



# Te kimi kāinga rua ā-hapori me te tahua urutau: Ngā take me ngā kōwhiringa

Community-led retreat and adaptation  
funding: Issues and options



Ministry for the  
**Environment**  
Manatū Mō Te Taiao



**Te Kāwanatanga o Aotearoa**  
New Zealand Government

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# Executive summary

This paper was written by the Ministry for the Environment to assist the proposed inquiry into community-led retreat and adaptation funding. Recommendations arising from the inquiry would support the development of the proposed Climate Change Adaptation Bill.

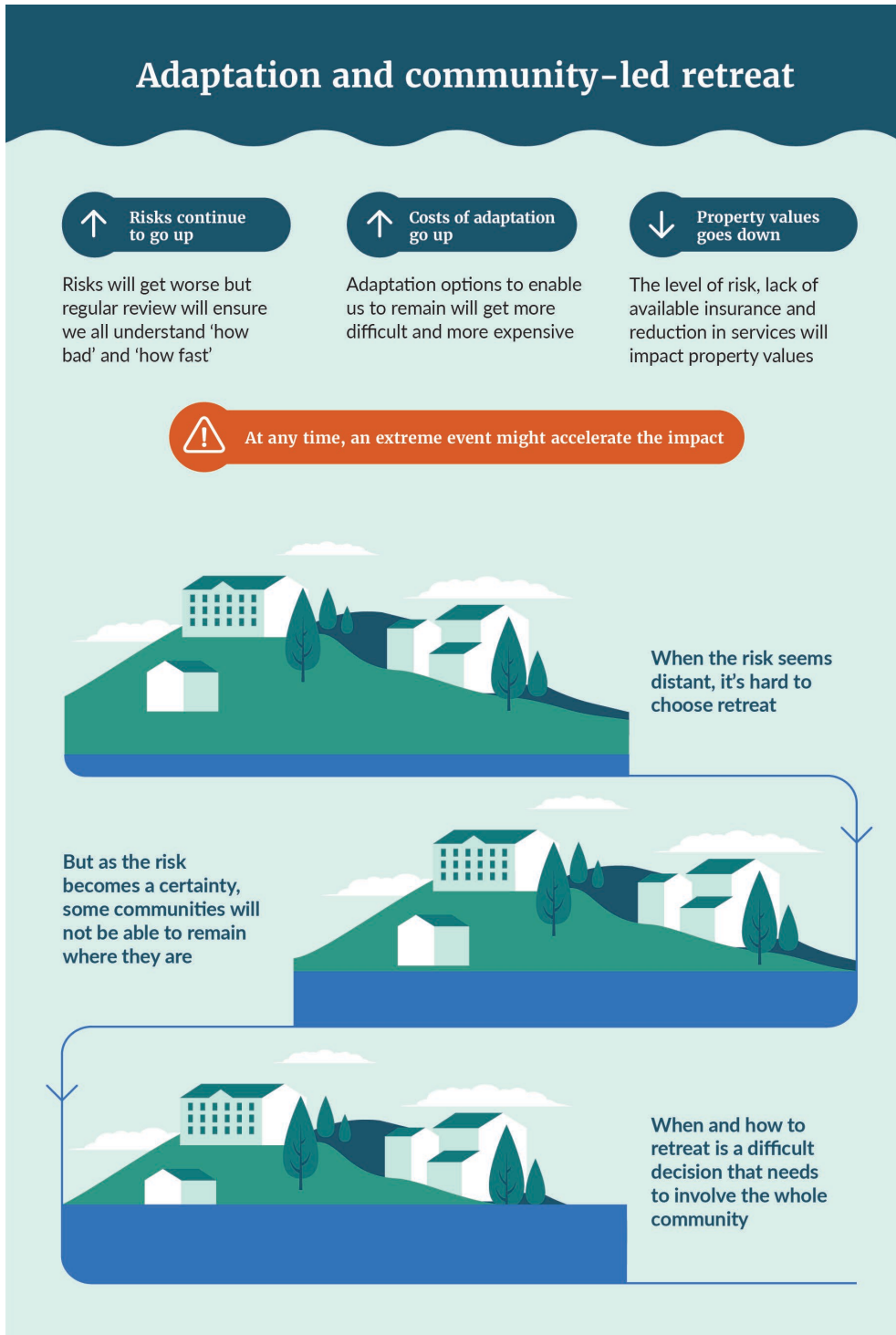
- Cyclone Gabrielle was one of the worst storms to strike Aotearoa New Zealand in living history.<sup>1</sup> Roads and homes were badly flooded and key state highways were cut off by landslides. Some communities were left without transport, power and a way to communicate. More than 10,000 people were displaced and 11 people died.
- These communities now face difficult choices about whether and how to rebuild. Councils will offer to buy homes in places where future risks cannot be managed. For those who choose to accept this offer, the retreat process will start.
- Climate change is increasing the risk of extreme weather events like Cyclone Gabrielle. Eventually, the risk in some places will become so great that it will no longer be safe to live there or affordable to rebuild after a disaster. In other places, land will disappear as it is reclaimed by the sea. The chance of a disaster in some places will increase over time from unlikely, to probable, to highly likely and perhaps eventually to certain.
- Some of the places at risk are large and highly populated, and the challenges and costs of adapting will be significant. Communities exposed to the highest risks, such as those near major rivers and the coast, will face particular challenges. Rural communities (where large amounts of land are used for business), and low-income communities, will be particularly vulnerable.
- Māori will be disproportionately impacted. Culturally significant sites will be threatened, as will the industries in which many Māori are employed and have assets. Māori have high levels of hardship already, and many hapori Māori live in areas at risk from flooding and sea-level rise.
- Whether, when and how to retreat from at-risk places are issues faced by communities in many countries. A typical approach allows communities to stay in place until a disaster forces them to leave. But this reactive approach is costly.
- The Government has taken steps to shift to proactive adaptation through the first national adaptation plan and resource management reforms. We now need to consider whether Aotearoa should develop an enduring system to enable retreat before a disaster.
- This paper seeks your views on the design of a comprehensive system for community-led retreat, including how we can maximise the choices people have once a decision has been made to retreat.
- At the same time, this paper seeks your views on how we can take up opportunities to improve our approach to risk assessment and local adaptation planning for all adaptation actions including retreat. Effective risk assessment and planning will be vital to support our future adaptation system, including making decisions about when to retreat and when to adapt in other ways.

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<sup>1</sup> MetService. 2023. *Tropical Cyclone Gabrielle*. Retrieved 26 July 2023.

- This paper also seeks your views on how we can meet the costs of the actions we take to adapt. To lower costs for some, we will potentially increase costs for others. The costs can be met by those affected or third parties. Costs met by central government and councils are essentially costs paid by tax and ratepayers. Whenever central government and councils help to fund adaptation, we need to make sure we are making good adaptation decisions that address risks and minimise impacts and costs.
- Finally, this paper seeks your views on how we can remove barriers to Māori participation in adaptation and ensure that Māori rights and interests are upheld under our future adaptation system.

**Figure 1: Adaptation and community-led retreat**



**Table 1: Chapter-by-chapter summary**

| Chapter                              | Summary   |
|--------------------------------------|---|
| 1. <b>Context</b>                    | <ul style="list-style-type: none"> <li>We have been taking action to adapt, for example, through the first national adaptation plan, national climate change risk assessment and resource management reforms.</li> <li>Two significant gaps remain relating to community-led retreat and adaptation funding.</li> </ul>   |
| 2. <b>The need for change</b>        | <ul style="list-style-type: none"> <li>This paper considers four challenges for adaptation: <ul style="list-style-type: none"> <li>barriers to Māori participation and upholding Māori rights and interests</li> <li>variable quality of risk assessments and local adaptation planning</li> <li>no enduring and comprehensive system for community-led retreat</li> <li>gaps in our funding approach.</li> </ul> </li> </ul>   |
| 3. <b>Te Tiriti-based adaptation</b> | <ul style="list-style-type: none"> <li>Iwi, hapū and Māori are disproportionately affected by climate change.</li> <li>Te ao Māori and local mātauranga should be central to the development of risk assessments and adaptation planning at place.</li> <li>The Crown must proactively work with iwi, hapū and Māori to uphold Māori rights and interests, including through protecting Māori land and upholding Treaty settlements.</li> <li>Space should be created for iwi, hapū and Māori to have rangatiratanga over their whenua and taonga katoa in a Tiriti-based adaptation system.</li> </ul>   |
| 4. <b>Risk assessment</b>            | <ul style="list-style-type: none"> <li>Risk assessment is the first step in adapting and is essential for understanding the risks we face.</li> <li>National direction under resource management legislation could be used to provide direction to councils on risk assessments, so they are more consistent and comprehensive.</li> </ul>  |
| 5. <b>Local adaptation planning</b>  | <ul style="list-style-type: none"> <li>Once a region has identified its risks, it will need to focus on areas that are high priority for adaptation.</li> <li>Direction from central government could strengthen local adaptation planning.</li> <li>Local adaptation planning could include how actions will change if there is a disaster.</li> <li>We need a process for deciding between retreat and other adaptation options.</li> </ul>   |
| 6. <b>Community-led retreat</b>      | <ul style="list-style-type: none"> <li>New powers are needed to enable community-led retreat, including for the ownership, control, use, acquisition and retirement of land.</li> <li>The exact powers needed will depend on the system we design, including which parts are voluntary and which are not, and how we maximise choice.</li> </ul>  |
| 7. <b>Funding and financing</b>      | <ul style="list-style-type: none"> <li>We need to consider how adaptation costs should be shared by individuals, households, businesses, councils and central government.</li> <li>Where central government has a role, it may be helpful to clarify its funding priorities.</li> <li>Possible initial priorities include: property-level retreat funding; home resilience funding; flood protection; and a dedicated fund for iwi, hapū and Māori.</li> <li>Options for funding range from the current state (where the central government spends on a case-by-case basis) to a long-term fund covering a full range of adaptation costs.</li> </ul> |
| 8. <b>Adapting through recovery</b>  | <ul style="list-style-type: none"> <li>Pre-disaster adaptation is both similar and different to post-disaster adaptation.</li> <li>The enduring adaptation system could potentially be used to guide swift decision-making on adaptation in the immediate aftermath of a disaster.</li> <li>Some flexibility may still be needed to reflect the particular needs of disaster recovery.</li> </ul>   |



# Chapter 1 – Context

## Chapter overview

This chapter focuses on:

- how this issues and options paper will support the proposed inquiry into community-led retreat and adaptation
- key concepts such as adaptation and community-led retreat.

## Key points

- The Government has taken steps to shift to proactive adaptation through the first national adaptation plan and resource management reforms.
- Two significant gaps remain relating to community-led retreat and adaptation funding for retreat and other adaptation actions (such as preventing, accommodating and avoiding).
- The proposed inquiry into community-led retreat and adaptation funding would ensure we can all have a say in how we prepare to adapt.
- This issues and options paper has been written to support the proposed inquiry, drawing on the report of the Expert Working Group on Managed Retreat.

## Introduction

1. The Government has taken steps to adapt to climate change through the first national adaptation plan, the national climate change risk assessment and resource management reforms (see appendix A).
2. However, there are still two significant challenges to address:
  - no enduring and comprehensive system for community-led retreat
  - gaps in our funding approach.
3. Given the significance of these challenges, the Minister for the Environment has asked the Environment Committee to initiate an inquiry into community-led retreat and adaptation funding. Recommendations arising from the inquiry would support the development of the proposed Climate Change Adaptation Bill.

## Climate Change Adaptation Bill

The Randerson Report<sup>2</sup> that led to the resource management reforms (see below), proposed new legislation on retreat and adaptation funding. The first national adaptation plan includes an action to pass legislation for retreat in the period 2022–2024.

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<sup>2</sup> Resource Management Review Panel. 2020. *New directions for resource management in New Zealand*. Wellington: Resource Management Review Panel.

4. The proposed inquiry into community-led retreat and adaptation funding would sit alongside the Government Inquiry into the Response to the North Island Severe Weather Events.<sup>3</sup> There is also an opportunity to build on the Māori Affairs Committee briefing on Māori climate adaptation (see appendix B).
5. This paper was written by the Ministry for the Environment to provide the proposed inquiry with information about relevant issues and options, drawing on the report of the Expert Working Group on Managed Retreat.

### Report of the Expert Working Group on Managed Retreat

In September 2022, the Secretary for the Environment established the Expert Working Group on Managed Retreat. The overall objective of the group was to assist officials to develop detailed design options for a robust, equitable and enduring retreat system, and funding and financing adaptation as one part of the development of detailed policy design for the Climate Change Adaptation Bill. The group (chaired by Sir Terrence Arnold KC) had 13 members with expertise in a range of relevant fields, including economics, planning, public policy, property law and te ao Māori.

*Report of the Expert Working Group on Managed Retreat: A Proposed System for Te Hekenga Rauora/Planned Relocation* was published in August 2023.

## Connection to other government work

6. The Government declared a climate change emergency on 2 December 2020. The first national adaptation plan, the national climate change risk assessment (which informs that plan) and the emissions reduction plan, drive the Government's work to mitigate and adapt to the effects of climate change.
7. The national adaptation plan is issued at least every six years and the first plan was published in 2022. It brings together the Government's efforts to assess and address risk and monitor progress.
8. Work is progressing separately on the recovery from Cyclone Gabrielle and the Auckland floods. This work considers adaptation actions and retreat in severely affected locations. Lessons learned from this work will help us develop legislative proposals to include in the Climate Change Adaptation Bill.
9. The Government is also reforming the resource management system. This will transform the way we manage the environment and help us better prepare for climate change.
10. Appendix A provides more information about the Government's work on adaptation, mitigation and resource management reform.
11. The Government is currently preparing new national direction under existing resource management legislation on natural hazard management, including on risk assessment and planning measures. This work is discussed further in chapters 4 and 5. Public submissions to the proposed inquiry on community-led retreat and adaptation funding would inform this work.

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<sup>3</sup> New Zealand Gazette Te Kāhiti o Aotearoa. 2023. *Establishment of the Government Inquiry into the North Island Severe Weather Events*. Retrieved 25 July 2023.

## Resource management reform

The Resource Management Act 1991 is due to be replaced by the Natural and Built Environment Bill and Spatial Planning Bill. Although the Natural and Built Environment Bill and Spatial Planning Bill are referred to as bills throughout this paper, they will become Acts of Parliament if they are passed at their third readings and receive royal assent. This will likely happen in August 2023.

Resource management reform follows on from a comprehensive review of Aotearoa New Zealand's resource management system. Recommendations for reform were set out in the independent report, *New directions for resource management in New Zealand* (known as the Randerson Report).

## Purpose and scope of this paper

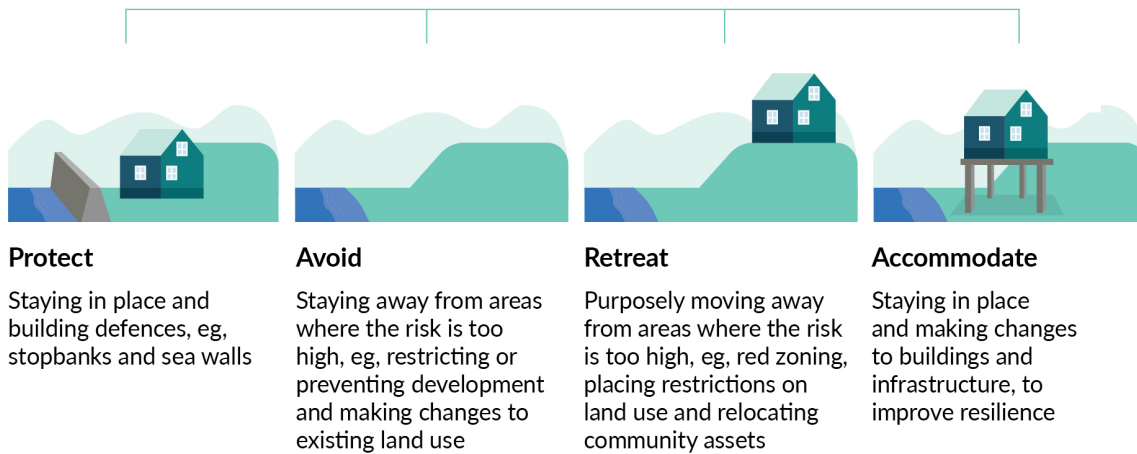
12. This paper is intended to support the proposed inquiry into community-led retreat and adaptation by:
  - setting out issues and options across the adaptation process (including community-led retreat and adaptation funding for retreat and other adaptation actions)
  - asking questions to guide public submissions to the proposed inquiry.
13. As noted above, this paper draws on the report of the Expert Working Group on Managed Retreat. The group's report provides detailed analysis of the current adaptation system and some of the options presented in this paper.
14. This paper does not consider:
  - the emergency response system, although chapter 8 considers the connection between adapting before and after a disaster
  - issues and options for people and communities recently affected by Cyclone Gabrielle and the Auckland floods because, as outlined above, this is the subject of separate work
  - where we should build in the future (enabling development in low-risk areas will become increasingly important as those affected by a decision to retreat relocate, but this is not the proposed focus of the inquiry or this paper).

## Key concepts

### Adaptation

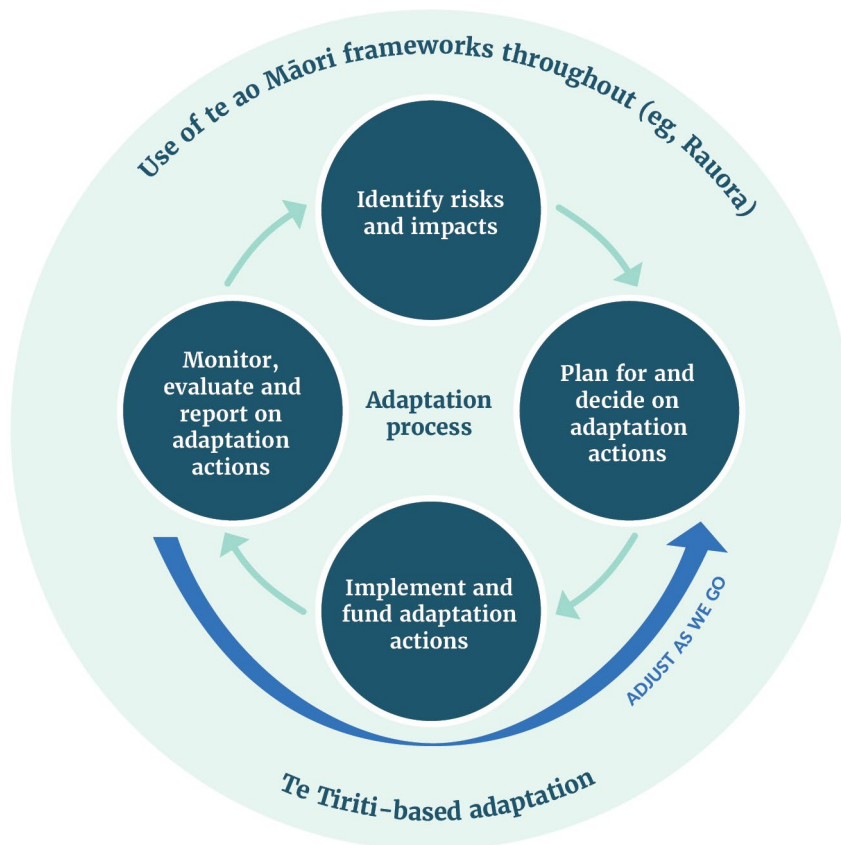
15. For the purposes of this paper, adaptation means taking action to build resilience to the current effects – and predicted impacts – of the increasing risks posed by natural hazards, now and in the future. Natural hazards in New Zealand include events like floods (whether caused by rain or sea-level rise), landslips, coastal erosion, tsunamis, heatwaves, droughts, earthquakes and volcanoes.
16. Internationally, the PARA framework (protect, avoid, retreat, accommodate) is used to explain the types of actions people might take to adapt:

**Figure 2: PARA framework**



17. The diagram below demonstrates the adaptation process. The paper is structured to mirror this process.

**Figure 3: The adaptation process**



### Community-led retreat

18. This paper considers options for an enduring and comprehensive system for community-led retreat. In designing a new system, we will need to consider who makes the decision to retreat and how it is made. There are a number of options but, regardless, communities need to be fully involved in decisions about their future. It will be important to seek out different views across a community on the risks they face, how to respond to those risks and how to fund those responses.

