term relative to the enduring and foreseeable impacts of climate change (Moss, et al., 2010). However, the difference between this and the findings is that the policies of the Opotiki and Bay of Plenty councils were displaying what infrastructure was going to be built, or upgraded, that would specifically allow for the onset of climate change as well as how much money was going to be contributed towards those developments over a decision-making timeframe of 30 years. Additionally, Hallegatte (2009) states that for decision-making frameworks to be effective they need to take uncertainty into account by acknowledging that infrastructure will need to cope with a larger range of climate conditions than before and that this range should remain uncertain. The long-term plans of the Opotiki and Bay of Plenty councils support this idea because they state that their infrastructural developments are subject to review and change over the course of their next long-term plans as well as the advent of new climate change data.

However, what separates Hallegatte's (2009) proposition and the policies from the Opotiki District Council is that the township is located between two rivers, an ocean and is roughly two to five meters above sea-level. These hazards, according to OPD10, create a strong sense of susceptibility to disasters for the township which the council recognises and therefore prioritises in its planning and policies because climate change will exacerbate them. Thus, the key distinction here is that Hallegatte (2009) would argue that policies may need to account for differing increases in abnormalities and variabilities in climate change models, such as droughts rather than floods, regarding infrastructure because of uncertainty. Whereas, the findings showed the Opotiki District Council is less inclined to do this because the township is located next to hazards that have a historic pattern of flooding and inundating it due to its low geography. Therefore, this leaves a legacy of obligations for the council to protect citizens from those particular hazards, that have been known to cause problems in the past under the practiced social contract, rather than something completely unexpected and different. This is backed up by scholarship on social contract theory that posits hazards can influence the mobilisation of policies by governments to protect their citizens from certain harms because the potential damage from them can create a tipping point for a critical juncture in the social contract (Pelling & Dill, 2010). Additionally, the Opotiki District Council is a local body with a small population, which consequently

implies less rate money to fund robust infrastructure projects that scholars such as Hallegatte (2009), Quay (2010) and Burke et al. (2015) recommend. Roaf et al. (2005) have substantiated this in their research because if an approach was taken that accounts for several climates then the cost of being so flexible increases for current governments. Thus, Roaf et al. (2005) and the findings share a similarity as the council's methods to create policies that protect citizens from known hazards is a result of protruding hazards and financial constraints for a smaller council. Consequently, these policies facilitate the practiced social contract that congeals government obligations to protect citizens by climate proofing infrastructure to known hazards, which may be exacerbated in the future.

Other research shows that a mathematical climate threshold must be met before large scale adaptive action is to be taken, as this would increase certainty with regards to what climate scenario will emerge, and consequently reveal what further policies need to be enacted to control hazards under a precautionary approach (Wilby & Dessai, 2010). The findings support this is as the Whakatane, Western Bay of Plenty and Rotorua District Councils are currently utilising elements of the precautionary approach to guide them in policy-making regarding current and future adaptation responses. For instance, the Whakatane District Council has outlined in its long-term plan that some of its water sources are potentially at risk from saline intrusion due to climate change and has outlined four different options that could be utilised. Although, the crucial bit of detail is that the plan states that the council will still need to further investigate the long-term solutions for these water security measures, therefore it will continue to utilise contemporary water measures. Thus, these key differences in adaptation policy between the councils support Pelling and Blackburn's (2018) argument that the practiced social contract posits 'real-life' balances that manifest themselves in government responsibilities. This is because councils such as Opotiki face several natural hazards that make the township susceptible to disasters, thereby obligating the council to minimise the exposure of citizens to them as soon as possible. Whereas, councils such as Whakatane also have hazards which exacerbate the citizen's risk of being harmed, but the visibility and history of that risk is different to Opotiki. Hence, the 'real-life' balances between the councils of different hazard exposures cause their practiced social contracts to reflect different responsibilities to their citizens in the policies they formulate.