19. The terminology 'community-led retreat' is used in this paper, rather than 'managed retreat'. For the purposes of this paper, community-led retreat means moving homes, businesses, sites of cultural significance and taonga out of harm's way through a carefully planned process that involves the community at every step.
20. To assist iwi, hapū and Māori communities in shaping their futures, an alternative framing for retreat, 'te hekenga rauora', has been proposed by the Expert Working Group on Managed Retreat. This draws on iwi, hapū and Māori migration history and signifies retreat with positive outcomes. It acknowledges the role of communities in making decisions about their future. It also addresses the social, cultural and psychological risks associated with retreat. 'He huringa hekenga' is another possible framing that could be used.

### Question 1

Do you think we should use the term 'community-led retreat'? If not, what do you think we should use and why?

### Iwi, hapū and Māori

21. In this paper we refer to groupings of Māori at place as iwi, hapū and Māori or iwi, hapū and Māori communities. This approach was also used for resource management reforms. While iwi, hapū and Māori includes Māori landowners, marae and whānau, the latter are also referred to separately where appropriate.

### Risk

22. The term 'risk' is used throughout this paper. This term is used to refer to both the possibility of an event happening as well as the consequences of that event.



# Chapter 2 – The need for change

## Overview

This chapter focuses on the:

- challenges with the current adaptation system
- cost of not adapting or not adapting well
- overarching principles that guide our approach to adaptation.

## Key points

- The increasing risk posed by natural hazards is well documented.
- While we will all be impacted in some way, some people will be particularly vulnerable, and iwi, hapū and Māori will be disproportionately affected.
- The current adaptation system has four shortcomings:
  - barriers to Māori participation in climate change adaptation and upholding Māori rights and interests
  - variable quality of risk assessments and local adaptation planning
  - no enduring and comprehensive system for community-led retreat
  - gaps in our funding approach.
- Better adaptation can enable us to avoid or reduce many of the costs and impacts we will otherwise experience during and after a disaster.
- Ten principles in the first national adaptation plan guide our approach to adaptation.

## The challenges we are facing

23. The Intergovernmental Panel on Climate Change (IPCC) has found that our climate is changing due to greenhouse gas emissions which are warming our world.
24. Aotearoa New Zealand's first national climate change risk assessment explains how Aotearoa may be affected. Aotearoa is getting warmer, sea levels are rising and severe weather is happening more often. Large increases in extreme rainfall are expected everywhere in the country, particularly in Northland. This will result in serious flooding, landslides and erosion along the coast. In the future, some places will also be reclaimed by the sea.
25. Some of the changes we have made to our land will make the impact of extreme rainfall worse. These changes include removing forests, draining and building on wetlands and flood-prone areas, making our city surfaces watertight and intensifying our land use.
26. Many of us are already affected by climate change and each of us will be affected in the years to come. If we fail to adapt, we may find ourselves in a constant state of recovery, with increasing risk to lives and livelihoods, property and infrastructure, taonga, culture and heritage and health and wellbeing.
27. While everyone will be affected, some will be more vulnerable.
  - Māori will be disproportionately affected. Culturally significant sites will be threatened, as will access to resources and the industries in which many Māori are employed and have assets. Māori have high levels of hardship already, and a

significant number of Māori communities are in low-lying areas that are highly vulnerable to flooding and sea-level rise. Māori are also more likely than Pākehā to live in rural, remote and low-income areas.

- Pacific peoples will be more vulnerable. Pacific peoples often have more crowded households and lower incomes. Pacific peoples may also have culturally significant assets in areas at risk from flooding and sea-level rise.
  - Rural communities (where large amounts of land are used for business), will be particularly vulnerable, as businesses will be impacted by large changes in temperature and rainfall. People may also become isolated when roads and communication lines are damaged.
  - Disabled people are also more likely to be vulnerable. For example, in heatwaves and severe storms, disabled people are more likely to suffer health problems or be adversely affected by loss of power and communications. If a community needs to evacuate or move, people with physical disabilities or who have limited mobility will need accessible housing and facilities.
  - Older people are also more likely to be vulnerable. In heatwaves and severe storms, older people are more likely than others to suffer health problems, and disasters can disrupt their support networks.
28. Effective adaptation will help to reduce these impacts and costs. As described in chapter 1, the Government has already taken a number of important steps to improve our adaptation system. The remaining challenges explored in this paper are:
- barriers to Māori participation and upholding Māori rights and interests
  - variable quality of risk assessments and local adaptation planning
  - no enduring and comprehensive system for community-led retreat
  - gaps in our funding approach.

## **Barriers to Māori participation and upholding Māori rights and interests**

29. Climate change will have a disproportionate impact on iwi, hapū and Māori as outlined above.
30. The Expert Working Group on Managed Retreat found that the general system for addressing climate change and adaptation issues must uphold te Tiriti o Waitangi. This means ensuring the adaptation system is te Tiriti-based, Māori rights and interests are upheld and that Māori have meaningful involvement as partners throughout the development process.
31. The barriers that limit Māori participation in adaptation are discussed in chapter 3. In particular, Māori-led adaptation has received inadequate investment for a long time. In addition, Māori are often not able to fully engage due to the high demand from central government to engage on multiple priorities, at times simultaneously.
32. The Crown must proactively work with iwi, hapū and Māori to uphold Māori rights and interests, including through protecting Māori land and upholding Treaty settlements. To begin with, this means that te ao Māori and local mātauranga should be central to the development of risk assessments and adaptation planning at place.

33. Retreat will likely affect taonga (including marae, wāhi tapu, wāhi tupuna, mahinga kai and urupā) and the relationship of Māori with the wellbeing of whenua and awa within their rohe. Upholding te Tiriti in this context means, for example, that the process for retreat should respect the rangatiratanga, or self-determination, of iwi, hapū and whānau for their whenua.
34. The Crown must uphold any Treaty settlements that are affected by the retreat. Measures may be needed to recognise and empower rangatiratanga, to actively protect taonga and wāhi tapu sites and to ensure kaitiaki relationships with taonga are safeguarded.

## Question 2

Are there other barriers to Māori participation in adaptation and upholding Māori rights and interests? How can we better support Māori?

## Variable quality of risk assessment and local adaptation planning

35. The quality and comprehensiveness of risk assessments and local adaptation planning undertaken by councils varies. There are examples of good practice across the country, but there are also examples of risks that have not been properly identified or managed.
36. The following causes have been identified:
  - councils have discretion in relation to undertaking adaptation planning and may prioritise other mandatory planning requirements
  - despite requests from councils, the resource management system does not currently set nationally consistent standards or direction across natural hazard risk assessment and planning, and consequently:
    - data may be incomplete, out-of-date or difficult to access
    - there may be no regard to local mātauranga Māori at place
  - before a disaster, there is often great uncertainty regarding the precise timing and nature of risks
  - adaptation requires changes to places that matter to us and in which we have invested ourselves – this can make adaptation contentious and consensus difficult to achieve.
37. There is also no dedicated approach to deciding between retreat and other adaptation pathways.
38. The recent severe weather events have highlighted the need to increase the pace and effectiveness of our risk assessment and planning to proactively reduce risk. New resource management legislation will introduce a stronger focus on addressing the risks posed by natural hazards.<sup>4</sup> Work is also underway to prepare national direction on a Natural Hazards Planning Framework under existing resource management legislation.<sup>5</sup> This national direction could help us strengthen risk assessments and local adaptation planning.

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<sup>4</sup> See appendix A for more information about resource management reforms.

<sup>5</sup> This direction will eventually be incorporated into the new resource management system, as we transition from the Resource Management Act to the Natural and Built Environment and Spatial Planning Acts.

### Question 3

Are there other issues that affect the quality of risk assessments and local adaptation planning? How can we strengthen our approach?

## No enduring and comprehensive system for community-led retreat

39. There is currently no enduring and comprehensive system to support community-led retreat.
40. The land-use planning system was not intended to fill this gap and provides very limited powers to change land ownership and encourage retreat. At present, councils rely on an unsatisfactory patchwork of powers under different pieces of legislation to help individuals and communities at imminent risk. Most instances of retreat have occurred after a disaster has already led to loss of life and property. In the case of the Canterbury earthquakes, a one-off process for retreat was included in new legislation introduced for the recovery.
41. Disasters (such as the Canterbury earthquakes) may increase the number of people who think they need to retreat from a place. Deciding to retreat before a disaster is more difficult. People may not want to retreat due to their connection to the land, the amount of money they have invested in it, the desire to negotiate greater compensation or other financial assistance, the cost of moving somewhere else and the difficulty in finding another suitable place to live.
42. Communities may also want to stay until they feel unsafe. This means that communities may support decisions that manage immediate risks but do not reduce future risks. For example, coastal communities may favour protective measures such as sea walls, even where such structures cannot offer long-term protection.
43. If a community stays in place and a disaster occurs, all of Aotearoa may share in the cost of recovering from that disaster. This will become increasingly unaffordable as the number of extreme weather events – including flooding and slips – increases.
44. While some individuals and businesses may choose to remain in place, others may choose to retreat, including the insurance and banking sectors. This could have significant impacts on communities.
45. Further complexities arise in relation to Māori land. The special status of Māori land recognises the relationship of Māori with their whenua and gives rise to customary interests beyond those of general land ownership. Māori should retain ownership of their land, but Māori and the Crown will need to explore measures to ensure risks can still be reduced.

### Question 4

Are there other issues that limit our ability to retreat in advance of a disaster? How can we improve our approach?

## Gaps in our funding approach

46. The primary responsibility for meeting the costs of adaptation generally falls on asset owners (for property-level actions) and councils (for community-level actions). Central government contributes to adaptation costs through:
- responsibilities for certain infrastructure (such as state highways)
  - assisting with local adaptation actions (on an ad hoc and sometimes reactive basis)
  - assisting with recovery alongside councils (some aspects of assistance are set and others may be on an ad hoc basis).
47. The table below sets out some of the gaps in our funding approach.

**Table 2: Issues with the current funding approach**

| Issues  |   |
|---|---|
| <b>Affordability challenges</b>                   | Some asset owners and councils are unable to afford to meet the costs of adaptation, including retreat. Affordability is a particular challenge for communities with a low average income, high exposure to risk and a legacy of underinvestment in infrastructure. Some Māori communities are also particularly economically vulnerable. This issue will grow as costs rise.   |
| <b>Uncertainty about how costs will be shared</b> | There is a lack of clarity about central government’s role in funding adaptation. This makes it difficult for communities to plan based on an understanding of how the costs of adaptation will be shared.  |
| <b>Reduced incentives</b>                         | People have incentives to improve resilience to avoid future losses. However, these incentives can be reduced. For example, long-term solutions are expensive and can largely benefit future generations. For some, it will be more attractive to invest in temporary actions that defer, but do not remove the need for, more expensive actions. As another example, some expect that councils or central government will underwrite losses after disasters. Recent commitments to supporting adaptation costs (including retreat) in communities severely affected by Cyclone Gabrielle and the Auckland floods may have reinforced this expectation. |
| <b>Reactive and ad hoc approach</b>               | Under the current system, central government and councils often make major adaptation decisions under urgency following disasters. Urgency increases the risk of investing in the wrong actions or places. First, money is primarily spent where disasters are most visible rather than on places that have the greatest overall need. Second, expectations as to the future funding approach are set through ad hoc investment, rather than an enduring approach.  |
| <b>Information issues</b>                         | The problems highlighted above with access to, and quality of, data and information also affect our ability to ensure that we fund the right adaptation actions.  |
| <b>Narrow understanding of benefits</b>           | The current system is largely premised on beneficiaries paying for adaptation measures. However, understandings of benefits can sometimes be narrow and less direct benefits overlooked.  |

48. Ultimately, our current approach to funding adaptation is contributing to problems with the way we are adapting as a country, including no or poor adaptation and potentially reinforcing existing inequities.

### Question 5

Are there other issues with the way we fund adaptation? How can we improve our approach?



## The consequences of not adapting well

49. We have built communities in areas at high risk from climate change, often because we did not know what the future risk might be. As outlined at the start of this chapter, natural disasters put people and places at risk of serious and ongoing harm. Both recent and historical events demonstrate the financial implications of recovery.
50. Other recovery costs, such as long-term impacts on wellbeing, are harder to quantify. They include personal and financial stress, disruption to education and access to healthcare, destruction of ecosystems, interruptions to services and the impact on personal and cultural connections to places that will be changed forever.
51. Better adaptation can help us avoid or reduce many of the costs and impacts we will otherwise experience. Failing to adapt increases the likelihood that in the future, at any given time, many people will be in similar circumstances to those affected by Cyclone Gabrielle and the Auckland floods. This may compound existing inequities experienced by Māori and other vulnerable groups.

### Question 6

What do you think the costs are of a failure to adapt or failure to adapt well?

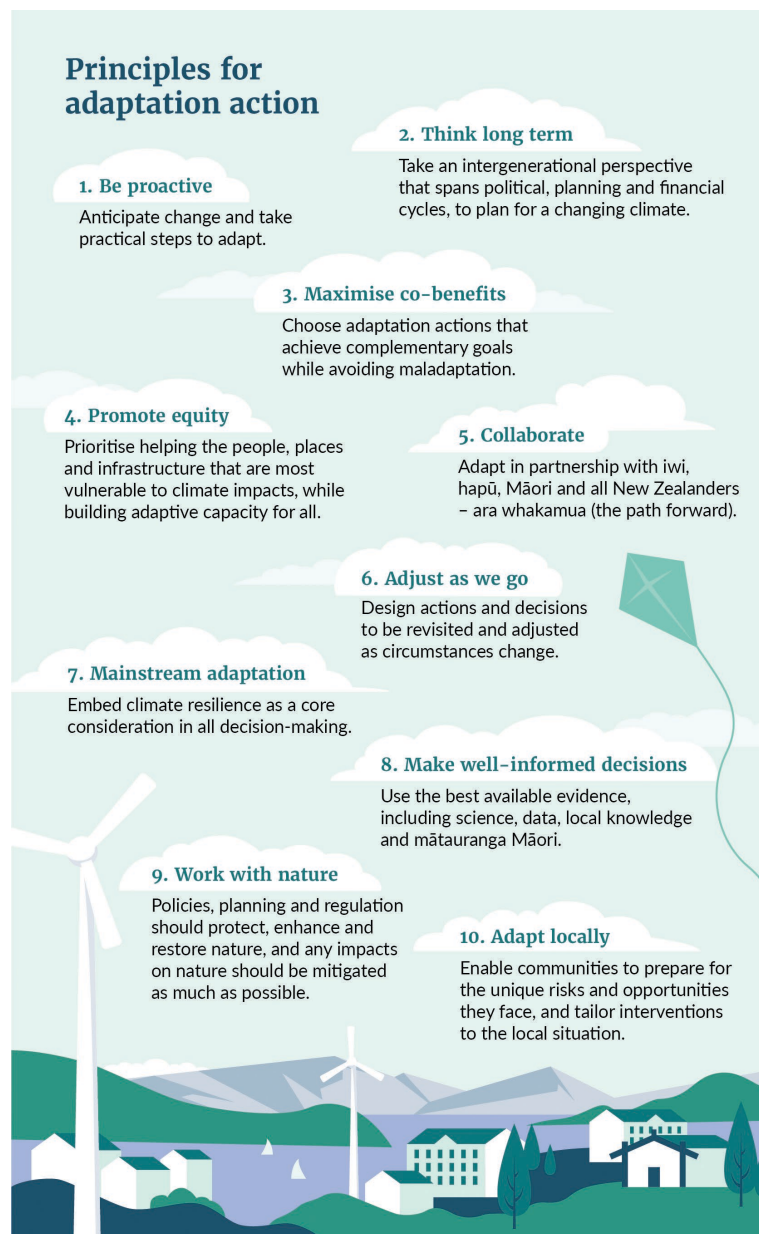
**Figure 4: The significant cost of disasters over time**



# The goals for adaptation

52. The Government's overarching goals for adaptation are set out in the first national adaptation plan:
  - reduce vulnerability to the impacts of climate change
  - enhance adaptive capacity and consider climate change in decisions at all levels
  - strengthen resilience.
53. The first national adaptation plan also establishes 10 principles to support adaptation actions (figure 5), which have helped guide the development of options and outcomes in this paper.
54. More specifically, chapter 6 sets out potential outcomes and principles to guide the development of a community-led retreat system. Chapter 7 also sets out potential adaptation funding outcomes and principles.

**Figure 5: Principles guiding our adaptation strategy**



# Chapter 3

## – Te Tiriti-based adaptation

### Overview

This chapter focuses on:

- how to ensure the adaptation system upholds te Tiriti o Waitangi and Māori rights and interests
- creating a starting point for discussions with iwi, hapū and Māori about a te Tiriti-based adaptation system that includes community-led retreat.

### Key points

- Iwi, hapū and Māori are disproportionately affected by climate change.
- Despite this, iwi, hapū and Māori are already undertaking adaptation planning.
- The Crown must proactively work with iwi, hapū and Māori to understand how to uphold Māori rights and interests and kāwanatanga obligations in a way that creates space for tino rangatiratanga.
- Te ao Māori and local mātauranga should be central to the development of risk assessments and adaptation planning at place.
- Iwi, hapū and Māori at place should be supported to prepare risk assessments and adaptation plans.
- In areas where community-led retreat may be the only option, iwi, hapū and Māori should retain ownership of the land to maintain connection with whenua.
- We need to discuss what retreat might mean for subsequent land use and the support that is needed for iwi, hapū and Māori to relocate.
- Impacts on Treaty settlement land will also need to be addressed on a case-by-case basis through agreements between post-settlement governance entities and the Crown.
- Iwi, hapū and Māori will need adequate resourcing to participate.

## Ka mua, ka muri

55. As tangata whenua of Aotearoa, Māori have a long history of adapting to natural hazards and changing environments. Every iwi and hapū has a migration story to tell, whether seasonal or permanent. Indigenous peoples around the world have survived, in large part, because of their ability to adapt to challenging circumstances.
56. The United Nations has observed that indigenous peoples are among the first to experience the direct consequences of climate change due to their close relationship with the environment. In the past, all land in Aotearoa was cared for by Māori. After the signing of the Treaty of Waitangi in 1840, the Crown acquired Māori land. The intergenerational impact of colonisation, land dispossession and historical grievances have contributed to the disproportionate impacts of climate change on Māori and may also mean some communities and individuals are wary of discussions on adapting to climate change and retreat.

57. However, there are many examples of iwi, hapū and Māori adapting to climate change, from their long history of adapting to changing environments pre-colonisation to now leading discussions in their own iwi, hapū and communities on adapting to climate change impacts. There is an opportunity to integrate te ao Māori and mātauranga Māori into adaptation and to collaborate with iwi, hapū and Māori on what adaptation in Aotearoa might look like.
58. Retreat processes should uphold iwi, hapū and Māori rangatiratanga and their rights to their whenua and taonga katoa. The system for adaptation should acknowledge historical grievances and avoid causing further harm to iwi, hapū and Māori communities. It should also incorporate key learnings, knowledge and frameworks that iwi, hapū and Māori are already using to address the impacts of climate change.