Although, Quay (2010) argues that the problem with the precautionary approach is that once a flexibility threshold is met, it may already be too late, and the damage has been dealt. This was exemplified in the findings when WDC7 stated that the Mayor had the intake pipes moved because salt water was encroaching up the river, which was linked to climate change. Nonetheless, this also supports what Adger et al. (2018) claim that in the negotiation of the social contract on climate change there are trade-offs between objectives such as minimising vulnerability, maximising equity, and

promoting system resilience. In the case of Whakatane, the trade-off is that the council is willing to wait until a threshold is met or further research is conducted, which has the consequence of water security remaining an issue in the meantime. This method is also antithetical to what scholars on disaster risk reduction would recommend because it may overlook the crucial factors that makes Whakatane vulnerable to saline intrusion (Mercer, 2010). For instance, some interviewees from Whakatane stated that the city is generally low-socio economic in make-up, which would cause a reliance on council infrastructure to provide fresh water as they are unable to move away to an area that does not have the same dependency. Hence, this also supports the scholarship of O'Brien et al. (2009) that suggests social contracts typically offer some form of mutual benefit to all parties and impose some mutual obligations or constraints which secures the legitimacy of government bodies. This is because the council's policy on saline water intrusion suggests that they are obliged to provide a consistent fresh water service for their citizens under the practiced social contract, in exchange for the citizen's trust to protect them from harms salt water intrusion that they cannot manage. Thus, a precautionary approach is more viable for the benefit of the Whakatane District Council and its citizens because it does not narrow down to one form of options in case something does go wrong. Hence, people that cannot afford to live without freshwater supplies will have more safeguards. Therefore, the policies that the Whakatane, Rotorua and Western Bay of Plenty councils have on adaptation responses can be interpreted as flexible means to secure the legitimacy of governments now, and more so in the future, under the expectations of a practiced social contract that is constantly fluctuating due to climate change.

The Western Bay of Plenty's Coastal Erosion Responses Policy is an example of how the council is using the precautionary approach to guide adaptation responses. This is because the policy expounds three different approaches the council can take to manage coastlines and states the criteria to evaluate the appropriateness of each approach when a certain climate threshold has been met. In relation to literature from New Zealand, Hayward (2008) elucidates that the community of Waihi, in the Western Bay of Plenty, has been split of the forms of protection, ranging from hard structures to soft measures, that are required to guard them from the harms of coastal erosion. Additionally, Hayward (2008) notes that the current rock seawall is not the long-term solution to coastal hazards at Waihi Beach, so by 2020 the Western Bay of Plenty District Council, under the orders of the Ministry of Conservation, must undertake comprehensive investigations into the best ways to manage the long-term effects of erosion. Henceforth, the Coastal Erosion Responses Policy is part of an initiative to consummate this obligation to the national government, as well as to inform the citizens in the area as it will provide some closure on future proceedings regarding how the council will weigh certain approaches. This is somewhat different to what literature from overseas regarding social contracts posit, as Christoplos

et al. (2016) have shown in their study that infrastructure is usually a clear and visible response that is embedded in a long tradition associating state legitimacy with hazard management. Although, the council has outlined the possibility on the continuation of using infrastructure measures to protect coastlines, amongst other measures such as managed retreat, dune replantation and natural submersion. However, it has also explained in this policy that the council is not under any legal obligation to even *“Protect its own lands or private property from erosion and that each situation will be assessed on its own merits”* (Western Bay of Plenty District Council, 2017). Thus, this is an example of how adaptation policies can facilitate the practiced social contract as the pressures from national and citizenry obligations has resulted in the council creating flexibility mechanisms in its Coastal Erosion Responses Policy to ensure its legitimacy as it will allow for prudent decision-making under uncertainty.

Christoplos et al. (2016) found that risks tend to be amorphous for climate change, which therefore generally causes some climate change policies to be accorded a lower priority. This is somewhat true for the Kawerau and Tauranga City councils as they had relatively fewer comprehensive policies regarding adaptation in the region. Although this research does not have any participants from those councils to consolidate this claim, the policies from Kawerau, at least, show that the council believes the existing capacity of the district’s infrastructure would cope with climate change because weather events in the past have not caused significant flooding. Therefore, the assumption that Kawerau has adequate infrastructure to cope with climate change either means that there are no hazards that pose serious risks in the district, the infrastructure is genuinely adequate to handle future hazards, or the council does not see climate change as a priority. Research on climate change policy supports this as local governments have their own agendas and priorities which need to be accounted where adaptation is placed alongside numerous other policy issues at the table (Brown, Few, & Tompkins, 2007). Nonetheless, the difference between Kawerau’s policies and the other councils, is that the Kawerau is confident that climate change will not be as serious of an issue. Thus, this implicates that if it is a serious issue, the council will most likely be held more accountable by the citizens in the district under the practiced social contract because their policies facilitated an expectation that the infrastructures in the district are capable of protecting them from harm.

## 6.4 The Role of Council Considerations in Facilitating an Imagined Social Contract

Pelling and Blackburn’s (2018) idea that the imagined social contract helps identify the socially acceptable parameters of citizen’s expectations holds true in the case of council considerations on infrastructure. For instance, the findings showed that interviewees, in their opinion, believed citizens



have the expectation of infrastructure protecting them from hazards. As a result, according to the interviewees, the council's primary response to adaptation is to provide adequate infrastructure as it is part of the socially accepted parameters of citizen expectations. However, the problem here is that some interviewees described, in particular WDC7, that this would cause "*A false sense of security for people*" as their expectations under the imagined social contract would solidify the current measures that protect them from natural hazards, which may be ineffective in the future. This supports Cooper and McKenna's (2008) research where they found that people living on the coast expect that developments in coastal infrastructure will continue regardless of hazard risk. However, some councils are starting to consider moving past this point, as OPD10 stated that "*We should be thinking in the long-term where we position our population centres*", and BOP3 said that "*Building higher and higher flood walls will just not be economically viable in the long-run*". Research from overseas supports that this strategy would be effective in the long-term, as the continuation of structural, and even non-structural, measures may be ineffective in the future due to the impacts of climate change such as sea-level rise and flooding (O'Riordan, Gomes, & Schmidt, 2014). In essence, this signifies that some councils are at least discussing the possibility of reorienting their management strategies regarding protection mechanisms, so that citizen's expectations of governments under the imagined social contract do not create a false sense of security, which may be unacceptable in future circumstances.

Howbeit, Kousky (2014) also argues that plans for relocation can often be contentious as there will likely be a conflict between the property rights of homeowners and public ownership of various environmental ecosystems. This is relatively analogous to what the interviewees stated with regards to citizen's expectations of managed retreat being facilitated by councils and how this is expected to cause problems. Furthermore, this supports Mustelin's (2010) research where it is suggested that notions of resettlement disguised as climate change adaptation would cause confrontation between citizens and governments due to issues of property rights. However, the key difference between this literature and the findings, is that funding was going to be the core of the contention because local, regional and central governments do not have adequate capital to invest in future scenarios of managed retreat, according to BOP4. Therefore, the issue, according to the interviewees is going to be a question of who pays which will cause debates around property rights and government responsibilities, rather than absolute disagreement with the idea of coastal retreat or relocation that Kousky (2014) indicates. Albeit, other international literature reinforces the findings in that funding varies widely and typically is derived from local, regional, national, and international sources, but is generally inadequate (Dannenbergh, Frumkin, Hess, & Ebi, 2019). Additionally, Boston and Lawrence's (2017) research on adaptation in New Zealand support this as there are currently no viable funding mechanisms in place to adapt to climate change from national to local scale governance. Furthermore,

it is the notion that councils have a principle of 'nobody gets left behind' with regards to buying damaged properties which is ingrained into the mindset of citizens that further solidifies what citizens may expect from governments in the future under the imagined social contract. This extends the assumption of Adger et al. (2018) that populations directly affected by relocation and managed retreat in the future will have much to say on matters regarding expectations of governments under the social contract. This is because the social order of acceptance, that has been conveyed under the interviewee's perceptions of what citizens expect from councils, via the imagined social contract, ultimately extend government accountability in the Bay of Plenty to pay for relocation and managed retreat initiatives.