## Barriers to Māori adaptation

59. As discussed in chapter 2, climate change is already having profound and disproportionate effects on iwi, hapū and Māori communities and their taonga such as marae, urupā, wāhi tapu and mahinga kai.
60. Land held by iwi, hapū and Māori is likely to be disproportionately vulnerable to climate impacts and natural hazards. This vulnerability is due to the large proportions of land that is low-lying, located in coastal areas or in steep marginal places (prone to erosion and the impacts of heavy rain and wind). Many significant cultural sites, such as marae, urupā, ancient gardens and healing places, are also along coastlines or near flood-prone rivers.<sup>6</sup>
61. Challenges arise as iwi, hapū and Māori communities face compromised infrastructure and land erosion caused by deforestation near coastlines and waterways. Some iwi, hapū and Māori communities now own land that is not part of their traditional territories, and their connections to the land may vary. Land that has been returned to iwi, hapū, and Māori communities tends to be in rural or isolated areas. But this is not just a land issue – it is a wellbeing issue as well, given that:
  - Māori health is often tied to the health of their whenua
  - Māori have relatively poorer health outcomes than Pākehā.
62. The following table summarises the barriers to Māori adaptation:

**Table 3: Barriers to Māori adaptation**

| Barriers to Māori adaptation    |   |
|---------------------------------|---|
| <b>Historical dispossession</b> | Colonisation resulted in iwi, hapū and Māori communities being dispossessed of their ancestral lands. This loss of land disrupted their cultural practices and traditional knowledge systems. This may increase the challenges for some iwi, hapū and Māori communities in adapting and maintaining their connections to significant sites.   |
| <b>Limited resources</b>        | Iwi, hapū and Māori communities often face resource constraints, including limited access to funding and administrative and technical support. This affects their ability to engage in comprehensive adaptation planning and to implement actions, making them more vulnerable to climate change impacts. Māori are also often not able to fully engage due to the high demand from central government to engage on multiple priorities, at times simultaneously. |

<sup>6</sup> Ministry for the Environment. 2022. *Aotearoa New Zealand's first national adaptation plan*. Wellington: Ministry for the Environment.



| Barriers to Māori adaptation  |   |
|-------------------------------|---|
| <b>Institutional barriers</b> | Existing decision-making processes and institutions do not adequately recognise or accommodate Māori rights and interests. When their unique perspectives and local mātauranga are overlooked, it is difficult for iwi, hapū and Māori communities to participate effectively in adaptation planning.   |
| <b>Power imbalance</b>        | Power imbalances between Māori and the Crown can hinder meaningful engagement and collaborative adaptation planning. Māori communities may find it difficult to influence outcomes and ensure their cultural values are respected and included in plans.  |
| <b>Cultural disconnect</b>    | The cultural disconnect between Western approaches to adaptation planning and Māori cultural values and practices can create a barrier to Māori participation. Western frameworks often prioritise economic considerations and infrastructure-based solutions. In contrast, Māori perspectives emphasise holistic and interconnected approaches that integrate cultural, environmental and social dimensions. |

63. On 22 February 2023, the Māori Affairs Committee initiated a briefing to receive information about how climate change adaptation may affect Māori. The report summarising submissions to the committee reiterates these challenges.<sup>7</sup> The committee presented its final report to Parliament on 5 July 2023 (See appendix B).
64. Despite these challenges, iwi, hapū and Māori communities continue to lead discussions and action on climate change at place with strategies like *He Toka Tū Moana Mō Maketu – Maketu Climate Change Adaptation Plan* and hapū-level discussions about moving marae.<sup>8</sup>
65. The resiliency and mobilisation of resources and support that iwi, hapū and Māori communities displayed during the recent severe weather events demonstrate the effectiveness of a system that incorporates te ao Māori and mātauranga Māori.

## Tangata whenua and the special nature of Māori land

66. Ka ora te whenua, ka ora te whānau. Māori connection to the whenua cannot be treated in isolation from the wellness of the people. Māori land as taonga tuku iho has special significance to iwi, hapū and Māori as they are connected through whakapapa. The special nature of Māori land and the Māori connection to whenua must be understood and reflected in any new system for adaptation.
67. Māori land as taonga tuku iho also recognises that Māori rights and interests are not solely limited to individual property rights such as ownership. These rights and interests include exercising rangatiratanga over their whenua with the right to make decisions on protection and use of their whenua.
68. During the late 20th century, the Crown acknowledged the unjust confiscation and alienation of Māori land, leading to the establishment of the Waitangi Tribunal and Treaty settlements.

<sup>7</sup> New Zealand Parliament. *Māori Affairs*. Retrieved 25 July 2023.

<sup>8</sup> Maketu Iwi Collective. 2023. *He Toka Tū Moana Mō Maketu- Maketu Climate Change Adaptation Strategy*. Retrieved 25 July 2023.

69. Te Ture Whenua Māori Act 1993 was enacted to govern Māori land, aiming to empower Māori landowners while preserving the land for future generations. The Act reflects the principles of te Tiriti and protects wāhi tapu and Māori land as taonga tuku iho.
70. Common types of Māori land include Māori customary, freehold and reservation land; general land owned by Māori; Treaty settlement land; and marine and coastal areas (takutai moana). The table below provides more information about each of these types of land.

**Table 4: Types of Māori land**

| Types of Māori land                             |   |
|---|---|
| <b>Māori customary land</b>                     | <ul style="list-style-type: none"> <li>• Land held by Māori according to tikanga Māori</li> <li>• Has not had its ownership investigated and determined by the Māori Land Court</li> <li>• Has taonga status and cannot be alienated</li> <li>• Can become freehold land</li> </ul>   |
| <b>Māori freehold land</b>                      | <ul style="list-style-type: none"> <li>• Land for which the Māori Land Court has determined beneficial ownership by freehold order</li> <li>• Can be held by individuals, trusts and others</li> <li>• Can become general land</li> </ul>   |
| <b>Māori reservation land</b>                   | <ul style="list-style-type: none"> <li>• Customary, freehold or general land set aside as a Māori reservation for cultural purposes including marae, urupā and wāhi tapu</li> <li>• Māori reservations are often home to cultural infrastructure like marae and urupā</li> <li>• Māori reservation land is inalienable</li> </ul>   |
| <b>General land owned by Māori</b>              | <ul style="list-style-type: none"> <li>• General land that is now beneficially owned either by one Māori person or by a group of people the majority of whom are Māori</li> <li>• Some provisions of Te Ture Whenua Māori Act apply</li> </ul>  |
| <b>Treaty settlement land</b>                   | <ul style="list-style-type: none"> <li>• Land returned under a Treaty settlement through cultural and commercial redress</li> <li>• Held by post-settlement governance entities</li> <li>• Can often be more vulnerable to impacts of climate change</li> </ul>   |
| <b>Marine and coastal areas – Takutai Moana</b> | <ul style="list-style-type: none"> <li>• Coastal land generally including the wet part of the beach and the seabed up to 12 nautical miles offshore</li> <li>• Retreat from land adjacent to the Marine and Coastal Area (Takutai Moana) Act 2011 may pose challenges for applications under the Act, which need to demonstrate exclusive use and occupation since 1840, or customary transfer, for customary marine title</li> </ul> |

71. Other Māori land categories include land held by Māori incorporations, land returned under the Public Works Act 1981 to descendants of Māori landowners and land purchased by post-settlement governance entities with settlement resources.
72. Te Ture Whenua Māori Act establishes rules for different types of Māori land. It also places limitations and protections on land use and administration. The most common kind of administrative bodies are Māori land trusts, which can cover multiple iwi, hapū, Māori and post-settlement governance entities. Māori may require assistance across the adaptation process, specifically where there may be inactive governance structures.
73. Changes to the adaptation system will need to reflect the special nature and types of Māori land.

## A te Tiriti-based adaptation system

74. This paper proposes a te Tiriti-based approach to adaptation. A te Tiriti-based approach would support the Crown to work proactively with iwi, hapū and Māori to understand how to uphold Māori rights and interests and kāwanatanga obligations in a way that creates space for tino rangatiratanga. It would also recognise and respond to the special nature of Māori land.
75. This chapter discusses what a te Tiriti-based approach could mean across the core components of the adaptation system discussed in this paper: risk assessment, local adaptation planning (including decision-making), community-led retreat and funding and financing. The chapter is not intended to set out options. Rather it provides discussion points so that iwi, hapū and Māori can work with the Crown to develop options.
76. The table below outlines six core components of a te Tiriti-based adaptation system that have been used to develop the starting point for discussion:

**Table 5: Core components of a te Tiriti-based adaptation system that creates space for tino rangatiratanga**

| Core components of a te Tiriti-based adaptation system |  |
|--|--|
| 1.   | Uphold the Crown's te Tiriti obligations, which include upholding the principles of partnership, protection, participation, active protection of taonga, acting in good faith and specific redress obligations |
| 2.   | Uphold Māori rights and interests  |
| 3.   | Integrate te ao Māori and mātauranga Māori   |
| 4.   | Adequately resource iwi, hapū and Māori to participate as they choose  |
| 5.   | Have decision-making roles for iwi, hapū and Māori   |

### Question 7

What does a te Tiriti-based approach to adaptation mean to you?

### Risk assessment (chapter 4)

77. The first step in adaptation planning is to assess risk. A te Tiriti-based approach to adaptation means that te ao Māori and local mātauranga Māori should be included in risk assessments.
78. Including te ao Māori in risk assessments would reflect the importance of a Māori world view in the way risks are defined and assessed. Including te ao Māori would also enable a holistic assessment that considers impacts on people's health, livelihoods, whenua and taonga.
79. Including local mātauranga in risk assessments would recognise that iwi, hapū and Māori communities at place have recorded natural hazards and events for generations in their pūrakau, waiata and wāhi ingoa. For example, Waikino, near Waihi, designates a point on a narrow river channel known to cause a dangerous torrent.<sup>9</sup> This reflects a deep understanding and close observation of the local environment to identify natural hazards and predict changes in the weather and climate.

<sup>9</sup> NIWA. 2017. *Facing natural hazards with Māori environmental knowledge*. Retrieved 25 July 2023.

80. There is a unique opportunity here to learn from iwi, hapū and Māori communities at place and follow their lead on what assessing risk in their rohe might look like (given the generations of local mātauranga and deep connection they have with the whenua).
81. Possible approaches to incorporating te ao Māori and local mātauranga Māori in risk assessments include the following:
  - national direction or guidance is issued on including te ao Māori and local mātauranga Māori in risk assessments
  - no national direction or guidance is issued, but councils partner with iwi, hapū and Māori communities at place to develop and carry out risk assessments, with consideration of local mātauranga and te ao Māori
  - regional planning committees under new resource management legislation issue direction or guidance for developing risk assessments, and then local iwi and hapū could develop specific risk assessments with councils in their rohe.
82. Several kaupapa Māori frameworks could be suitable for providing direction or guidance at a national level (see figure 6 below).
83. Throughout the risk assessment process, iwi, hapū and Māori should have opportunities to input and lead where appropriate. This could be achieved through strong partnership among iwi, hapū and Māori at place with the agency or organisation that is responsible for carrying out risk assessments. One example of this would be local iwi or hapū leading the risk assessment process for whenua Māori or culturally important areas, with the responsible agency providing support, such as resources or information, where required.
84. Opportunities to develop partnerships and create space for iwi, hapū and Māori communities, are outlined in the report from the independent Review into the Future for Local Government.<sup>10</sup> They include ensuring iwi, hapū and Māori are recognised as Treaty partners by councils in legislation and in practice.

### Question 8

What does a local mātauranga-based framework for risk assessment look like to you?

## Local adaptation planning (chapter 5)

85. Adaptation planning follows risk assessment and involves the identification and assessment of options to reduce risk. There are many examples of iwi, hapū and Māori leading adaptation planning effectively.
86. For example, the Maketu Iwi Collective – consisting of Te Rūnanga o Ngāti ki Maketu, Whakaue Marae Trustees and Ngāti Pikiao Noho Ki Tai – led the development of a climate adaptation plan working closely with the local community and regional council. The actions ranged from development of food gardens to a land-use change project.

<sup>10</sup> Review into the Future for Local Government. 2023. *He piki tūranga, he piki kōtuku*. Wellington: Review into the Future for Local Government. The independent Review into the Future for Local Government was established in response to requests from the local government sector. The sector wanted a work programme to reimagine the roles and functions of local government to build a sustainable system that delivers enhanced wellbeing outcomes for our communities. Any changes arising from the final report must be preceded by local government leading meaningful, sector-wide engagement and agreement on the potential scope of reform and the process.

### Te Kounga Paparangi – Ngāi Tahu climate change action plan – case study

The Ngāi Tahu takiwā covers most of Te Waipounamu (South Island). Climate change action is especially urgent for the iwi as 16 of its 18 marae are at risk of flooding and rising sea levels.

In 2018, Te Rūnanga o Ngāi Tahu released a climate change strategy, *Te Tāhū o te Whāriki*. It was one of the first iwi to release such a strategy. It was developed in three stages: scoping; learning together; and pulling it all together.

Development of the strategy included a NIWA report on projected climate change impacts, whānau surveys, hui, wānanga and a rangatahi symposium. This ensured the strategy was developed by the people, for the people of Ngāi Tahu.

Te Rūnanga o Ngāi Tahu followed this up with the release of a climate action plan, Te Kounga Paparangi, in 2022. This action plan was created to mitigate climate change, build resilience, and promote sustainable business practices. It includes measurable key performance indicators and ambitious goals set for 2050.

The plan supports Papatipu Rūnanga aspirations and empowers whānau and Ngāi Tahu business units to combat climate change. It fosters sustainability and supports a resilient future.

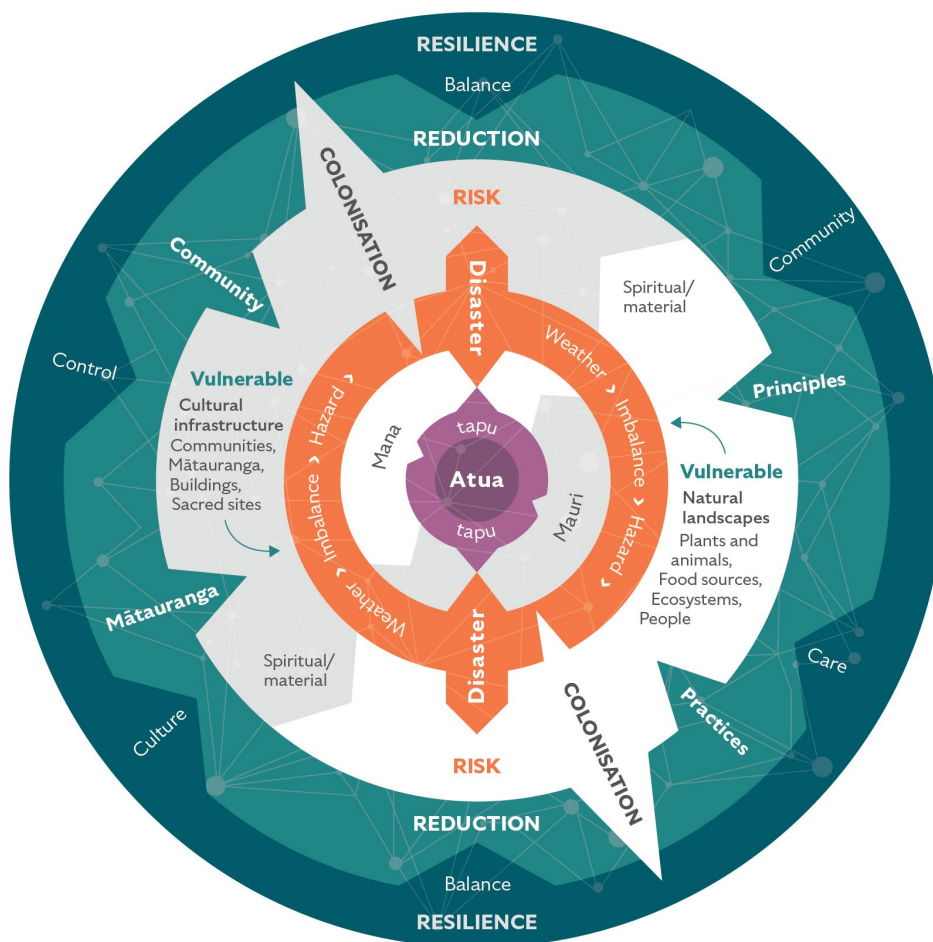
87. A te Tiriti-based approach to local adaptation planning means that:
- iwi, hapū, Māori landowners and Māori communities are involved, as they choose, throughout the planning process
  - space is created for rangatiratanga and partnership with the Crown
  - there is access to relevant information
  - te ao Māori and local mātauranga Māori are embedded in the processes.
88. Several approaches could ensure each iwi, hapū and Māori community is able to determine their own participation in the local adaptation planning process. These approaches range from providing a statement that details their aspirations for adaptation plans (such as Te Mana o te Wai statements and upcoming Te Oranga o te Taiao statements<sup>11</sup>) to providing detailed adaptation plans that set out their approach to adaptation across their whenua and rohe.<sup>12</sup>
89. No matter the approach, where Māori communities or land are affected, the planning process may require additional or parallel processes throughout the system, to ensure access to relevant information and to embed te ao Māori and local mātauranga Māori throughout. The kaupapa Māori risk reduction framework is one way to give effect to a systems-based approach to adaptation planning.

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<sup>11</sup> Mana whenua across the motu are being given the opportunity to provide Te Mana o te Wai statements outlining their aspirations, actions for freshwater that must be taken in account by councils. Te Oranga o te Taiao statements will operate the same way but are given a different weighting and must be taken into consideration by councils.

<sup>12</sup> Many iwi and hapū already have adaptation plans, including Te Arawa, Ngāi Tahu and Maketu Iwi Collective.

Figure 6: Kaupapa Māori risk reduction framework



**Expert Working Group Report Chapter 2**

This kaupapa Māori framework created by Shaun Awatere (Manaaki Whenua) reflects a whole system-based perspective. It includes the relational and cyclical nature of hazards, disasters, risk reduction and resilience. Atua can be observed as a representation of taiao where mana is the recognition of intrinsic value, irrespective of human value, and mauri is the signifier of the life force of natural assets. Climate change is causing imbalance resulting in natural hazards, leading to cumulative effects on natural assets that have been degraded, creating disasters affecting Māori communities. This conceptual framework could feed into options identification and, ultimately an adaptation plan.

90. There may be a need to navigate overlapping interests during the planning process, especially if aspirations differ among holders of those interests. One potential approach would be a direct-to-Crown process if a breakdown in the planning process occurs. This could involve using rōpū such as regional councils, regional planning committees or the National Māori Entity under the new resource management system.<sup>13</sup> Another potential approach would be to support mana whenua to work with councils to develop guidelines for resolving conflicts.
91. Finally, a te Tiriti-based approach to adaptation planning needs to consider roles and responsibilities for iwi, hapū and owners of Māori land and general land. This may include devolving decision-making powers over their whenua to iwi and hapū (which could assist in addressing concerns that retreat is a form of raupatu). These matters need to be considered in partnership with iwi, hapū and Māori.

<sup>13</sup> Regional planning committees and the National Māori Entity will both be established under the Natural and Built Environment Bill.



### Question 9

What innovative approaches to adaptation planning do you have with your own hapori?

### Question 10

How can we manage overlapping interests during adaptation planning, including where there is a conflict?

## Community-led retreat (chapter 6)

92. Applying a retreat system to Māori land is complex due to historical dispossession, the significance of land to Māori, special rules under Te Ture Whenua Māori Act 1993, Treaty settlements, customary marine title rights and collective ownership models. The Crown also has an obligation to protect whenua Māori.
93. Despite these challenges, iwi, hapū and Māori landowners are already initiating discussions on what retreat looks like for their own communities at place. The Crown has an opportunity to listen and learn from iwi, hapū and Māori landowners about what adaptation at place looks like for them and how the Crown can support their aspirations.
94. A te Tiriti-based approach for retreat is complex and needs to be determined in partnership with iwi, hapū and Māori at place. Key considerations include:
  - incorporating Māori perspectives, te ao Māori and local mātauranga Māori
  - developing packages to support relocation of cultural assets such as marae, whare and taonga associated with the marae
  - identifying relocation sites, expediting necessary consents, funding infrastructure and addressing socio-economic issues
  - mitigating potential exacerbation of existing housing-related inequities for Māori
  - creating space for iwi, hapū and Māori to exercise rangatiratanga over their land and kaitiaki roles in ecosystem restoration
  - providing navigators to assist Māori landowners and communities through the retreat process.
95. The ownership of Māori land should not be affected. Measures will be needed, however, to ensure risks can be reduced for land affected by retreat. This could include, for example, protective measures to ensure land is used safely.
96. The impacts of climate change on Treaty settlement land will also need to be considered.
97. The Māori Climate Platform could play a role in supporting iwi, hapū and Māori to engage in a system for community-led retreat.<sup>14</sup> A Ministerial Advisory Committee made up of Māori climate and taiao practitioners are developing the Māori Climate Platform to enable Māori-led climate action and planning and solutions that build resilience. There is an opportunity to replicate already existing ‘by Māori, for Māori’ approaches. For example, Te Mātāwai and how this institution operates with Te Taura Whiri Reo Māori.<sup>15</sup>

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<sup>14</sup> Ministry for the Environment. *Māori Climate Platform*. Retrieved 25 July 2023.

<sup>15</sup> See: Te Mātāwai. 2023. *Kāinga*. Retrieved 25 July 2023.

### Question 11

What is your perspective on the Crown's te Tiriti obligations to support community-led retreat? Are there existing examples of what that should or should not look like?

## Funding and financing (chapter 7)

98. A te Tiriti-based approach to adaptation means that all communities will require sufficient coordinated, wrap-around support from councils and central government to implement adaptation planning.
99. Given that iwi, hapū and Māori are Treaty partners, the designation of Māori land as taonga tuku iho, and the complexities associated with Māori land, a flexible funding approach may be needed. Such an approach could address the diverse circumstances of each iwi, hapū, Māori landowner and Māori community and support them to adapt.
100. Funding may be needed for alternative housing, moving costs, rebuilding structures and preserving cultural infrastructure and sites. Papakāinga models across the motu could be used to assess potential funding and living arrangements for iwi, hapū and Māori communities.
101. Chapter 7 considers various options, including the possibility of creating an adaptation fund specific to iwi, hapū and Māori (covering retreat and other adaptation actions). This fund could operate like Te Mātāwai model, where regional boards made up of mātauranga Māori, climate and taiao practitioners make adaptation funding decisions.

### Question 12

What funding approaches have worked for your own iwi, hapū and hapori?

## Adapting through recovery (chapter 8)

102. As discussed throughout this paper, successful adaptation for Māori – both before and after a disaster – relies on a te Tiriti-based approach that should:
  - adequately support and resource Māori participation in climate change adaptation
  - incorporate Māori perspectives, te ao Māori and local mātauranga Māori.
103. It will be important to ensure a te Tiriti-based approach is taken to extending any features of the enduring adaptation system to adaptation through recovery. This could be achieved by:
  - developing a parallel pathway to ensure equitable outcomes for Māori land and communities, as is the case for the recovery from Cyclone Gabrielle and the Auckland floods
  - providing navigators to assist Māori landowners and communities through the process
  - creating space for iwi, hapū and Māori to exercise rangatiratanga over their land, and kaitiaki roles in ecosystem restoration
  - supporting recovery of cultural assets such as marae, whare and taonga associated with the marae.

# Chapter 4 – Risk assessment

## Overview

This chapter discusses:

- how work on national direction will improve the approach to risk assessment
- opportunities for central government to provide direction on risk assessment to support local adaptation planning.

## Key points

- Risk assessment for identified natural hazards is the first step in the adaptation process.
- Risk assessment is necessary to understand the risks posed by natural hazards and to trigger action.
- The quality of risk assessments can be affected by barriers to accessing quality data and the method of risk assessment used.
- Proposed national direction under the Resource Management Act 1991 for a Natural Hazards Planning Framework will set out an approach to risk assessments and risk management for the purpose of land-use planning.
- Over time, this work will ensure that councils identify, assess and address risks from natural hazards in a consistent and rigorous way.
- There is an opportunity for the proposed inquiry into community-led retreat and adaptation funding to consider what improvements to risk assessment are needed for the purposes of local adaptation planning.

## What is a risk assessment?

### Key terms

- **Exposure** refers to the nature and extent to which something is exposed to natural hazard risks.
- **Vulnerability** refers to the extent to which something is susceptible to, or unable to cope with, adverse impacts from risks.
- **Risk tolerance** refers to the extent to which we are willing to accept risks to the things we value (such as health, environment, economy, buildings and infrastructure), and helps us decide how to manage the potential impacts of a natural hazard on those things.

104. Assessing the risks arising from identified natural hazards is the first step in the adaptation process. Risk assessment means understanding the risks posed by natural hazards, including how exposed or vulnerable those things at risk might be. To assess risk, we need to be able to work out the probability and likelihood of a particular kind of natural hazard occurring.
105. For the purposes of adaptation planning, risk assessments should enable us to:
  - understand the nature and extent of natural hazard risks and their impact
  - consider whether we are willing to tolerate the consequences

- identify and prioritise places where we need to adapt, including identifying areas for retreat and where we can live or relocate to
  - proactively reduce risks.
106. Risk assessments rely on natural hazard data. Some of the types of data needed for a risk assessment include:
- climatic change and extreme weather hazards for different emissions scenarios
  - susceptibility of areas to slips from heavy rain, drought and rapid wet and dry changes
  - sea-level rise projections
  - areas of flooding
  - areas where current land use makes a hazard riskier
  - the level of vulnerability of a place or community to these hazards.

## Current approach to risk assessment

107. This chapter focuses on regional and local risk assessments undertaken to support local adaptation planning. It does not discuss the different types of risk assessments that may be undertaken for other purposes within a region. However, councils may sometimes choose to prepare one risk assessment that covers a number of legislative requirements.
108. Under the Resource Management Act 1991, councils are required to control the use of land for the purposes of avoiding or mitigating natural hazard risks (known as land-use planning).<sup>16</sup> Risk assessments undertaken for this purpose generally provide the basis for local adaptation planning.
109. No national direction is in place at present to support councils to carry out risk assessments under the Resource Management Act 1991 specifically for local adaptation planning.<sup>17</sup> Councils use a variety of methodologies for risk assessment, as well as different approaches to engaging with affected communities throughout the risk assessment process.

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<sup>16</sup> The Resource Management Act 1991 gives councils functions in relation to the management of natural hazards. In addition, the Act requires decision-makers to recognise and provide for the management of significant risks from natural hazards and pay particular regard to the effects of climate change.

<sup>17</sup> However, there is national direction for risk assessments in coastal areas. See: Department of Conservation. 2010. *New Zealand Coastal Policy Statement 2010*. Wellington: The Department of Conservation. Also see Ministry for the Environment. 2021. *He kupu ārahi mō te aromatawai tūraru huringa āhuarangi ā-rohe / A guide to local climate change risk assessments*. Wellington: Ministry for the Environment. Additionally, a guidance note issued under the Resource Management Act 1991 provides information to councils on how to use climate change scenarios when preparing or changing a regional policy statement, regional plan or district plan. See Ministry for the Environment. 2022. *National adaptation plan and emissions reduction plan: Resource Management Act 1991 guidance note*. Wellington: Ministry for the Environment.

### Thames-Coromandel – case study

The Coromandel Peninsula is 85 kilometres long and 40 kilometres wide at its broadest point. Most people live in towns and communities on the narrow strips on the west and east coasts. Coastal erosion and severe weather events are posing problems, including coastal inundation. In June 2018, the council adopted the Coastal Management Strategy, which sets out a range of initiatives including the Shoreline Management Pathways project. The aim of the project was to establish a framework for the management and reduction of risks to people, property, the environment and taonga associated with coastal hazards.

Numerous natural hazard reports supported the risk assessment process, covering coastal inundation, cliff and slope stability and coastal erosion. A first-pass risk assessment of coastal hazards for the Coromandel Peninsula helped define priority areas for more detailed hazard assessment, which informed the second- and third-pass risk assessments.

## Issues with the current approach to risk assessment

110. Many councils undertake risk assessments, and there are some high-quality examples. However, in some places problems are impacting on the quality and comprehensiveness of risk assessments.
111. First, many councils have difficulty accessing quality data. A key priority in the first national adaptation plan is to enable better risk-informed decisions. Actions to improve access to and quality of data and other information are in progress. This issue is not, therefore, considered further in this paper.
112. Second, councils use a variety of methodologies for risk assessment, as well as different approaches to engaging with affected communities throughout the risk assessment process.
113. In addition, giving effect to risk assessments can mean councils make some difficult decisions about land use, which may be controversial.
114. The Expert Working Group on Managed Retreat identified the following opportunities to improve our approach to risk assessment:
  - new legislation establishing who carries out risk assessments and how they are done
  - the establishment of a risk threshold, or criteria to determine a threshold, beyond which communities must consider retreat as an option
  - risk assessments for Māori land conducted by Māori, with appropriate support, and the use of Māori frames of reference alongside the standard approach
  - a range of expert groups at national, regional and local levels to support the technical nature of risk assessment
  - institutional arrangements that separate the following roles: standard setting, undertaking risk assessment and quality assurance.
115. The next section outlines work in progress that will help make improvements in these areas.

116. Risk assessments to support local adaptation planning need to work well with the resource management system, council planning processes and our emergency management system. For this reason, we look at opportunities to improve the approach to risk assessment under resource management legislation, rather than considering the development of new legislation for risk assessment (as suggested by the Expert Working Group).

## Work underway to improve our approach

### What is national direction?

National direction supports local decision-making under the Resource Management Act 1991. It is provided through national policy statements, national environmental standards, national planning standards and section 360 regulations.

Under new resource management legislation, national direction will be provided through the National Planning Framework.

117. The Government is currently developing under the Resource Management Act 1991:
- a National Policy Statement on Natural Hazard Decision-making<sup>18</sup>
  - more comprehensive national direction on a Natural Hazards Planning Framework.<sup>19</sup>
118. Both pieces of national direction will be consulted on as the policy is developed. The proposed inquiry into community-led retreat and adaptation funding would provide an early opportunity to inform the development of the Natural Hazards Planning Framework to ensure it supports local adaptation planning.
119. The Natural Hazards Planning Framework could provide nationally consistent direction on risk assessment to support local adaptation planning as follows:
- mandatory consideration of natural hazards for land use
  - methodologies for undertaking risk assessment and risk tolerance assessments
  - standardised terminology and definitions, including thresholds for levels of risk tolerance
  - when and how communities should be engaged during a risk assessment process
  - enabling Māori to assess natural hazard risks in a culturally appropriate way, and to respond in a way that works for them.
120. This national direction will be established under the Resource Management Act 1991 and later it will be incorporated into the National Planning Framework under the Natural and Built Environment Bill (see appendix A).

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<sup>18</sup> This national policy statement will be an interim measure to guide all councils on the appropriate weight to attach to natural hazard risk, including the effects of climate change, in consent decisions and changes to planning instruments relating to future development.

<sup>19</sup> The Natural Hazards Planning Framework would incorporate or replace the National Policy Statement on Natural Hazard Decision-making and will further support decisions on natural hazard management. It will ensure that decision-makers identify, assess and address risks from natural hazards, including those made worse by climate change, in a consistent and rigorous way when making decisions about existing and future land use and adaptation.



## Opportunities to improve risk assessment

121. There is an opportunity for the proposed inquiry into community-led retreat and adaptation funding to inform the approach to the proposed Natural Hazards Planning Framework.
122. This section seeks your views on how we could standardise:
- the process for risk assessment
  - how we classify whether a risk is tolerable or intolerable
  - roles and responsibilities for risk assessments.

### Process for risk assessment

**Stages of risk assessment** refer to the different steps in the risk assessment process – each stage helps us to better understand risks by looking more or less closely at them and considering how these risks may affect us.

123. The process for risk assessment can involve several stages. Different scales and levels of detail may be important for each stage.
124. The table below draws on the Ministry for the Environment’s guidance on local climate change risk assessment.<sup>20</sup> The table suggests a risk assessment process with three stages and describes the scale and level of data for each stage.

**Table 6: A three-stage risk assessment process**

| Stage                                     | Typical scale                         | Description   |
|---|---------------------------------------|---|
| <b>1. First-pass/high-level screening</b> | Regional, district, community, sector | <ul style="list-style-type: none"> <li>• Identifying and describing risks in regions, districts, cities and local communities within agreed themes and value domains</li> <li>• Using themes helps us to organise large amounts of information into groups, eg, the built environment, natural environment and the economy</li> <li>• Value domains help us to gain an understanding of risk across different parts of society, eg, governance is a value domain that includes processes in and between institutions</li> </ul> |
| <b>2. Detailed assessment</b>             |                                       | <ul style="list-style-type: none"> <li>• Identified risks are assessed using an agreed method</li> <li>• Descriptions of risks may include discussion of sub-regional and sub-sectoral differences</li> </ul>   |
| <b>3. Detailed assessment</b>             | District or community level           | <ul style="list-style-type: none"> <li>• Risks are assessed and rated according to an agreed method, supported by quantitative data</li> <li>• Downscaled climate projections, district and city hazard and exposure modelling, and vulnerability analysis are used to assess risks</li> <li>• Descriptions of risks can discuss a range of spatial scales and may include detailed maps or asset registers</li> </ul>  |

<sup>20</sup> Ministry for the Environment. 2021. *Ke kupu ārai mō te aromatawai tūraru huringa āhuarangi ā-rohe: A guide to local climate change risk assessments*. Wellington: Ministry for the Environment.

125. Street and property-level risk assessments will not be required at this stage of the process given the purpose of this risk assessment is to identify areas within a region or district where local adaptation planning should occur. More detailed and granular risk assessments at the street or property scale may take place during the subsequent local adaptation planning process.
126. As technology and knowledge improve, the risk assessment process should be flexible enough to adjust the level of detail in risk assessments. It should also allow for new methods of data collection and assessment.
127. Risk assessments need to be reviewed periodically as our information improves and the world around us continues to change.

#### **Question 13**

How many stages do you think are needed for risk assessment and what scale is appropriate for each of those stages?

#### **Question 14**

How frequently should a risk assessment be reviewed?

### **Categorising a risk as tolerable or intolerable**

128. Once we have identified the risks and the impact of that risk, we must understand if we are willing to tolerate (accept) the consequences. Categorising a risk as tolerable or intolerable will affect whether it is prioritised for local adaptation planning or not, and the type of actions that are considered. Two key considerations when determining whether a risk is tolerable are:
  - the impact of the risk over different time periods (some impacts may not be great over a 10-year period but could be extreme over a longer time horizon, such as 50 years)
  - what is being impacted and to what extent (such as harm to people, damage to property and damage to ecosystems).
129. Standardising our approach to categorising risks as tolerable or intolerable will help improve the accuracy of risk assessments and make it easier for communities to understand when a risk reaches a threshold that triggers action.

#### **Question 15**

What do you think makes a risk tolerable or intolerable (ie, acceptable or unacceptable)?

### **Roles and responsibilities for risk assessments**

130. Councils currently have the primary responsibility for risk assessment under the Resource Management Act 1991. Others could potentially have a role in risk assessment, for example:
  - councils – to reflect their existing role and draw on in-depth understanding of risks in the region, district or city

- regional planning committees – to reflect their responsibilities under new resource management legislation for regional spatial strategies and natural and built environment plans (see appendix A)
  - iwi, hapū and Māori – to draw on local mātauranga and create space for te Tiriti partnership
  - independent expert panels including mātauranga Māori expertise – to ensure a wide range of expertise and independence
  - central government agency – to provide national consistency and build on central government responsibilities for emergency management and recovery.
131. Changes to the current approach to roles and responsibilities might require legislation if, for example, a central government agency was to be responsible for carrying out risk assessments.
132. When determining roles and responsibilities for risk assessment, we must consider the following:
- access to relevant data and information (including local knowledge)
  - capability and capacity
  - roles should not be duplicated and there should be coordination across agencies and organisations with existing responsibilities for assessing risk for different purposes
  - ability to provide robust, transparent and trusted assessments
  - working with mana whenua to incorporate te ao and mātauranga Māori and uphold the principles of te Tiriti.
133. With respect to the last point, a continuously improving process of collaborating with Māori to gain new insights and develop solutions will provide an opportunity to weave Māori and Western knowledge systems together, align with kaupapa Māori research and core values, and enable iwi, hapū and Māori to play an active role in adaptation.
134. Incorporating a Māori worldview enables a holistic assessment that considers the impacts on people’s health, livelihoods and taonga. It also includes, but is not limited to, wāhi tapū and cultural infrastructure, such as marae, significant historical sites and mahinga kai.

### Question 16

Do you think local risk assessments should be carried out or reviewed by a centralised agency or a local organisation? Why?

### Question 17

Should risk assessments be carried out only by technical experts or should other people also have a role? What role should other people and organisations have?

## **Te Tiriti-based approach to risk assessment**

135. Chapter 3 sets out what a te Tiriti-based approach to adaptation might mean for risk assessment, including:
- incorporating te ao Māori and local mātauranga in risk assessments
  - using a kaupapa Māori framework
  - providing opportunities for iwi, hapū and Māori to have input and lead where appropriate.

# Chapter 5

## – Local adaptation planning

### Overview

This chapter focuses on:

- exploring how resource management reforms and work on national direction will improve the approach to local adaptation planning
- opportunities for central government to provide direction on local adaptation planning.

### Key points

- The Resource Management Act 1991 allows councils discretion in relation to the approach or extent to which they undertake local adaptation planning.
- There are already many good examples of local adaptation planning taking place across Aotearoa.
- Quality of local adaptation planning varies across the country due, in particular, to the problems with risk assessment outlined in chapter 4 and a lack of direction and tools from central government.
- There is an opportunity for the proposed inquiry into community-led retreat and adaptation funding to consider where central government direction could assist with local adaptation planning.
- Once we have developed our system for community-led retreat, we will also need to consider who will decide between retreat and other adaptation pathways and how they will decide.

## The need for local adaptation planning

136. Community involvement in local adaptation planning is crucial for successful adaptation. A local adaptation plan – with identified actions, resources and timeframes – is a way for communities to work together to reduce the risks posed by natural hazards.
137. Local adaptation planning is required where historic land-use planning has not foreseen, or taken account of, changes in weather patterns or landforms, and the natural hazard risks are now too high. In such cases, the community needs to adapt to reduce the risk.

## Current approach to local adaptation planning

138. At a national level, the first national adaptation plan sets out how we will adapt across the country.<sup>21</sup> The actions in the plan are intended to support councils to undertake planning for their communities.

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<sup>21</sup> See appendix A for more information on the first national adaptation plan.