On top of this, research from overseas has shown that citizens impacted by managed retreat believed that paying for adaptation responses such as managed retreat is a responsibility of the state (Rulleau & Rey-Valette, 2017). Although, the findings are more qualitative based in this research from the perspective of policy-makers, they still show that councils are aware of the expectations citizens will have regarding the funding of managed retreat that are comparable to the claims made in the above overseas research. Therefore, this further highlights that governments may have the obligation to fund managed retreat in the eyes of citizens because it is their expectation under the imagined social contract. Interestingly, social contract research, in particular Adger et al. (2018), have found that people are more willing to take personal responsibility to adapt to climate change depending on the trust towards their government in Ireland and England, as well as their legacies of responding to disasters. Nevertheless, the critical difference to Adger's literature is that, as one interviewee stated, *"Residents are saying the council let them build near the beach, so the council has to pay"* – BOP4. Thus, the imagined social contracts between the Bay of Plenty and some factions of the United Kingdom may vary in the sense of personal responsibility, as councils in the Bay of Plenty are seen as the ones that are accountable for allowing certain developments. However, Adger et al. (2018) also state that the governments themselves are constrained in their ability to steer action within their jurisdictions by the culture and politics of the governed. Therefore, some scholars argue that future directives regarding managed retreat will need to be a citizen led endeavour as their willingness to contribute to measures such as relocation will depend on the confidence of and by the fact that owners do feel particularly concerned (Rulleau & Rey-Valette, 2017). Hence, formulating these citizen expectations is particularly relevant for councils in the Bay of Plenty that are considering funding into their adaptation responses because citizens may not necessarily feel obligated to take personal responsibility and instead expect governments to take action under the imagined social contract.

The obligations the imagined social contract creates are closely related to Rousseau's assertion that the legitimacy of an authority is defined by those over who it rules (Pelling & Blackburn, 2018). The

findings support this as some interviewees stated that council considerations on public opinion regarding adaptation is causing the Bay of Plenty Regional Council to reassess its own position of governance in the region by being a facilitator of decision-making by allowing for more citizen involvement regarding adaptation responses. This is similar to what scholarship from Australia states about adaptation where governing bodies must essentially deal with questions about what a community values, rather than forcing solutions which may cause problems with people (Mustelin, 2011). For instance, BOP1's idea of making discussion topics such as fish and how climate change may impact their breeding, movement or life-cycle patterns is one way of identifying what people in a community, that that may be impacted by climate change, may value. Additionally, this is something that Mustelin (2010) supports, as in her scholarship understanding what these values are may help pave the way for future adaptation initiatives as citizens and councils will have a better understanding of what each other's motivations are. Furthermore, literature on participatory processes confirms that an integration of top-down and bottom-up initiatives in decision-making, regarding a community's own interests, will likely increase the overall trust between all actors that are concerned, but not always as they can create the illusion of inclusion (Few, Brown, & Tompkins, 2007). However, as BOP1 has only been in this consulting position for a small amount of time, it was difficult for the interviewee to establish how successful these programs are thus far as it is too early in the process. Nonetheless, scholars argue that consultation programmes could also lessen the psychological distancing people have with the perception of climate change and how it could impact their lives in the future (Evans, Milfont, & Lawrence, 2014). The findings support this as BOP1 stated that procedure embedded into these consultation programmes will allow for citizens to gain a better understanding of how climate change will impact them, which will therefore lessen psychological distancing and enable citizens to formulate realistic expectations from governments under the imagined social contract.

Some research shows that uncertainty can exacerbate the psychological distancing of climate change because it lessens the overall reality of it in the sense that it may not occur in the current lifetimes of people (Spence, Poortinga, & Pidgeon, 2012). The findings can support this as the uncertainty surrounding the impacts of climate change is something the interviewees, especially WBD9, expressed that councils are struggling to grapple with because it can halt progress in adaptation responses. Although, WDC6 explained that transparency with the public, in terms of identifying at what points to respond to climate change, could help in facilitating the process of educative consultation as well as certain thresholds that both people and councils are happy with progressing. Pelling and Blackburn (2018) support this as they suggest that the relative closeness of different stakeholder's perspectives could indicate the degree to which adaptation policy reflects, justifies or challenges dominant public expectations, bringing in climate change research into broader debates on the social acceptability of

government in practice. In this case, the imagined social contract between citizens and governments in the Bay of Plenty has the potential to be rejuvenated because people and councils have the opportunity to agree to a parameter of acceptability in facilitating adaptation responses, if uncertainty is handled transparently.