139. Councils work hard with their available resources to manage the increasing risks to their communities. Under the Resource Management Act 1991, councils are required to control the use of land for the purposes of avoiding or mitigating natural hazard risks (known as land-use planning).<sup>22</sup> The extent to which councils impose controls on land use due to natural hazards depends on a variety of factors, including capacity, other priorities and concerns about legal challenge.
140. The Resource Management Act 1991 also allows councils discretion in relation to the approach or extent to which they undertake local adaptation planning. There are already many examples of local adaptation planning taking place across Aotearoa.

### South Dunedin – case study

South Dunedin is built on the flat area between Otago Harbour, the southern coastline and surrounding hill suburbs. It is home to about 13,500 people, 1,500 businesses and a range of critical city infrastructure. This former coastal wetland has been developed, filled in and reclaimed over time, creating an area that has become a basin with no natural outflows.

Over time, coastal erosion and high groundwater have impacted the community and the sea-level is estimated to have already risen about 20 centimetres over the past 100 years. In 2015, heavy rainfall exceeded the operating capacity of stormwater systems, which led to extensive flooding across South Dunedin. These heavy rainfall events are expected to increase in intensity and frequency in the future.

South Dunedin Future is a joint programme between the Dunedin City Council and Otago Regional Council to find ways to respond to climate change and flooding problems in the area. The vision is for improved community wellbeing and resilience through sustainable urban regeneration. The councils intend to develop an adaptation strategy for South Dunedin by the end of 2026.

This programme has a dual focus on technical work and community engagement. It seeks to better understand the risks posed to South Dunedin now and in the future, assess the impact on local communities and collaborate to identify options for adapting to the effects of climate change.

## Issues with the current approach

141. Many councils have examples of local adaptation planning underway, but these vary in quality and comprehensiveness across the country because:
  - as outlined in chapter 4, there are problems with identifying and prioritising the risks that need to be addressed (including data quality and availability as well as uncertainties around predicting future impacts)
  - there are no nationally consistent standards or direction for local adaptation planning
  - as there is no central government direction to prioritise adaptation planning, councils may focus resources on other planning priorities

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<sup>22</sup> The Resource Management Act 1991 gives councils functions in relation to the management of natural hazards. In addition, the Act requires decision-makers to recognise and provide for the management of significant risks from natural hazards and pay particular regard to the effects of climate change.

- some of the tools councils need from central government are not in place, such as a comprehensive system for community-led retreat
  - councils face a number of affordability challenges and an increasing number of functions, meaning that comprehensive local adaptation planning can be difficult to resource
  - adaptation requires changes to places that matter to us and in which we have invested ourselves, making consensus difficult to achieve, particularly in advance of a disaster.
142. There has also been long-term under-investment in enabling Māori-led climate change adaptation, including local adaptation planning.

## Work to reform resource management law will improve outcomes

### Role of regional spatial strategies

The Spatial Planning Bill requires regions to prepare regional spatial strategies – documents that will set out a vision and objectives to guide a region’s development accompanied by a set of priority actions.

Where needed, regional spatial strategies will identify:

- risks arising from natural hazards and the effects of climate change
- areas that are or will be vulnerable to those risks
- locations for infrastructure or land-use change that would reduce those risks or increase resilience.

143. As noted in earlier chapters, the resource management system is undergoing reform (see appendix A). In particular, the Resource Management Act 1991 will be replaced by the Natural and Built Environment Act and Spatial Planning Act.
144. New resource management legislation will introduce a stronger focus on addressing the risks posed by natural hazards. In particular, the Natural and Built Environment Bill includes a new system outcome that the risks arising from natural hazards and the effects of climate change are reduced and other measures are taken to achieve an environment that is more resilient to those risks. Plans under this new legislation (natural and built environment plans and regional spatial strategies) will need to reflect this outcome.
145. As discussed in chapter 4, work is also now progressing on national direction on a Natural Hazard Planning Framework under existing resource management legislation (which would later be incorporated into the National Planning Framework under the new resource management system). This framework will cover both risk assessment and resource management land-use planning.
146. There is an opportunity for the proposed inquiry into community-led retreat and adaptation funding to identify desirable features of local adaptation planning that could potentially be included in the proposed Natural Hazards Planning Framework.



## Opportunities for strengthening local adaptation planning

147. There are opportunities for strengthening local adaptation planning to address the issues outlined above, including:
- requiring councils to undertake local adaptation planning
  - providing central government direction on the local adaptation planning process
  - requiring the local adaptation planning process to be responsive
  - establishing core requirements for community engagement
  - further consideration of who makes decisions on adaptation pathways and actions (including community-led retreat) and how they are made.
148. Some improvements could potentially be made through the proposed Natural Hazards Planning Framework under resource management legislation. It could also be necessary to include some elements in the proposed Climate Change Adaptation Bill.
149. Any changes will need to work well with existing and future plans and planning processes, including those relating to the resource management system and our emergency management system.

### Requiring councils to undertake local adaptation planning

150. At present, local adaptation planning is undertaken on a discretionary basis. New resource management legislation will introduce a stronger focus on addressing the risks posed by natural hazards. There is also an opportunity for the Natural Hazards Planning Framework to include a requirement to undertake local adaptation planning. For example, this requirement could be triggered when a certain level of risk has been met. This direction could be implemented through work on the Natural Hazards Planning Framework or the Climate Change Adaptation Bill.

#### Question 18

Do you think there should be a requirement to undertake local adaptation planning? If so, should the trigger be based on the level of risk or something else?

### Providing central government direction on the local adaptation planning process

151. A nationally consistent approach to the local adaptation planning process could help to improve the quality and consistency of plans. Central government could provide direction on:
- the development of local adaptation planning outcomes and objectives
  - risk assessment, including prioritisation (as outlined in chapter 4)
  - adaptation actions that must be considered for a given type and level of risk (taking account of land use)
  - a nationally consistent approach to estimating the benefits and costs of different adaptation pathways, contrasted with the benefits and costs of not acting

- consideration of frameworks like the Rauora Framework<sup>23</sup> and Treasury’s He Ara Waiora Framework<sup>24</sup> to support consideration of intergenerational and other outcomes
  - how to proceed when roles and responsibilities for adaptation planning overlap between different councils or between councils and iwi, hapū and Māori communities
  - the form that local adaptation planning must take (for example, whether it should be included in an existing plan or a dedicated local adaptation plan).
152. There is a trade-off between using national direction to set standards and lift quality while providing flexibility. We need to find the right balance between setting national standards and allowing communities to develop an approach that suits their needs. We will also need to ensure local adaptation and emergency planning (including regional responses and lifelines plans) are well integrated.
153. Finally, changes to council planning functions may have an impact on resourcing. Adaptation funding across all areas of the adaptation process (including planning) is considered in chapter 7.

### Question 19

What direction should central government provide on the local adaptation planning process?

## Requiring the local adaptation planning process to be responsive

154. Councils need to plan for unexpected changes during the life of a local adaptation plan, such as a change in the level of risk or a disaster. Guidance on this dynamic type of planning is currently provided by the National Emergency Management Agency to guide the development of Civil Defence Emergency Management Group plans. This type of planning can include concepts such as triggers (the point at which a particular action will be needed) and tipping points (the point at which one action should be changed for another).
155. The Expert Working Group on Managed Retreat proposed that local adaptation plans include a pre-disaster recovery plan to address recovery if a disaster occurs before the adaptation plan is implemented. This could include the changes to actions that might be needed after a disaster to ensure that communities adapt well to new circumstances. Chapter 8 considers in more detail how we can adapt through recovery.

### Question 20

Do you think there should be a requirement to plan for different scenarios, such as changes in the level of risk or what happens if there is a disaster? Why or why not?

<sup>23</sup> Ihirangi, National Iwi Chairs Forum. 2021. *Insight to the Rauora Indigenous Worldview Framework for the National Climate Change Adaptation Plan*. Retrieved 25 July 2023.

<sup>24</sup> Te Tai Ōhanga|The Treasury 2021. *He Ara Waiora*. Retrieved 25 July 2023.

## Establishing core requirements for community engagement

156. Community involvement in adaptation planning is crucial for successful adaptation. The range of adaptation options considered through a local adaptation planning process will be different for each community and may change with time. A local adaptation plan, with identified actions, resources and timeframes, will allow communities to work together over time to reduce risk.
157. There is no nationally consistent process that councils can use to engage communities on local adaptation planning, despite the potentially significant implications of adaptation actions (including community-led retreat).
158. A nationally consistent approach could be developed to establish some core requirements for community engagement, while still enabling some flexibility, as follows:
  - providing for early engagement, so that people understand their role, how they are able to participate and how decisions will be made
  - providing for how the impacted community is identified
  - establishing measures that support a more inclusive approach, including identifying vulnerable population groups and individuals who may have specific needs, as well as addressing accessibility, language and communication barriers
  - establishing measures that ensure the right level of expertise is incorporated at all stages of the planning process, including industry bodies, technical bodies and local mātauranga Māori expertise.

### Question 21

How can we make sure that local adaptation planning is inclusive and draws on community views?

## Making decisions on adaptation

159. A local adaptation planning process should consider different adaptation options. Options could include preventing, avoiding, retreating from or accommodating risks. Decisions will need to be made on which option, or package of options, to implement.
160. The following chapter considers the options for establishing an enduring and comprehensive system for community-led retreat. Once we decide on our system for community-led retreat, we will need to consider who will make decisions between retreat and adaptation pathways, how they will do this and who they will involve.

## How decisions are currently made

### Local government in New Zealand

Local government comprises:

- territorial authorities (city and district councils)
- regional councils
- unitary authorities (combined city/district and regional councils)

Territorial authorities are responsible for smaller areas than regional councils, and functions include regulating land use and providing water and roading services. Regional councils are responsible for larger areas and functions include environmental management, biosecurity and water quality. Both have responsibilities for managing natural resources.

161. Councils currently have the primary responsibility for making decisions on how to adapt to natural hazard risks. They have powers to take adaptation actions to support avoidance, accommodation and prevention, but do not yet have the range of powers required to support retreat.
162. Natural hazard risks can also cross council boundaries, requiring multi-council collaboration. There are also overlaps in the functional responsibilities between city and district councils and regional councils.
163. Retreat tends to be something which happens after a disaster, and the responsibility for decisions may be shared or established on a case-by-case basis with dedicated legislation (such as the Canterbury Earthquake Recovery Act 2011).
164. Councils are required to undertake community consultation on significant decisions and to develop policies that set out how the significance of a decision will be determined. The level of consultation required depends on the significance of the decision.

## How decisions could be made in the future

### Key considerations for decision-making

- Who makes decisions?
- Who can exercise powers?
- What collaboration and engagement is required before decisions are made and powers exercised?
- Are there any rights of delegation?
- Are there any Ministerial call-in powers (the ability for a Minister to exercise another decision-maker's power)?
- Is there the right to obtain independent technical advice?
- What are the appeal and review processes?

165. There is a need for a nationally consistent framework for decision-making which allows for some local flexibility. Councils; central government; iwi, hapū and Māori; communities; businesses and individuals all have a role to play and this should be reflected in the decision-making process.

166. Some of the core design elements for a decision-making framework could be:
- using the same decision-makers across all adaptation actions
  - connecting decisions on funding to decisions on how to act
  - closely involving affected individuals and communities in the process, including on an individual basis as well as establishing community panels to provide advice
  - recognising that Māori should make decisions for their whenua and taonga katoa (rangatiratanga), and recognising the protections and decision-making processes established under Te Ture Whenua Māori Land Act 1993
  - incorporating te ao Māori and local mātauranga Māori
  - allowing for oversight of decisions, particularly involving retreat
  - including a call-in power for the responsible Minister in certain circumstances, such as when the relevant decision-maker is unable or unwilling to discharge their functions
  - using independent decision-makers to consider requests to withdraw services as part of a retreat process (discussed further in chapter 6)
  - ensuring that the needs and views of all members of a community are considered and decisions are not unduly influenced by any one group.
167. New decision-making processes that reflect the elements above may require new institutional arrangements to be effective and efficient. This could include strengthening and reconfiguring central government institutions as well as making changes at the local level.

### Question 22

Who do you think should make decisions about the adaptation pathway we choose and why?  
How should others be involved in the process?

## Te Tiriti-based approach to local adaptation planning

168. Chapter 3 sets out what a te Tiriti-based approach to adaptation might mean for local adaptation planning, including:
- involving iwi, hapū, Māori landowners and Māori communities, as they choose, throughout the planning process
  - creating space for rangatiratanga and partnership with the Crown
  - providing access to relevant information
  - embedding te ao Māori and local mātauranga Māori in the processes
  - using a kaupapa Māori framework
  - providing a process for navigating overlapping interests.

# Chapter 6

## – Community-led retreat

### Overview

This chapter focuses on:

- core options for a community-led retreat system
- powers to enable community-led retreat.

### Key points

- We do not have an enduring and comprehensive system for community-led retreat.
- As risks increase, we may see the disorganised withdrawal of affected people, businesses and services.
- The resulting hardship is likely to be severe, and vulnerable individuals and groups may be particularly affected.
- We need to develop a system for retreat governed by legislation containing all necessary powers.
- Option 1 is a purely voluntary system.
- Option 2 (recommended by the Expert Working Group on Managed Retreat) is a mix of voluntary and compulsory parts.
- For both options, new powers will be required relating to the ownership, control and acquisition of land, as well as other supporting powers.

## The current approach to retreat

169. No enduring and comprehensive system currently exists to support community-led retreat. This means that to help people at imminent risk from an eroding coastline and flooding councils must rely on an unsatisfactory patchwork of powers, including:<sup>25</sup>
- voluntary buyouts (on a willing buyer, willing seller basis) using general powers under the Local Government Act 2002
  - changes in land use under provisions in the Resource Management Act 1991.
170. On a small scale, this has enabled people to retreat from some at-risk areas. However, both the Expert Working Group on Managed Retreat and Environmental Defence Society found that these tools do not (and are not intended to) allow for the effective implementation of retreat.<sup>26</sup>

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<sup>25</sup> Note that the Public Works Act 1981 provides powers for acquisition by agreement and compulsory acquisition. However, as noted by the Expert Working Group, the definition of a “public work” in the Public Works Act does not allow for a ‘retreat’. See also Peart R, Tombs BD. 2023. *Aotearoa New Zealand’s Climate Change Adaptation Act: Building a Durable Future – Current Legislative and Policy Framework for Managed Relocation: Working Paper 2*. Auckland: Environmental Defence Society.

<sup>26</sup> Peart R, Tombs BD. 2023. *Aotearoa New Zealand’s Climate Change Adaptation Act: Building a Durable Future – Current Legislative and Policy Framework for Managed Relocation: Working Paper 2*. Auckland: Environmental Defence Society.

171. New resource management legislation is not intended to address this gap (although clause 26 of the Natural and Built Environment Bill enables changes to existing uses which will improve the current approach).<sup>27</sup> The Randerson Report recommended a dedicated third piece of legislation, the Climate Change Adaptation Bill, to establish the system for retreat. The Expert Working Group also considered that proposed changes in resource management legislation will not be sufficient to implement retreat.
172. In the absence of an enduring and comprehensive system for retreat, some retreat-like processes have been developed under dedicated legislation. For example, the Canterbury Earthquake Recovery Act 2011 and Greater Christchurch Regeneration Act 2016, which supported retreat from residential red zones in Christchurch, following the Canterbury earthquakes.
173. Without an enduring and comprehensive system for retreat, we can expect to see more one-off processes developed to support retreat after future disasters.

### Matatā – case study

Matatā is a rural coastal community in the Bay of Plenty with a small population. In May 2005, debris flows and flooding from extreme rainfall cut transport links and led to the loss of 27 homes, as well as damage to 87 properties.

The council initially supported the rebuild of the community. However, a hazard and risk assessment commissioned by the council later found that there was a high risk of loss of life in the future. As a result, the Awatarariki Voluntary Managed Retreat Programme was initiated in 2016 to support retreat from some areas of the community. Councils and central government collaborated to fund the voluntary buyout of eligible properties. Plan changes also meant that residential activities would not be able to continue. Some residents wanted to stay and opposed both the managed retreat programme and the associated plan changes.

## Problems with the current approach

174. There are three key problems with the current approach. First, waiting to retreat until after a disaster increases risks to communities. Communities need to be able to manage their safety by making proactive choices about whether and when to retreat.
175. Second, the financial precedents set through continual one-off processes for retreat may become unsustainable. The more that one-off processes for retreat are developed, the more communities will expect these processes to apply to them in the future (even if this is unintended). Using different approaches for different communities in similar circumstances would also raise equity concerns.
176. Third, disorganised retreat is likely to reduce wellbeing. Disorganised retreat refers to the haphazard withdrawal of affected individuals, households, businesses, banking and insurance sectors and service providers. For example, research for the Deep South Science Challenge in 2020 projected that around 10,000 houses in Auckland, Wellington, Christchurch and Dunedin could become uninsurable by 2050 because of coastal flooding from sea-level rise.

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<sup>27</sup> See appendix A for more information about resource management reform.



## Explanation of unmanaged relocation by the Expert Working Group on Managed Retreat

... unmanaged relocation is a spontaneous, uncontrolled process initiated by people in an 'at-risk' area who decide that the time has come to move out of harm's way. The risk tolerance of whānau and individuals may, of course, vary markedly, so in an unmanaged relocation, some may choose not to move. Others may be unable to move, even if they want to, because of insufficient resources. Whatever the reason, for those who are left, an unhappy spiral is likely to result. As risks increase over time, insurers begin to charge higher premiums or to withdraw from insuring in the locality altogether; property values fall; businesses close; good quality rental accommodation becomes unavailable; remaining homeowners find themselves with mortgage or other debt they cannot meet; services decline, either because of ongoing maintenance problems or because their providers withdraw them; and overall, those remaining become highly vulnerable – in a state of 'property purgatory'.

## What should a retreat system aim to achieve?

177. The Expert Working Group on Managed Retreat recommended a retreat system governed by overarching legislation containing all necessary powers. The first step in designing a system for retreat is to develop and agree on the values that will guide the design of the system.
178. In 2022, the Government consulted on objectives and principles for retreat. We have made revisions based on feedback from consultation as well as the report of the Expert Working Group on Managed Retreat. The outcomes and principles below could potentially guide the development of a system for community-led retreat.<sup>28</sup>

**Table 7: Potential outcomes and principles for a community-led retreat system**

| Outcomes   | Principles  |
|--|---|
| Increase physical and psychological safety                   | Ensure processes are fair, flexible, efficient, timely and transparent  |
| Ensure roles and responsibilities are clear                  | Ensure decisions are evidence-based, accepting there will be some uncertainty   |
| Ensure access to the range of powers needed to retreat       | Minimise perverse incentives (such as the potential incentive for decision-makers to defer hard decisions to other decision-makers)           |
| Ensure equity between and within communities and generations | Ensure that the circumstances are clear in which decision-makers are or are not legally liable  |
| Give effect to the principles of te Tiriti                   | Involve communities in decisions that affect them   |
|  | Ensure iwi, hapū and Māori are represented in governance and partner with the Crown on retreat processes and outcomes for iwi, hapū and Māori |

### Question 23

What do you think are the most important outcomes and principles for community-led retreat?

<sup>28</sup> Potential outcomes and principles for funding across all adaptation actions are set out in chapter 7.

## Options for a retreat system

179. There are a number of approaches we could take to designing a system for retreat. These depend on the mix of voluntary and mandatory parts; the extent to which ownership, control and use of land changes; and what compensation and financial assistance is available (this last point is considered in chapter 7).
180. The following two options are considered in this chapter:
  - option 1: a purely voluntary system
  - option 2: a system that contains a mix of voluntary and mandatory parts.
181. A purely mandatory system was considered but is not discussed here because it would impact too much on people's autonomy. It also would not allow people to make choices at times that suit them.