WDC7 made the point that uncertainty is not a factor that will go away and using the framework of agreed acceptability to judge thresholds does not solve the problem of the underlying root causes of hazard risk, which is the vulnerability of people that are prone to hazards. Thus, this supports the idea in O'Brien et al. (2009) where it is stated that a revised social contract needs to go beyond counting in environmental factors and needs to take into account the plethora of interventions that targets the most vulnerable groups in society where they provide accountability mechanisms to protect and empower these vulnerable groups. WDC5's point, on how low socioeconomic households would consider the discussion of the uncertainties and long-term impacts of climate change a privilege due their focus on 'every day survival', complements this idea of a social contract that goes beyond environmental parameters. Arguably, it is also different to what Spence et al (2012) have stated with regard to psychological distancing obstructing the reality of climate change as WDC5 suggests citizens may indeed want to discuss issues such as uncertainty. However, in the perspective of some of the interviewees, what prevents some citizens from doing this is their everyday struggle, rather than a neglect of climate change being an issue. Thus, the implication on the imagined social contract, in this case, is that some citizens are too preoccupied with their day-to-day matters to have any expectations on governments to adapt to climate change. In essence, these points show an interesting insight from the interviewees, whereby they understand that citizens are vulnerable to climate change because of their societal condition. However, the interviewees also indicate that governments will continue to measure the risks of climate change based on the potential impacts as it is their obligation to protect citizens from harm regardless. This supports Ignatieff's (2005) idea where he proposed that under the social contract the people in New Orleans who were impacted by Hurricane Katrina in 2005 at the very least deserved levee's that would hold and protect them from harm. Nevertheless, some council's considerations on uncertainty facilitate an imagined social contract that complicates the expectations of citizens, in the perspective of the interviewees, as their responses to climate change are impact and time based which enhances infrastructure to protect citizens from harm. However, this also extends Ignatieff's (2005) idea on government obligations as some interviewees state that citizens, particularly in low socioeconomic areas, may not necessarily appreciate these things as their own societal condition prevents them from thinking past their next meal.

## 6.5 Does Climate Change Adaptation Alter Traditional Conceptions of the Social Contract?

Thomas Hobbes stated that citizens within a political boundary have the expectation that the state will provide social order and security to prevent discord in exchange for the citizen's right to govern themselves (Gauthier, 1969). Additionally, O'Brien et al. (2009) have stated that the potential dangers of climate change has led to urgent calls for action, including the development of new types of social and political provisions that might better augment human well-being and enable societies to grapple more effectively with complex problems. Ultimately, some of the obligations to adapt to climate change, in the perspective of the interviewees from the councils in the Bay of Plenty, display a shift in government accountability. This is because the findings show that some councils are clearly, or at least in the process of, implementing policies regarding climate change that cater towards both current and future generations and are willing to spend extra money on infrastructure to protect citizens. By doing this some councils are acknowledging that they are accountable to protecting citizens now and in the future from harms. However, O'Brien et al. (2009) would argue that this is a simplistic way of looking at the matter as social contracts should go beyond being "*tweaked*" to address the fundamental causes of injustice, environmental degradation and inequality. Pelling and Blackburn (2018) also state that the classical contractarian theories do not include other asymmetrical power relations between governing agencies, the policies that are produced and the changing relationship between the citizens and the state. Thus, three analytical lenses of different social contracts, created by Pelling and Blackburn (2018), have been employed in this research to understand how climate change adaptation may alter traditional conceptions of the social contract.