### Option 1: A purely voluntary system

182. A purely voluntary system would leave the choice of whether to retreat to the people affected. Decision-makers would still identify the risks for that area and the types of support available to people who chose to retreat. Where there are offers of compensation or other financial assistance, they may expire after a period of time, as they did for voluntary buyouts in the Christchurch red zone following the Canterbury earthquakes.
183. This option would allow people to make their own decisions based on their personal views of the risks they face. This would support autonomy and recognise the importance of the connections people feel to their homes.
184. This option, however, presents a number of problems. Most importantly, it would be less likely to reduce risk. If people stay, the risk will remain. Other potential disadvantages include:
  - ratepayers and taxpayers continue to meet the cost of providing services to a smaller number of people
  - places are less safe for people remaining behind and those visiting them
  - community wellbeing declines as communities become fragmented
  - vulnerable people are drawn to these locations due to lower house prices and rent
  - risks and costs increase when saving people in an emergency
  - decision-makers are heavily criticised and held responsible after a disaster for allowing people to remain in risky areas.
185. A completely voluntary system could also lead to greater pressure on decision-makers to choose protective mechanisms (that may only be temporary) over retreat. People could also be incentivised to stay in place if they think a more generous financial assistance offer might be made after a disaster. When people choose to remain in place, they will be unlikely to bear the full cost of that decision.

## Option 2: A system with voluntary and mandatory parts

186. The Expert Working Group on Managed Retreat recommended that at the end of a retreat process the affected land should no longer be used. The group considered there could be some limited exceptions for things like ceremonial events, recreation, some agricultural or horticultural uses and mahinga kai gathering. However, the group made it clear that people should not be able to choose to stay once the retreat process ends. This is intended to ensure that risk is properly reduced.
187. The Expert Working Group suggested that designing the right mix of voluntary and mandatory parts should be guided by the principle that those affected should have as much choice as possible during the retreat process that is consistent with the efficient and effective implementation of the retreat. Choice would likely be limited to when to leave (and potentially, how) rather than whether to leave.

### Question 24

Do you prefer option 1 (voluntary) or option 2 (a mix of voluntary and mandatory parts)? Are there any other options?

### Question 25

Do you agree that affected land should no longer be used at the end of a retreat process (with limited exceptions for things like ceremonial events, recreation, some agricultural or horticultural uses and mahinga kai gathering)? Why or why not?

### Question 26

Do you think there should be any other exceptions? If so, what, and why?

## Powers to ensure land is no longer used

188. Powers to ensure land is no longer used would be needed to enable both options 1 and 2. For option 1 they would apply only to land acquired on a voluntary basis. For option 2, they would apply to all land.
189. The following new powers would be needed to enable both options:

**Table 8: Powers to ensure land is no longer used**

| Power   | Reason   |
|---|--|
| <b>Enhanced land-use controls</b>                   | Land-use rules control the way people use land (eg, preventing residential development).<br>Greater powers are needed to manage the way people use their land during a retreat. For example, preventing people from rebuilding after a disaster. |
| <b>Stronger powers to acquire land by agreement</b> | Stronger powers are needed to ensure there is a clear process for the voluntary transfer of land.  |

190. Option 2 would need to be further supported by a power that supports the compulsory acquisition of land or a power to retire land by cancelling its title.
191. These powers may not be exercised often, but they are a necessary part of an effective retreat system.
192. Compulsory acquisition or retirement of land would need to be accompanied by compensation or other financial support (see chapter 7).

193. As noted in chapter three, retreat should not affect ownership of Māori land, but measures may be needed to ensure risks are reduced.

### Question 27

Do you agree that these powers are needed to ensure land is no longer used once a decision has been made to retreat? What powers do you consider are needed?

## Other powers to enable retreat

194. The following additional powers are required to effectively enable retreat under both options 1 and 2:
- withdrawal of services
  - protection from potential liability
  - intervention in other systems.

### Withdrawal of services

#### Water services

Councils must provide water services. There is a limited power to close ‘small water services’ but only following a referendum that receives the support of 75 per cent of those eligible to vote. The Expert Working Group on Managed Retreat observed that this continuing obligation to supply water is an issue following the Canterbury earthquakes, as Red Zone residents who chose to remain are entitled to the benefit of the council’s continuing obligation to supply them with water, at considerable expense to ratepayers.

#### Power services

Electricity distributors cannot generally cease to supply line function services to consumers. Cessation is allowed in limited circumstances, including after a fire or earthquake, but may only continue so long as the reason for cessation continues.

195. Services to communities include roads and bridges; storm, waste and drinking water; electricity; and telecommunications. Service providers generally have obligations to continue to supply services and very limited powers to withdraw services.
196. Repairing or maintaining services may no longer be necessary or affordable after a disaster or where they have a limited lifespan. The withdrawal of services is therefore a necessary part of the decision to retreat.
197. We have identified two options:
- option A: a plan for the withdrawal of services is included in a retreat plan
  - option B: services providers can make a request to an independent decision-maker to withdraw services.
198. Both options might be needed, given that plans may need to change following a disaster. Ultimately, people will need to understand when services will be withdrawn and have time to adjust.

## Question 28

What do you think the threshold or trigger should be for withdrawing services once a decision has been made to retreat?

### Protection from potential liability

199. Liability can be an important incentive to make decisions in good faith and with care. However, decision-makers may need some protection from potential liability for making decisions to retreat and about how to retreat (for example, decisions on the planned withdrawal of services). If so, without some protection from liability, decision-makers may make no decisions or place too much weight on the desire to avoid litigation. This could result in the failure to take action to reduce risk to communities.
200. In the event that protection from liability may be needed, below are two examples of options for reducing liability.

**Table 9: Possible options for reducing liability**

| Options  | Explanation   |
|--|---|
| <b>Option A</b><br>Exclusion from all liability where decision-makers act in good faith  | This is a broader exclusion.<br>For example, decision-makers are not liable for: <ul style="list-style-type: none"><li>• negligence (a failure to take reasonable care)</li><li>• harm arising from a failure to consider whether retreat is necessary (eg, where information suggested it might be).</li></ul>   |
| <b>Option B</b><br>Exclusion from all liability where decisions-makers act in good faith, except in circumstances of failure to act or misfeasance (the performance of a lawful action in an illegal or improper manner) | This is a narrower exclusion.<br>For example, decision-makers: <ul style="list-style-type: none"><li>• are not liable for negligence</li><li>• are liable for harm arising from a failure to consider whether retreat is necessary (eg, where information suggested it might be)</li><li>• are liable for harm arising from an unlawful service withdrawal (misfeasance).</li></ul> |

201. We may also need to consider whether liability provisions should apply across all adaptation decisions, or just to community-led retreat decisions.

## Question 29

In what circumstances, if any, do you think decision-makers should be protected from liability? What are your views on option A, option B or any other possible option?

### Intervention in other systems

202. As part of designing a system for retreat, we will need to consider how powers in the retreat system overlap with other systems and how to resolve conflicts. For example, when land is sold, powers to override the provisions of private trusts or other contractual agreements may be necessary (such as an option to purchase or right of first refusal given to a third party).

203. Potential overlaps include:

- sale, gifts and succession
- mortgage and insurance contracts
- relationship property disputes
- non-possessory and other interests in land or property (eg, easements and leases)
- land use and consenting.

## **Te Tiriti-based approach to community-led retreat**

204. Chapter 3 sets out what a te Tiriti-based approach to adaptation might mean for community-led retreat, including:

- determining the approach in partnership with iwi, hapū and Māori at place
- taking account of a number of key considerations
- not affecting ownership of Māori land, but developing measures to ensure risks are reduced
- addressing any impacts on Treaty settlement land on a case-by-case basis through agreements between post-settlement governance entities and the Crown
- using the Māori Climate Platform to help support iwi, hapū and Māori to engage in a system for community-led retreat.

# Chapter 7

## – Funding and financing

### Overview

This chapter focuses on:

- describing the current approach to funding adaptation
- what might need to change, including how adaptation costs might be shared in the future.

### Key points

- The PARA framework (prevent, avoid, retreat, accommodate) explains the types of actions people might take to adapt – each action has costs.
- Some of the responsibilities for meeting adaptation costs are set out in legislation and others have evolved as a matter of practice.
- Individuals, households, businesses, councils and central government are responsible for managing risks to assets that they own.
- The current approach leads to challenges with affordability, uncertainty about central government’s approach, reduced incentives to adapt, investment decisions made under urgency, inadequate information to support decisions and a potentially narrow view of the benefits of adaptation actions.
- Ultimately, some individuals, households, businesses and councils may lack the resources to take the best adaptation actions for their situations.
- A core question is whether and under what circumstances central government should provide additional support for adaptation (including retreat).
- Should central government decide to provide funding, it may be helpful to signal in advance what costs it will prioritise.
- Initial priority areas could include property-level retreat funding; home resilience funding; flood protection; and a dedicated fund for iwi, hapū and Māori.

## Introduction

205. This chapter considers our current approach to funding adaptation and how we might change it to improve outcomes. In doing so, we must keep in mind that the need to fund adaptation can be reduced by:
- identifying and communicating risks well, so that people have a clear understanding of risks before they build or buy property in higher-risk locations (see chapter 4)
  - establishing appropriate rules to ensure we build in places and ways that reduce the need for adaptation in the future (outside the scope of this paper).
206. We must also make sure changes in the way adaptation is funded do not increase incentives for people and organisations to fail to adapt now.



# The current approach to adaptation funding

207. This chapter considers funding for all types of adaptation actions, including retreat.

## What are adaptation actions?

208. As discussed in chapter 1, the PARA framework (prevent, avoid, retreat, accommodate) is used internationally to explain the types of actions people might take to adapt.

- **Prevent:** actions might include building sea walls, stopbanks along rivers and firebreaks to prevent wildfires from spreading.
- **Avoid:** actions might include providing information, restricting land use or developing new community infrastructure so that people choose to build in safer areas.
- **Retreat:** actions might include removing buildings and relocating them elsewhere.
- **Accommodate:** actions might include raising floors in buildings in areas that flood.

## What are the costs of adaptation actions?

209. Each action will have its own set of costs. For example, to build a sea wall, a planning process will be needed. This will include risk assessment, engagement, decision-making, and implementation (delivery, monitoring and review).

210. The PARA framework describes the costs of taking preventative action to mitigate risks, which is separate from disaster recovery costs. However, both types of cost are related because the more we spend collectively on proactive adaptation, the less we will need to spend collectively on recovery.

## Who is currently responsible for paying for adaptation?

211. Adaptation is not a new activity. The current approach to funding adaptation has evolved based on a mixture of common practice and legislative responsibilities, though the relevant laws relate to natural hazard management (rather than adaptation specifically).<sup>29</sup> The table below describes current roles and responsibilities for paying for adaptation.

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<sup>29</sup> For example, 101B(3)(e) of the Local Government Act 2002 requires councils when preparing their 30-year infrastructure strategies to take into account the need to "provide for the resilience of infrastructure assets by identifying and managing risks relating to natural hazards and by making appropriate financial provision for those risks" as they outline how they intend to manage their infrastructure assets over that period. It does not reference adaptation specifically, however, or set out broader adaptation responsibilities. Other relevant responsibilities exist in the Resource Management Act 1991, the Civil Defence Emergency Management Act 2002 and the National Civil Defence Emergency Management Plan 2015.

**Table 10 Current roles and responsibilities for paying for adaptation**

| Actor   | Current statutory or assumed roles and responsibilities   |
|---|---|
| <b>Individuals, households and businesses</b> | <ul style="list-style-type: none"> <li>• Responsible for protecting their assets from risk, including through purchasing insurance</li> <li>• Insurers provide a service to transfer some of the natural hazard risk that otherwise falls on asset owners and renters. Insurance coverage across Aotearoa is high, but some people do not have insurance, particularly in vulnerable communities</li> <li>• Banks have an interest in helping those with mortgages to protect their assets from risk and sometimes provide lending that is used for adaptation</li> </ul> |
| <b>Councils</b>                               | <ul style="list-style-type: none"> <li>• Adaptation planning (including risk assessment and engagement)</li> <li>• Local adaptation actions, such as:               <ul style="list-style-type: none"> <li>– building and maintaining infrastructure</li> <li>– nature-based solutions, such as wetland restoration</li> <li>– certain adaptation costs during recoveries (shared role with central government)</li> <li>– pre-disaster retreat on a small scale</li> <li>– at times, post-disaster retreat (shared role with central government)</li> </ul> </li> </ul>  |
| <b>Central government</b>                     | <ul style="list-style-type: none"> <li>• Building and maintaining certain infrastructure (such as state highways)</li> <li>• Certain local adaptation actions on an ad hoc basis</li> <li>• Certain adaptation costs during recoveries (shared role with councils)</li> <li>• Post-disaster relief, which has sometimes included acquiring properties (shared role with councils)</li> </ul>  |

212. Appendix C describes the costs in more detail, including who pays and who (primarily) benefits.

### **Banks and insurers**

Better information and increasing risks posed by natural hazards will result in changes to banking and insurance products, which will affect some people in high-risk areas. Banks and insurers react to natural hazard risks, and their decisions can impact on markets if they decide:

- not to insure properties in high-risk areas
- to increase premiums or limit coverage for insurance policies for properties in high-risk areas
- to offer higher cost lending or deciding not to offer lending on riskier properties
- to withdraw mortgages if insurance cannot be obtained.

Banks and insurers want to encourage good risk management and their decisions can send clear signals about where risk exists. However, the measures they take to manage their own risks may raise costs for some of their customers.

In addition, banks and other lenders are entitled to the proceeds from a property’s sale for debt repayment. This means that if central government were to provide funding for retreat, mortgage repayment could leave owners with little leftover money or even residual debt. That would undermine the intent of any government retreat scheme to reduce hardship.

## International examples of adaptation funding arrangements

Internationally, adaptation remains a reasonably new area of focus. The majority of funding in most countries has come from central government, with some examples of a shared approach to meeting costs and making funding decisions.

- **The United States of America** has a history of state and central support for large-scale flood risk. A number of central government programmes, such as the Federal Emergency Management Agency (FEMA)'s Hazard Mitigation Grant Programme, Building Resilient Infrastructure and Communities programme, and Flood Mitigation Assistance Programmes fund up to 75 per cent of costs and require applicants to meet the remaining 25 per cent of total costs. There are additional allowances and assistance available for low-income groups and areas.
- **The Netherlands** runs the Delta Programme, with an accompanying Delta Fund that provides 1.5 billion euros annually (on average) between 2023–2036 for large infrastructure investments to protect against flooding and to maintain fresh water. The programme is administered jointly by the Ministry of Infrastructure and Water Management, together with dedicated regional water boards.
- The Federal Government of **Australia** has established a Disaster Ready Fund, providing up to 1 billion Australian dollars from 2023/2024 for natural disaster resilience and risk reduction across Australia. State and territory governments are expected to contribute 50 per cent towards the cost of projects, where possible. Similarly, under the Coastal Management Plan Assistance Program (CMPAP) in Western Australia, applicants are expected to contribute at least 50 per cent of the project costs. Grants are capped at \$200,000.
- In the **United Kingdom**, central government provides grant funding for flood risk management, but co-payments are required. Between 2015 and 2021 £2.7 billion in grants were accompanied by £600 million in co-payments. Councils have supplemented grant funding in some cases with other types of central government funding. Private sector funding has also been contributed in some cases.

## The principle of beneficiary pays underpins the current system

213. Broadly, the current approach to meeting the costs of adaptation is based on the principle of beneficiary pays. This means that those who benefit from risk management measures are the people who should pay for them.
214. All asset owners (individuals, households, businesses, councils and central government) have responsibility to manage risks to their assets. This approach:
  - encourages owners to invest in risk reduction
  - recognises that owners often have the best information and incentives to invest in risk reduction
  - aligns with a long-standing approach under common law and reflected in legislation, where risks to private property are generally met by the owner<sup>30</sup>
  - supports decisions being made at the most local level (the principle of subsidiarity).

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<sup>30</sup> This 'owner responsibility' model is reflected in the Building Act 2004, where owners are liable to fix dangerous, unsanitary or earthquake-prone buildings. It is also implicit in the Earthquake Commission Act 1993 and the Natural Hazards Insurance Act 2023.

## How is the approach to funding adaptation before a disaster different to funding recovery?

215. The approach to funding adaptation before a disaster is significantly different to funding recovery. Under the National Civil Defence Emergency Management Plan 2015, central government covers 60 per cent of the costs of repair of some essential council infrastructure after a disaster. The remaining 40 per cent is covered by councils.
216. In practice, central government has often contributed beyond these costs, notably in areas where there is less ability to pay on the part of private individuals, households, businesses or local councils. This may be through ad hoc business continuity support, cover for uninsured homeowners and tourism support.
217. There is no formula for sharing adaptation costs before a disaster.

### Westport – case study

Westport is facing challenges in adapting to flood risk. Severe floods in July 2021 and February 2022 caused widespread damage to homes and infrastructure. Similar events are likely to become more frequent and severe in the future unless the city takes steps to adapt. This has heightened community concerns about reducing the risk and protecting assets and livelihoods.

However, paying for adaptation and flood protection is challenging for the community. Many among the population have very low incomes as measured by the socio-economic deprivation index, which means that ratepayers in the area may not have the ability to meet the necessary costs.

Westport received \$17 million from central government in 2021 for temporary accommodation and \$13.6 million from the Government's Infrastructure Acceleration Fund in 2022 for transport and water infrastructure. In May 2023, Westport received a further \$22.9 million from central government for structural flood protection – that funding was ad hoc and not prescribed through a particular process. The funding will help to build the resilience of exposed property or neighbourhoods and facilitate development and growth in lower-risk areas.

## Problems with the current approach

218. The preceding chapters outline several problems with the way we are adapting as a country, which increase the risk of poor or inequitable adaptation, and some of the causes of those problems. Our current approach to funding adaptation is also contributing to these problems as outlined below.

### Affordability

219. Adaptation can be costly and is often an ongoing expense. Multiple reports have found that some councils and their residents are unable to meet all their adaptation costs.<sup>31</sup> Risk exposure and ability to pay varies widely between communities. Places with high-risk exposure and limited ability to raise revenue (for example, because of

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<sup>31</sup> See: Review into the Future for Local Government. 2023. *He piki tūranga, he piki kōtuku*. Wellington: Review into the Future for Local Government; Productivity Commission. 2019. *Local government funding and financing*. Wellington: Productivity Commission; and Department of Internal Affairs. 2022. *Report: Vulnerable Communities Exposed to Flood Hazard*. Wellington: Department of Internal Affairs.

low incomes, a high proportion of retirees or low population density) face significant affordability challenges.

220. This problem will likely grow over time if not addressed, as climate change causes risks to become more serious. Some communities will be able to protect themselves, but without support others will not. This is particularly so where complex or expensive approaches are needed, such as retreat or flood management infrastructure.
221. In addition, councils face broader affordability challenges. All councils are facing increasing responsibilities, changes in population and community expectations and a growing number of assets that are reaching the end of their life (and which require replacement).<sup>32</sup>

## Uncertainty

222. Central government contributions to local adaptation funding are generally decided on a case-by-case basis through the annual budget process. There is no dedicated framework for funding adaptation in different places and in different circumstances, over time. This creates uncertainty about central government's approach. In turn, this makes it difficult for communities to plan ahead with an understanding of how costs may be shared.
223. The Government has, however, recently announced a National Resilience Plan, which will invest \$6 billion in strategic investments to build back better from the recent weather events. This will include investments in road, rail, telecommunications and electricity transmission infrastructure. This will provide greater certainty for some areas of Aotearoa in the near to medium-term but will not provide long-term certainty nationwide.