The previous sections discussed how institutional frameworks, policies and council considerations of climate change adaptation facilitate the legal, practiced and imagined social contracts in the Bay of Plenty region. However, each of these social contracts posited their own obligations and expectations of councils in the region. For instance, the legal social contract created obligations for councils under national, as well as local and regional, institutional frameworks to adapt to climate change, which creates a certain set of expectations for citizens that are visible under law. Thus, some of the interviewees, in particular BOP3 and WDC5, disagreed that climate change has altered their council's perception on accountability, at least within the legal social contract. In contrast, the imagined social contract creates obligations for councils that are more implicit and predisposed to debate as they are the result of subjective visions of a just social order, such as the interviewee's perspectives on how citizens would expect councils to buy out their properties in light of rising sea levels in the future. In

essence, this supports Pelling and Blackburn's (2018) hypothesis that applying these social contract lenses would reveal different obligations from governments.

Additionally, Pelling and Blackburn (2018) were correct in saying that each of these social contracts can overlap, interact and influence one another, but not always. This was made apparent when the legal social contract from the New Zealand central government made it a local and regional council responsibility to handle climate change adaptation under various statutes and frameworks. Additionally, local and regional councils in the Bay of Plenty have intergenerational equity principles embedded into their own institutional frameworks which makes the incorporation of climate change mainstreamed into their legal social contracts, but this is limited by their bureaucratic nature. Thus, the practiced social contract is influenced by the legal social contract in the sense that councils are usually left to deal with climate change on their own without national assistance. The Opotiki District Council's long-term plan supports this as they are obligated to adapt to climate change under the national legislation, but their policies are limited in scope and can only contain parameters that are relevant to current hazards rather than being open to variability due to financial constraints. Therefore, council policies are a product of a competition of values, interests and necessities in their districts that the practiced social contract exhibits, but these work within institutional realms that the legal contract generates. Hence, this supports Pelling and Blackburn (2018) who argue that the closeness between the practiced social contract and legal social contract is a product of the strength and culture of enforcement as the practiced social contract is partially the product of the enforcements made by institutional constraints. Therefore, if institutional frameworks were more flexible in local and regional councils, as well being more consistent in the national government tier, this would positively influence the practiced social contract as councils would have more scope to produce effective adaptation responses.

Pelling and Blackburn (2018) also argue that the imagined social contract can impact the practiced social contract for councils as it determines the boundaries of social acceptance. This was found to be true in the findings as, for instance, BOP1 and BOP3 explained that the regional council is looking to change its role in climate change governance and allow for more citizen involvement. As a result, the council created two new positions that are specifically tasked with identifying management strategies and policies that will make this shift in governance a reality. The underlying reason for this is because under the imagined social contract the interviewees believed that climate change is going to cause harms towards citizens in the form of sea-level rise, which will require policies such as managed retreat. Thus, the logic of the council is to let citizens in the Bay of Plenty decide the expectations of local and regional councils themselves via the imagined social contract by developing programmes in the future to have participative decision-making from citizens that may be impacted. However, it must

be noted that not every council in the region views adapting to climate change under the same light, as made apparent by Kawerau District Council's 2018-2028 Long-Term Plan. Therefore, the social contracts alter in every district because they have different geographies, populations, finances, hazards and priorities.

Pelling and Blackburn (2018) also argue that these social contracts can have complex relationships with one another. For instance, the imagined social contract may not impact the practiced social contract for some councils in the Bay of Plenty as citizens, according to some interviewees, may not have any expectations of local and regional councils to adapt to climate change due to their day-to-day struggles preventing them to look at the bigger picture. However, councils are still obligated to adapt to climate change under the legal social contract that is perpetuated by the New Zealand central government's institutional framework, which also underequips councils. Furthermore, their own institutional frameworks prohibit the sufficient insinuation of climate change into their agendas. Thus, the adaptation policies that come as a result of the practiced contract are hazard and impacts based that do not necessarily cater to citizen's immediate needs or concerns. Nonetheless, the lenses that have been applied in this research illustrate that through certain processes, such as climate change adaptation, traditional conceptions of contractarian theory are challenged as Pelling and Blackburn (2018) have stated. This is because the dynamics of accountability and the expectations that each social contract has for council obligations towards their citizens fluctuates.

# CHAPTER 7 CONCLUSION

This chapter will summarise the key findings of the case study in the Bay of Plenty that the research question and objectives sought to gain insights on. It will also explain how using the different social contract lenses allowed for an enhanced understanding of what government obligations are and how they vary amid each lens. Lastly, this section will present the limitations of the study itself and recommend further research endeavours.

## 7.1. Key findings

Section 1.4 introduced the main aim of this study which was to gain insights into how climate change adaptation is facilitated by the institutions, policies and considerations of councils in the Bay of Plenty to gain a better understanding of how social contracts are influenced by these factors. To achieve this, the following questions need to be answered:

- What role do institutions play in facilitating adaptation responses and how is the social contract influenced by the dynamics in this realm?
- What role does policy play in facilitating adaptation responses and how is the social contract influenced by the dynamics in this realm?
- What role do council considerations play in facilitating adaptation responses and how is the social contract influenced by the dynamics in this realm?
- Does adapting to climate change alter the traditional conceptions of the social contract?

To answer these questions a framework was adopted from Pelling and Blackburn's (2018) recommendation on social contract research. This is because it is argued that social contracts are defined as multiple and constructed and the mapping of these could reveal different levels of government accountability. Therefore, the framework proposed by Pelling and Blackburn (2018) was applied to understand and gain insights on the different realms of government expectations, responsibilities and entitlements. In essence, the framework allowed for the observation of the different ways climate change adaptation altered the social contract in the Bay of Plenty.

Regarding the first question, it was found that institutions play a significant role in facilitating adaptation responses because they create the legal framework for insinuating adaptation into government agendas. Many interviewees found that institutional frameworks, from both national to local scales, allows for climate change to be smoothly incorporated into their agendas. This is because national legislation has recently made natural hazards a matter of national significance and the Local Government Act has clauses that inscribes the consideration of future generations. Additionally, some



interviewees found the long-term planning of climate change is remedied by the fact that local governments have strong intergenerational equity principles that ingrain their overall council objectives towards a long-term perspective. However, by using the lens of the legal social contract, it was found that the obligations from national legislation gave councils ultimate authority on deciding on how to best approach adaptation, thereby giving them no assistance from higher tiers of government. Some interviewees expressed that these obligations from higher tiers of government create bigger expectations for their councils to adequately respond to climate change. Consequently, this would lead them to be held accountable to their citizens if something went wrong and they were not able to respond due to a lack of resourcing. Moreover, the legal social contract lens was able to identify that although councils have strong intergenerational equity principles, they are still constrained by their own laborious and bureaucratic nature to apply these sufficiently. Thus, whilst institutions have the capacity to facilitate adaptation responses, the legal social contract is limited in its application to protect citizens from harm because institutions are intrinsically incompatible with the obligations that adapting to climate change implicates.

Regarding the second question, it was found that council policies play a major role in facilitating adaptation responses because they define the extent of commitment that councils are willing to set forth to protect their citizens. In particular, it was found that most of the policies were impacts based to climate proof infrastructures. Moreover, the methods and justifications used to espouse these policies to adapt to climate change varied considerably between the councils. For instance, the Opotiki District Council had very specific timeline-based policies to create certain infrastructures in their 2018-2028 Long-Term Plan that demarcated their obligations to adapt to climate change over a period of 30 years. In stark contrast, the Kawerau District Council had the assumption, in their 2018-2028 Long-Term Plan, that their infrastructure can deal with the foreseeable impacts of climate change. However, by using the lens of the practiced social contract, it was found that council's such as Opotiki have several clearly visible natural hazards that make the township in their district prone to hazards. As a result, the council has the obligation to adapt to these because they have been known to cause flooding and inundation in the past. Therefore, their policies facilitate relatively extensive adaptation responses because of the cultural and historic legacies of the hazards in their district which prioritise such procedures, as that is the expectation that is put on the council. The practiced social contract lens was able to identify how policies are the product of the priorities and capabilities of councils to adapt to climate change, which can result in flexible approaches to be taken instead to allow for prudent decision-making regarding uncertainty. Thus, whilst policies can facilitate adaptation responses, the practiced social contract can be limited in its application to protect citizens from harm

because the policies reflect the priorities and capabilities of councils, which differ and are constrained to their own methods on how to enhance safeties for their citizens.