## Incentives

224. Individuals, households, businesses and councils have incentives to adapt to improve resilience and avoid future losses. However, a partial understanding of risks (see chapter 4) and other barriers, such as high upfront costs, can reduce incentives to adapt.
225. For example, adaptation benefits both current and future generations. However, where the best long-term solution is significantly more expensive than temporary mitigating measures, communities can be incentivised to defer major investment and invest in short-term measures. In some cases, this could even increase long-term risk.<sup>33</sup>
226. In addition, there may be expectations among:
  - asset owners that councils and central government may underwrite losses after disasters
  - councils that central government will contribute funding to recovery and adaptation measures after a disaster.
227. Recent announcements that central government would provide voluntary buyout offers to owners of 'category three' homes in communities severely affected by Cyclone Gabrielle and the Auckland floods, may reinforce these expectations. Category three homes are those considered high risk or unsafe to live in.

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<sup>32</sup> Productivity Commission. 2019. *Local government funding and financing*. Wellington: Productivity Commission; Review into the Future for Local Government. 2023. *He piki tūranga, he piki kōtuku*. Wellington: Review into the Future for Local Government.

<sup>33</sup> For example, some small-scale flood mitigations can make large-scale flooding worse by trapping water where it breaches the flood defences.

## Investment decisions

228. Some councils are consulting on or have announced significant plans to adapt.<sup>34</sup> However, central government and councils may still be required to make major decisions under urgency, following a disaster. This urgency increases the risk of investing in the wrong actions or places because:
- money is primarily spent where disasters are most visible, rather than on places with greater need
  - long-term precedents may arguably be set before enduring outcomes and principles are agreed to guide those investments.
229. The more decisions are made pre-emptively, the fewer decisions will be made under urgency after events. Since pre-emptive actions can be taken in a well-considered, principled way, they will generally lead to better outcomes overall.

## Information

230. Chapter 4 explains the problems with the data and information used to identify risks and actions for responding to those risks, as well as improvements already underway and opportunities for further improvements. These problems with access to and quality of data and information also affect our ability to ensure that we fund the right adaptation actions.

## Benefits

231. The current system is largely premised on beneficiaries paying for adaptation measures. However, discussion of who benefits from adaptation measures, and how they benefit, can sometimes be narrow. This is because indirect benefits (sometimes described as ‘positive externalities’) can be overlooked. As shown in the box below, a range of people can benefit from adaptation measures and not all benefits relate strictly to reducing natural hazard risks – they can also enhance wellbeing or support environmental goals.
232. While it might be possible to negotiate across all the beneficiaries to share the costs in a way that truly represents beneficiary pays, this is likely to be a costly, case-by-case exercise that is impractical to extend across the country. A different approach to sharing costs might therefore be able to better reflect the beneficiary pays principle.

### Understanding who benefits from adaptation

**Example 1:** The houses on a flood-prone street all choose to raise their floor levels. This will benefit the homeowners in the case of a flood where damage is avoided. It also benefits councils (and therefore ratepayers), who will not need to meet damage-related costs and insurers who will not have to pay out because damage has been avoided. In this case, a large proportion of costs are likely to be met by homeowners, who are the most apparent – but not the only – beneficiaries of the adaptation measure.

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<sup>34</sup> Examples include councils in Westport, South Dunedin, Auckland and Marlborough.

**Example 2:** A new wetland is created in a coastal area. It reduces flood risk across the neighbourhood. This in turn reduces the impact of a severe rain event, which means councils and central government do not need to spend as much on recovery assistance. The new wetland also creates wellbeing and amenity benefits for the wider community and benefits at the national level through improved carbon retention and support for the country's indigenous biodiversity goals.

### Question 30

Which parts of the current system work well and which do not? Are there any other issues with our current approach to adaptation funding?

## What are the opportunities and risks of councils or central government meeting some adaptation costs?

233. Roles and responsibilities under the current funding approach are generally appropriate. In particular, asset owners should continue to be responsible for managing risks to their assets.
234. However, there may be situations where it is appropriate for councils or central government to help asset owners or others meet certain costs to address the problems outlined above. Likewise, there may be situations where it is appropriate for central government to help councils meet costs.

### Government funding could help to address existing problems

235. When considering whether or how government could help address the issues discussed above, regard could be had to the following matters:<sup>35</sup>
  - **Addressing affordability challenges:** assist those who cannot meet their own costs (including support for vulnerable people or councils that service small or low-income populations).
  - **Providing certainty around central government's long-term approach:** establish how central government will share costs and what its funding priorities will be.
  - **Incentivising good adaptation:** help with costs when this will encourage the best adaptation choices.
  - **Investing in the right actions and places:** develop a systematic and long-term approach to funding to ensure government invests in the best options and places that need it the most.
  - **Taking account of wider benefits:** share costs where actions to improve resilience benefit communities or the motu as a whole.

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<sup>35</sup> Note that opportunities to improve information are considered in chapter 4 rather than this chapter.



## Government funding can also lead to unintended outcomes

236. Providing government funding for adaptation may reduce the incentives for councils and asset owners to mitigate risks themselves. The potential benefits therefore need to be weighed against key risks.
237. First, there is a risk of artificially maintaining the property values of risky properties which will eventually need extra protection or from which we will need to retreat, such as those by the coast. This can incentivise new development and strong housing markets in those areas, which could increase the risk to life and long-term costs of adaptation.
238. Second, there is a risk of spending money on activities that asset owners might otherwise have paid for themselves. This could apply to property owners, councils or any others that would receive funding support. This can result in less funding available for other important areas of spending.
239. These risks are not unique to adaptation and apply to other forms of social support. Provided these risks are recognised, they may be addressed through effective governance and policies that balance how risks are shared.

## What should a funding approach aim to achieve?

240. The first step in improving our current funding approach is to develop and agree on the values that will guide the design of options.
241. In 2022, the Government consulted on funding objectives and principles. These have been revised based on feedback from consultation as well as the report of the Expert Working Group on Managed Retreat. The outcomes and principles below could potentially guide adaptation funding.

**Table 11: Potential outcomes and principles for funding adaptation**

| Outcomes  | Principles  |
|---|---|
| Reduce hardship   | Incentivise better decisions  |
| Ensure equity among communities and across generations            | Minimise perverse incentives (such as the failure to reduce risk due to the likelihood of receiving increased financial assistance) |
| Reduce long-term costs  | Prioritise supporting vulnerable individuals and groups, when the government intervenes   |
| Shift focus of investment from post-event to pre-event adaptation | Provide clarity and certainty about how costs, risks and responsibilities will be shared  |
| Give effect to the principles of te Tiriti                        | Ensure those who benefit contribute to costs  |

### Question 31

What do you think are the most important outcomes and principles for funding adaptation?

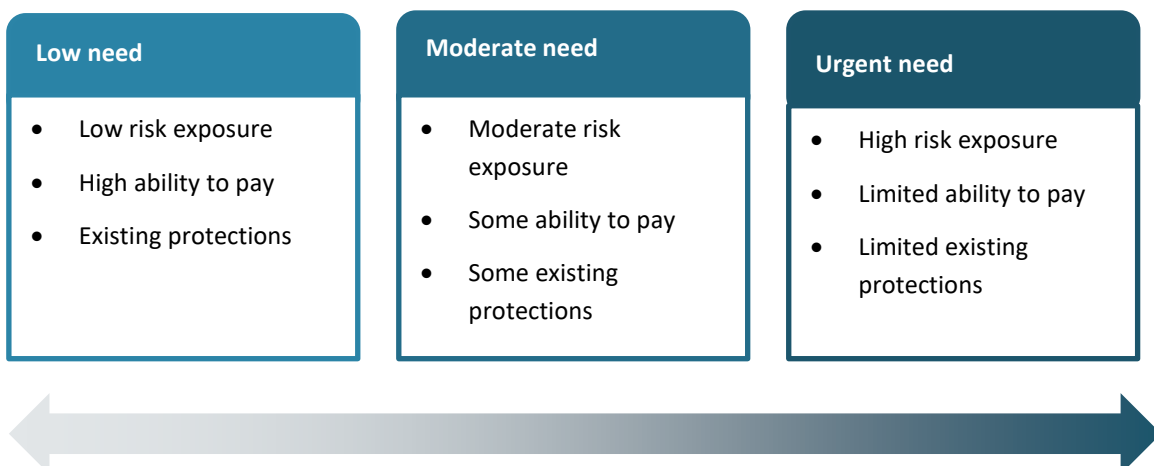
## When should government contribute to adaptation costs?

242. Funding from government is a cost met by taxpayers or ratepayers. This section considers when it might be fair for cost to be shared collectively in this way. It discusses adaptation costs generally first, before turning to retreat.
243. An important consideration is that the Crown must uphold commitments under the Tiriti. This means that a coordinated approach is needed across central government and councils.
244. Government already has responsibility for some adaptation-related costs, including risks to assets it owns. These include public infrastructure such as schools, hospitals and parts of our transport network. Building the resilience of these assets is already expected to be costly.
245. Any new government expenditure requires consideration of how costs will be met in relation to other spending priorities and strategic objectives. Alongside rising adaptation costs, Aotearoa is likely to be facing other fiscal challenges. Our ageing population means that superannuation and healthcare costs are likely to rise in the medium to long-term.

### Should taxpayers or ratepayers help to meet costs for individuals, households and businesses?

246. People's views of when it is reasonable and fair for government to support people to meet adaptation costs can vary widely, including between different places, circumstances and for different types of adaptation costs. One important consideration is the extent to which people need support, which is partially determined by risk exposure, ability to pay and the level of existing protection, as set out in the figure below. Other relevant considerations in determining need include:
- capacity and capability to plan and act to address risks
  - existence of socio-economic and other challenges
  - the location of assets.

Figure 7: Levels of need



247. Another consideration is the extent to which people can reasonably be expected to have anticipated the risks they face, or the extent to which they contributed to them. Our property system takes a ‘let the buyer beware’ approach, so people who develop or buy properties in risky areas should first order Land Information Memorandums and seek professional advice. This might imply owners who should have been aware of the risks should not receive the same level of support as those who could not have been.
248. On the other hand, it is currently hard to identify in practice exactly when such risks should have been known. For example, the risk of sea-level rise was not widely understood or acknowledged even a few decades ago. We may need to consider the extent to which government should account for knowledge of risk when considering providing support for adaptation.
249. Scientific understanding is improving, and councils are now legally required to publish all hazard information they hold. Recent changes to legislation will also ensure Land Information Memorandums will provide better information to support people to make informed decisions about natural hazard risks.<sup>36</sup>

### Question 32

In what circumstances (if any) do you think ratepayers and taxpayers should help people pay for the costs of adaptation?

## When should central government help councils to meet adaptation costs?

250. As noted in the section above, some councils lack the financial capacity to adequately invest in adaptation. Places with high risk exposure, limited existing protective infrastructure and limited ability to raise rates face the most serious affordability challenges. There may be a case for central government to help councils meet some costs in these cases, to ensure affordability does not prevent good adaptation.
251. It is not always clear, however, how to determine when councils require help. If need or ability to pay is the primary consideration, there is no single way of measuring this across councils in Aotearoa. To measure this, central government might need to develop methods based on average income, population density, debt levels and risk exposure.
252. Another approach could be to focus on where central government might have specific responsibilities that suggest it should share costs with councils; three examples of which are set out below.
- **Treaty commitments:** where necessary to uphold commitments under Te Tiriti.
  - **Overwhelming scale:** where a problem is sufficiently large or complex that it cannot be addressed by communities and their councils.
  - **National benefits:** where the benefits will be shared nationally and not just within a community.

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<sup>36</sup> The Local Government Official Information and Meetings Act 1987. A Land Information Memorandum (LIM) is a report issued by the local city or district council, which provides a summary of all the information that council has on file about that property. From 1 July 2025, a LIM will have to include information about natural hazards and impacts of climate change that exacerbate natural hazards.

253. Central government could also support councils to raise additional revenue. The report from the independent Review into the Future for Local Government recommended legislative and policy changes to make additional funding tools available to councils, such as value capture targeted rates,<sup>37</sup> volumetric charging to businesses and households<sup>38</sup> and for central government to pay rates and fees on its properties.

### Question 33

In what circumstances should central government help councils to meet adaptation costs?

## Should the costs of retreat be shared in the future?

254. While insurance may cover the cost of damage, people who need to retreat typically face the prospect of significant financial loss without government support. There may be a case to help those in such situations avoid significant hardship. In past disasters, taxpayers or ratepayers have contributed to recovery costs, including for the acquisition of land where retreat is necessary.
255. With the number of extreme weather events likely to increase, future governments may face pressure to provide further ad hoc support. Providing ad hoc support after an event can be legally complex and poorly targeted, which makes it very expensive. While government is not obliged to guarantee property ownership, a well-designed permanent scheme may help to target or provide timely support to those most in need.
256. We need to further consider the case for, and fairness of, a permanent scheme for financial support. While the public tends to support helping communities facing loss in a crisis, redistributing public money before a crisis, particularly in areas where detailed risk information is available, may not be as widely supported. Public subsidies for retreat could also encourage people to purchase properties in areas at risk, because they believe central government or councils will assist them if they need to retreat.
257. Where a decision is made to retreat, the case for providing financial support may be strongest.
258. In Aotearoa, the Public Works Act 1981 provides for the acquisition of private property and a process for compensation. There are also instances where the use of property is restricted in the public interest with no compensation, for example in relation to land-use planning. The general approach illustrated by the Building Act 2004 is that any risk to private property is borne by the owner. This reflects the 'owner-responsibility' model described earlier and incentivises owners to adopt risk-management measures.<sup>39</sup>

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<sup>37</sup> This would allow councils to capture some of the increase in property values resulting from infrastructure investments.

<sup>38</sup> Volumetric charging helps with the recovery of costs and enables councils to manage demand. These charges are sometimes used for water but could also be applied to kerbside waste and other services.

<sup>39</sup> For further discussion of these competing approaches and possible ways forward, refer to chapters 4 and 5 of the Expert Working Group report.

### Christchurch – case study

In February 2011, an earthquake caused severe damage in Christchurch and Lyttelton. The most heavily damaged areas were declared ‘red zones’ because land was unsafe for rebuilding.

In August 2011, the Government offered owners either a payment for land and dwellings at the 2007 property valuation, or payment for land only, with the rest paid by the owner’s insurer. Most people chose the second option. Owners of insured commercial properties, uninsured improved properties and vacant land were initially offered 50 per cent of the rateable land value. In March 2015, a Supreme Court ruling resulted in new offers to owners of uninsured improved properties and vacant land at 100 per cent of the rateable land value.

The Crown has since acquired and demolished more than 8,000 properties. All offers were voluntary, and residents were informed of the risks of remaining within the red zone, which included the risk of their property becoming uninsured and the retreat of council services.

259. There are several ways central government could approach funding for managed retreat. Support could range from little or no support to full compensation for the value of property and land, as set out below. There are many other possible variations of support along this spectrum.
- **Approach 1 – status quo:** Central government does not establish a framework for compensating property and landowners who must retreat, but it will consider doing so on a case-by-case basis, usually after a disaster.
  - **Approach 2 – low level of support:** Central government limits financial assistance to a low level of support for those worst affected. For example, assistance could be limited to paying residual mortgage debt on primary places of residence up to a modest cap and grants for people meeting hardship criteria.
  - **Approach 3 – ‘like-for-like’ payment:** This could provide a greater level of support to property and landowners to enable like-for-like (or near like-for-like) replacement costs (potentially up to a cap).<sup>40</sup> For example, this could be based on market value, rebuild costs per square metre, rateable value or some other measure of value. Alternatively, it could be based on the level of insured value, including EQCover payments.<sup>41</sup> This could incentivise homeowners to take out full insurance on their properties.
260. In general, a greater role for central government in funding retreat would have trade-offs with other possible expenditure, and may require additional revenue-raising from taxpayers, depending on the projected level of costs. Fiscal affordability is a key consideration.
261. Under any approach, government would also need to consider how to treat:
- different types of property and land, such as principal places of residence, second homes, rental properties and commercial properties
  - property and land owned by not-for-profit organisations; iwi, hapū and Māori; and community groups.

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<sup>40</sup> Approach 3 differs from how compensation is provided under the Public Works Act 1981. See the Expert Working Group report for further detail.

<sup>41</sup> Toka Tū Ake EQC, the Earthquake Commission, provides natural disaster insurance to residential homes and land under a scheme called EQCover.

262. The impact on incentives is also important. For example, any financial assistance would ideally be set at a level that incentivises people to undertake proactive retreat (and not wait until after a disaster) where this provides the best long-term option. It should not, however, incentivise people to retreat where protective options would manage risks and provide better value for money.
263. Consideration could also be given to whether any assistance should decrease over time, only be open for a finite period (to incentivise early uptake), or be flat (for example, by indexing payments to inflation) and open indefinitely (to maximise total uptake).

#### Question 34

What are the benefits and challenges of providing financial support to people needing to retreat?

#### Question 35

Are there any other approaches for providing support to people needing to retreat that we should consider?

#### Question 36

What are the benefits and challenges of providing financial support to businesses needing to retreat?

## If central government decides to invest, what costs could it prioritise?

264. This section focuses on the role of central government. However, it would be valuable for central government to develop an aligned approach to investment in partnership with councils. In addition, some of the priority areas and approaches to implementing funding programmes could be adopted by councils as well as central government.

### How much might adaptation cost?

265. It is currently extremely difficult to estimate the cost of the country's overall adaptation needs, for several reasons:
- our limited collective understanding of existing risks
  - uncertainty around global warming scenarios and how warming will impact weather patterns, sea levels, erosion and other aspects of the natural environment in Aotearoa
  - costs will depend on a range of policy decisions and events that have not yet happened.
266. Nonetheless, evidence suggests that the figure could be very significant. For example:
- researchers recently estimated that more than 282,000 houses, with an estimated replacement value of more than \$213 billion, are in flood hazard areas across Aotearoa<sup>42</sup>

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<sup>42</sup> Paulik R, Zorn C, Wotherspoon L, Sturman J. 2023. [Modelling national residential building exposure to flooding hazards](#). *International Journal of Disaster Risk Reduction*. 94.

- a 2011 report from the Ministry for the Environment estimated that 68,170 buildings, with a replacement cost of \$19 billion, are situated less than 1.5 metres below the mean high-water spring (a proxy measure for coastal exposure)<sup>43</sup> – this included 382 critical-facility buildings, five airports and more than 2000 kilometres of roads.
267. To estimate the overall costs of adaptation, a range of natural hazard risks would need to be considered. The scale of each risk will vary from place to place and different adaptation approaches – with different costs – would be needed in different places.
268. Once government can estimate how much will need to be spent on adaptation, determining how much individuals, households, businesses, communities and councils can reasonably pay will also require significant work. Ability to pay is highly context-specific, because of different socio-economic characteristics, uneven exposure to risk and uneven historical investment in protections against flooding and other hazards.
269. Uncertainty about long-term costs is not, however, a reason to delay action. Effective adaptation measures can be progressed now and not doing so will increase the overall costs to be met in the future in many cases.

## What could initial investment priority areas be?

270. To maximise value for money, central government could adopt initial priority areas to target support for adaptation. These priorities should aim to address the problems with the current funding system outlined above. The table below sets out possible initial priorities, possible eligibility considerations and associated costs.