Regarding the third question, it was found that council considerations play a large part in facilitating adaptation responses because they highlight the underlying reasons for action and inaction on certain adaptation initiatives. The interviewees expressed that there is a multiplicity of different considerations that their councils are factoring into policy and decision-making on climate change adaptation, which highlight how they perceive citizen expectations and entitlements. For instance, funding was a major consideration for councils because interviewees anticipate that climate change adaptation may require large scale managed retreat from coastlines and other hazardous areas. Additionally, interviewees from the Bay of Plenty Regional Council expressed that their council is looking to change its role in governance by considering participatory processes to guide the future direction of adaptation initiatives. However, by using the imagined social contract lens, it was found that some interviewees believed that the council will be held accountable to pay for adaptation measures such as managed retreat because they are seen as the ultimate consent authority by citizens. Therefore, the imagined social contract enabled for in-depth insights into how interviewees from councils perceive what citizens in their districts in the Bay of Plenty may expect from them when formulating adaptation responses. In essence, the imagined social contract gave an idea of what councils may see as the accepted social parameters of government expectations and what rights they perceive citizens are entitled to.

With regard the fourth question, it was found that climate change alters social contracts in the sense that councils in the Bay of Plenty are in the process of implementing policies that cater towards both current and future generations. However, by using the lenses that Pelling and Blackburn (2018) have prescribed, it was found that social contracts differ and interact between scales and scopes of government responsibilities in the Bay of Plenty. These responsibilities are defined by the social contracts, but the manner in which they are filtered throughout the legal, practiced and imagined social contracts differ in the region. Therefore, these differences in the findings help highlight the ideal of what is expected from governments versus what they truly provide. For instance, under the imagined social contract some interviewees believed that some citizens may not appreciate or recognise that governments are providing and upgrading infrastructure to protect them from the harms of climate change as their societal condition takes precedence. However, under the legal social contract councils are still obligated to adapt to climate change nonetheless. Therefore, councils create policies that are hazard based by enhancing infrastructures that protect citizens from hazard exposure, which also increases their obligations to adapt to climate change under the practiced social contract. But, these do not address their current socioeconomic vulnerabilities that make them prone

to harm in the first place. Henceforth, using the different social contracts as lenses to identify these differences in expectations versus reality presents a unique understanding of societal issues and offers an opportunity to amend these.

## 7.2 Future Research

This research has tested Pelling and Blackburn's premise to frame different social contracts and test them to provide different interpretations of accountability via the institutional frameworks, policies and considerations of climate change adaptation. However, whilst this premise was able to identify the different social contracts and how obligations to adaptation alters between these, this study was done at one point in time. The issue with this is that social contracts are ever changing, and a case study has inherent temporal limits placed on it. Furthermore, as was stated by the interviewees, climate change policy is going through an update in some councils, which may ultimately cause relatively notable differences between this study and a future one in the Bay of Plenty. Additionally, the researcher was also not able to get in contact with staff from the Tauranga City and Kawerau District councils, which limited the potential information for their respective considerations on climate change adaptation. Moreover, this study focused on the perspectives of staff from the councils in the Bay of Plenty region, rather than incorporating the views from citizens.

Nonetheless, if a future study was to be conducted, it should ideally observe the changes in the social contracts by using the same framework from Pelling and Blackburn (2018) over an extended period of time as this would evidently reveal the push and pull factors of what precisely causes a change in them. Additionally, future research should incorporate the views from people in communities that may be impacted by climate change in the future and observe what their views and expectations are of governments. This would help build the other half of the picture on social contracts and potentially bring forth valuable information for governments on how best to work with their citizens so that trust is maintained between both actors in progressing with adaptation. Future research could either continue using qualitative methods to display these findings or use quantitative methods by handing out detailed questionnaires that test what expectations people have of governments to produce more convincing and accurate data.

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