**Table 12: Possible initial priorities for government adaptation funding**

| Priority                              | Purpose  | Possible eligibility considerations  | Associated costs   |
|---------------------------------------|--|--|--|
| <b>Property-level retreat funding</b> | <ul style="list-style-type: none"> <li>• Alleviate uncertainty and hardship</li> <li>• Prevent delays or poor adaptation</li> <li>• Reduce recovery costs</li> </ul> | <ul style="list-style-type: none"> <li>• Help people who face very significant risks to retreat</li> <li>• Could prioritise primary places of residence</li> </ul> | <ul style="list-style-type: none"> <li>• Buyouts, land swaps, lease-backs</li> <li>• Post-retreat land remediation and management</li> <li>• Protection or relocation of buildings of spiritual, cultural and community significance<sup>44</sup></li> </ul> |
| <b>Home resilience funding</b>        | <ul style="list-style-type: none"> <li>• Help people with limited financial means protect themselves</li> <li>• Reduce recovery costs</li> </ul>                     | <ul style="list-style-type: none"> <li>• People who meet certain hardship criteria or means-tested criteria</li> </ul>   | <ul style="list-style-type: none"> <li>• Property maintenance, upgrades and retrofitting to ensure resilience, including making properties more flood resilient</li> </ul>   |

<sup>43</sup> Ministry for the Environment. 2017. *Coastal Hazards and Climate Change: Guidance for Local Government*. Wellington: Ministry for the Environment. p. 19.

<sup>44</sup> The site of a heritage structure, building or place of cultural significance is usually an integral part of its cultural heritage value. Retreat may therefore not be a viable or practical option in some cases, and it will be important to consider all options for preserving heritage, intangible values, community connections and identity where possible.



| Priority  | Purpose   | Possible eligibility considerations   | Associated costs  |
|---|---|---|---|
| <b>Flood resilience infrastructure and nature-based solutions</b> | <ul style="list-style-type: none"> <li>• Help councils in need to reduce risks from flooding</li> <li>• Prevent delays or poor adaptation</li> <li>• Reduce recovery costs</li> </ul>                                 | <ul style="list-style-type: none"> <li>• Councils with very low ability to pay, high risk exposure and limited existing protections</li> </ul>  | <ul style="list-style-type: none"> <li>• Risk assessment, planning and feasibility studies</li> <li>• Infrastructure development</li> <li>• Nature-based solutions</li> </ul>   |
| <b>Iwi, hapū and Māori adaptation fund</b>                        | <ul style="list-style-type: none"> <li>• Enable community-led planning and implementation of planning</li> <li>• Provide for iwi, hapū and Māori to self-determine appropriate adaptation actions at place</li> </ul> | <ul style="list-style-type: none"> <li>• Could operate like Te Mātāwai model where decision-making is devolved to regional boards made up of mātauranga Māori, climate and taiao practitioners to make funding decisions</li> </ul> | <ul style="list-style-type: none"> <li>• Protection, relocation, and construction of buildings of spiritual, cultural and community significance</li> <li>• Property-level or community-level measures determined by the community, looking to examples like papakāinga models across the motu</li> </ul> |

271. This table does not include investments already prioritised by central government, including greater funding for climate science, natural hazard mapping and modelling, and analysis and public provision of information.
272. Any government funding should incorporate a flexible funding approach, to address the diverse circumstances of each iwi, hapū and Māori community and support them to adapt.

### Question 37

What should central government's initial funding priorities be and why? Which priorities are the most important and why?

## How could central government communicate its investment priorities?

273. To provide greater certainty to other parties and support the continuous delivery of adaptation actions across the country, central government could more clearly communicate its priorities for adaptation funding. This could also help to ensure government is planning over multiple years in a strategic way.
274. To do so, central government could release a regular statement of its spending priorities. There are a number of possible options.
- **Option 1:** A statement of spending priorities through a government policy statement, which could be released every six years alongside the national adaptation plan. This would enable a comprehensive account of central government's spending priorities and could be provided for in legislation to add legal weight.
  - **Option 2:** A chapter in the national adaptation plan, which recognises that this plan is the government's long-term strategy for adaptation and would ensure alignment with adaptation funding priorities.

- **Option 3:** A statement that is part of central government’s annual Budget, which would provide flexibility to update priorities every year, taking account of recent weather events and other natural hazards, as well as new information.
275. Whichever option is chosen, the contents should be informed by the agreed outcomes and principles and could include:
- strategic priorities for adaptation investment
  - the amount of funding allocated to investing in adaptation for the duration of the statement or plan
  - any processes or criteria for making decisions where relevant.
276. The document could seek to cover all central government investment in adaptation or only part of it. One reason to limit it to cover only part of its investment is that some spending is already covered by other arrangements, such as expenditure on resilience under the Government Policy Statement on Land Transport and the Government’s Infrastructure Action Plan. In either case, it would need to align with those other statements of investment priorities.
277. The document could be confined to government spending only or could also apply to council expenditure (consistent with relevant laws).
278. A further way that central government could provide long-term certainty would be to establish an enduring fund for adaptation, as recommended by the independent Review into the Future for Local Government<sup>45</sup> and the Productivity Commission.<sup>46</sup> This option is discussed in the next section.

### Question 38

How could central government communicate its investment priorities? Please indicate which option you think would be most effective and explain why.

### Question 39

Should funding priorities cover councils as well as central government?

## How could central government implement its funding priorities?

279. There are many ways central government could design programmes to provide funding for adaptation. At one end of the spectrum is the current state, where central government funds adaptation on a case-by-case basis for specific costs where there is very clear need. At the other end of the spectrum would be systematic investment through a long-term central government fund covering all adaptation costs.
280. The table below demonstrates this spectrum of options. The design of any programme would be based on the funding priorities set by central government.

<sup>45</sup> Review into the Future for Local Government. 2023. *He piki tūranga, he piki kōtuku*. Wellington: Review into the Future for Local Government.

<sup>46</sup> Productivity Commission. 2019. *Local government funding and financing*. Wellington: Productivity Commission.

**Table 13: Spectrum of design options for a funding programme**

| Design component                          | Scale of choices  |  |
|---|---|--|
|   | ←   | →  |
| <b>Purpose</b>                            | Address adaptation needs as they become apparent  | Provide long-term certainty for communities nationwide                         |
| <b>Investment priorities</b>              | Limited set of high-priority costs  | All adaptation costs   |
| <b>Eligibility</b>                        | Targeted to people facing hardship or councils with significant need  | Universal payments for a wide range of actors based on pre-agreed criteria     |
|   | Restricted to certain activities (eg, hard defences or retrofitting)  | Open to all costs within agreed investment priorities                          |
|   | Limited to principal places of residence only   | All property types   |
| <b>Level of support</b>                   | Minor costs or loan provision only  | Funding for large infrastructure projects and large-scale retreat where needed |
| <b>Conditionality</b>                     | High co-investment requirements, <sup>47</sup> performance requirements (for councils) and insurance cover (for properties) | Limited or no co-investment, insurance or performance requirements             |
| <b>Administration</b>                     | Through an existing government department or Crown entity   | Through a new agency, or directorate within an existing agency                 |
| <b>Time horizon</b>                       | Short term programme (1–3 years)  | Intergenerational fund (30+ years)   |
| <b>Payment</b>                            | Through councils  | Directly to a wide range of actors   |
| <b>Investment decision-making process</b> | High central government control   | High council or individual control   |

281. To demonstrate what programmes could look like in practice, the table below compares two possible programmes. Any programmes would not be mutually exclusive and could be developed together or alongside other approaches. The two possible programmes below do not reflect the full range of options and are intended only as examples.

<sup>47</sup> ‘Co-investment’ means the recipient of financial assistance would be required to meet some percentage of the overall costs. For example, a 50 per cent co-investment requirement on a \$50,000 flood-resilience retrofit of a house would mean the homeowner and government would each pay \$25,000.

**Table 14: Examples of programmes to allocate funding for climate resilience**

| Design component                          | Resilient retrofit and home-raising programme <sup>48</sup>   | Local government climate resilience fund <sup>49</sup>  |
|---|---|---|
| <b>Purpose</b>                            | Help property owners facing significant flood risk increase the resilience of their homes                               | Support councils with limited means and high-risk exposure to invest in climate adaptation measures               |
| <b>Investment priorities</b>              | Limited to retrofitting and home raising  | A wide range of adaptation costs, including flood resilience and relocation                                       |
| <b>Eligibility</b>                        | Targeted to people facing significant flood risk  | Targeted to councils facing significant flood risk  |
|   | Retrofitting and raising residential homes  | Infrastructure, retreat and many other costs  |
| <b>Level of support</b>                   | Up to \$50,000 for retrofitting and \$100,000 for raising (illustrative only)   | As much as is needed, including for large infrastructure and retreat  |
| <b>Conditionality</b>                     | 1-to-1 co-contribution to costs required, with exceptions for people facing financial hardship – houses must be insured | Co-investment requirements vary and are assessed on a case-by-case basis with mandatory monitoring and evaluation |
| <b>Administration</b>                     | Through central government  | Through central government  |
| <b>Time horizon</b>                       | Three years   | Five years with the possibility of extension  |
| <b>Payment</b>                            | Through central government  | Through central government then through councils  |
| <b>Investment decision-making process</b> | Fixed eligibility   | Cabinet for large investments and a dedicated Ministerial group for smaller investments                           |

282. Different design options will have equity implications. For example, time-limited and contestable pools of funding sometimes disadvantage Māori and other vulnerable communities, as it can take longer for these groups to reach a consensus on decisions and prepare comprehensive funding applications.

283. Funding programmes could be confined to central government spending only or could also apply to council expenditure (consistent with relevant laws).

## Funding and financing solutions for adaptation

284. The challenge of adapting well to climate change suggests the need to explore new funding and financing solutions for Aotearoa.

285. At a high level, any additional government spending can be met through existing allowances or raising additional revenue.

<sup>48</sup> This could be modelled on the Government of Queensland’s Resilient Retrofit and Home Raising programmes, which allow homeowners to apply for grants of up to AUS\$50,000 for retrofitting and AUS\$100,000 for raising, with possible additional support on a co-investment basis.

<sup>49</sup> This could be an extension of the Department of Internal Affairs’ Local Government Flood Resilience Co-investment Fund, which was established in Budget 2023 for co-investment with councils in areas affected by Cyclone Gabrielle and the Auckland floods in 2023.

286. Central government can also explore alternative ways to raise finance from non-traditional sources, such as through adaptation markets, which enable the exchange and sale of climate-related risk reduction projects to match supply and demand for resilience.<sup>50</sup>
287. The finance sector may also have innovative solutions. Insurers and banks will become more exposed to natural hazard risks if they do not limit or withdraw products or identify other ways to improve the country's resilience. There are ways for banks and insurers to encourage risk reduction, while also reducing the impact of sudden and significant financial costs to consumers. For example:
- developing initiatives to enable greater transparency on risk assessment, information and risk pricing
  - developing industry agreements on data sharing
  - agreeing on a consistent approach for loans secured against properties subject to a retreat
  - providing time-limited support to those affected by abrupt or severe pricing changes.
288. It might also be possible for the finance sector to help with investment in risk reduction measures, for example through voluntary or compulsory contribution schemes. The Government currently does not have a view on how best to achieve this and would welcome input from the sector on potential solutions.
289. Aotearoa currently has very high home insurance coverage. Continued coverage to spread costs over time is important given our high natural hazard risk profile. Disruptions to the property insurance market could affect people's ability to build and buy houses, and disruptions to the business interruption insurance market could affect business investment. Any policy responses being considered need to be mindful of the need to maintain high insurance coverage and banking sector involvement in Aotearoa.
290. Other commentators have raised other funding and financing solutions to support greater adaptation and managed retreat. See, for example, chapter 5 of the report of the Expert Working Group on Managed Retreat, the Environmental Defence Society working paper on funding and financing managed retreat, and the Sapere report on managed retreat mechanisms.<sup>51</sup>

#### Question 40

How can the banking and insurance sectors help to drive good adaptation outcomes?

#### Question 41

What solutions should be explored for funding and financing adaptation?

<sup>50</sup> Hall D. 2022. *Adaptation finance: risks and opportunities for Aotearoa New Zealand*. Concept paper prepared for the Ministry for the Environment. Auckland: Mōhio Research and Auckland University of Technology.

<sup>51</sup> Peart R, Boston J, Maher S, Konlechner T. 2023. *Aotearoa New Zealand's Climate Change Adaptation Act: Building a Durable Future – Principles and funding for managed retreat - Working Paper 1*. Wellington: Environmental Defence Society; Peart R, Tombs BD. 2023. *Aotearoa New Zealand's Climate Change Adaptation Act: Current Legislative and Policy Frameworks for Managed Retreat – Working Paper 2*. Wellington: Environmental Defence Society; Moore D, White A, Woock K. 2022. *Assessment of mechanisms of managed retreat*. Prepared for the Ministry for the Environment by Sapere. Wellington: Sapere.

## Te Tiriti-based approach to adaptation funding

291. Chapter 3 sets out what a te Tiriti-based approach to adaptation might mean for adaptation funding, including:
- using a flexible funding approach which addresses the diverse circumstances of each iwi, hapū, Māori landowner and Māori community and supports them to adapt
  - providing funding, where needed, for alternative housing, moving costs, rebuilding structures and preserving cultural infrastructure and sites
  - using Papakāinga models to assess potential funding and living arrangements for iwi, hapū and Māori communities
  - possibly creating an adaptation fund specific to iwi, hapū and Māori (covering retreat and other adaptation actions).

# Chapter 8

## – Adapting through recovery

### Overview

This chapter focuses on:

- the relationship between recovery and adaptation
- whether the enduring adaptation system could guide recovery decisions.

### Key points

- The enduring adaptation system could be used to guide quick decisions on adaptation in the immediate aftermath of a disaster.
- Local adaptation planning could also consider whether and how a plan might change in the event of a disaster.
- Some flexibility may still be needed to reflect the particular needs of recovery.

## The relationship between recovery and adaptation

292. This paper considers how we could improve our adaptation system so we can make good decisions about how to adapt before a disaster. We might also be able to use the enduring adaptation system we develop to help guide quick decisions on adaptation during the immediate recovery from a disaster.
293. Some of the aspects of a recovery are well established, such as the arrangement between councils and central government for sharing the cost of rebuilding essential infrastructure. Other aspects are developed on a case-by-case basis, such as any process for retreat and funding ‘voluntary buyout’ (an offer from councils or central government to purchase residential property in a location that has become too risky for people to live in).
294. The decisions that need to be made about adapting following a disaster are similar to those we need to make beforehand. Lessons learned through recovering from disasters can help us to adapt better in the future. Proactive adaptation can also quickly become adaptation through recovery following a disaster. However, after significant damage to property and infrastructure:
  - risks will be clearer
  - it will not be possible to improve the resilience of buildings that are destroyed
  - insurance pay-outs may allow people to either build back with increased resilience or to move
  - retreat and other adaptation actions may be more acceptable
  - decisions need to be made quickly to allow people to start to rebuild their lives.
295. During a recovery, there may also be substantial opportunities to undertake adaptation actions and rebuild with greater resilience to reduce future risk.



## Issues experienced with adaptation through recovery

296. Successive disaster recoveries in the past two decades have encountered some similar adaptation-related issues but have often tackled them differently.
297. Developing adaptation processes on a case-by-case basis like this during a recovery provides flexibility but also:
- creates uncertainty for people as they wait for decisions that will allow them to start rebuilding their lives
  - risks setting expectations for what will happen in the future, even though one-off recovery decisions are not intended to set the direction for the enduring adaptation system
  - risks inequity if communities in similar situations are treated differently over time.
298. Issues arising include:
- a lack of guidance and consistency for reassessing risks following a disaster
  - uncertainty about whether central government or councils will make decisions on land-use changes to address risk
  - a lack of clarity about whether the land-use powers needed to support adaptation after a disaster are different than those needed before a disaster
  - uncertainty about the process for retreat including whether retreat is an option and, if so, what will be funded and who will pay
  - legislation which incentivises rebuilding like-for-like after a disaster, rather than building back better.
299. Many of the decisions that need to be made after a disaster also go to the heart of te Tiriti partnership between Māori and the Crown. A decision to change land use, for example, may affect land that has been returned in a Treaty settlement, collectively held Māori land or sites of cultural significance to Māori.
300. It is not possible to design an appropriate response without understanding the nature of Māori rights and interests, meaning that engagement with Māori in affected regions is an essential step in any recovery. Understanding the expected process for engaging with te Tiriti partners about adaptation after a disaster, including who will lead it, will support early and meaningful engagement.

### Question 42

Are there any other issues that make it difficult to adapt during a recovery?

## Opportunities for adapting through recovery

301. As discussed in chapter 5, the Expert Working Group on Managed Retreat recommended pre-disaster recovery planning be included in the local adaptation planning process. Planning for recovery before a disaster occurs could enable a better recovery as well as better adaptation. It could also complement civil defence and emergency management planning.

302. Another question is whether a broader and permanent framework for adapting through recovery is needed. Giving people greater clarity about what they can expect to happen and how long it will take, would give them certainty following a disaster.
303. Such a framework could include:
- guidance on post-disaster risk assessment
  - a system for retreat (or at least, principles guiding when and how people are compensated for loss associated with land-use change)
  - further role clarity (such as responsibility for meeting costs not covered by the existing framework)
  - an adjustable process for engaging with te Tiriti partners
  - specific regulatory tools to allow land-use change following a disaster.
304. A key question is whether the adaptation system, particularly any enduring system for community-led retreat and adaptation funding, should also apply to recoveries.
305. If we decide we need a broader and permanent framework, we will need to decide whether additional elements of this framework need to be legislated or whether greater flexibility is needed than legislation would provide. Some regulatory changes may be desirable, particularly around powers to make land-use changes quickly and at scale.

#### Question 43

Do you think our approach to community-led retreat and adaptation funding should be the same before and after a disaster? Why or why not?

## Te Tiriti-based approach to adapting through recovery

306. Chapter 3 sets out what a te Tiriti-based approach to adaptation might mean for adapting through recovery, including:
- adequately supporting and resourcing Māori participation in climate change adaptation
  - incorporating Māori perspectives, te ao Māori and local mātauranga Māori
  - ensure a te Tiriti-based approach is taken to extending any features of the enduring adaptation system to adaptation through recovery.

# Glossary

The glossary in the first national adaptation plan has been used to prepare this glossary.

| Key term                  | Definition  |
|---------------------------|---|
| <b>Adaptation</b>         | In human systems, the process of adjusting to actual or expected climate and its effects, to moderate harm or take advantage of beneficial opportunities. In natural systems, the process of adjusting to actual climate and its effects. Human intervention may help these systems to adjust to expected climate and its effects.  |
| <b>Adaptation options</b> | The wide range of strategies and measures that are available and appropriate for addressing adaptation. They can take the form of structural, institutional, ecological or behavioural actions.   |
| <b>Adaptive capacity</b>  | The ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities or to respond to consequences.   |
| <b>Asset</b>              | Something of value, which may be exposed or vulnerable to a hazard or risk. It may be something physical, environmental, cultural, or financial and/or economic, and its value may be tangible, intrinsic or spiritual (see Taonga).  |
| <b>Biodiversity</b>       | The variability among all living organisms on Earth. It includes diversity within species, diversity between species and diversity of an ecosystem. The living organisms may be from any sources, such as terrestrial, marine and other aquatic ecosystems, and the ecological complexes they belong to.  |
| <b>Climate</b>            | Informally, the average weather over a period ranging from months to thousands or millions of years. In more formal terms, a statistical description of the mean and variability of quantities, usually of surface variables such as temperature, precipitation and wind, averaged over a period (typically 30 years, as defined by the World Meteorological Organization).<br><br>More broadly, climate is the state, including a statistical description, of the climate system.  |
| <b>Climate change</b>     | A change in the state of the climate that can be identified (eg, by using statistical tests) by changes or trends in the mean and/or the variability of its properties, and that persists for an extended period, typically decades to centuries. Includes natural internal climate processes and external climate forcings such as variations in solar cycles, volcanic eruptions and persistent anthropogenic changes in the composition of the atmosphere or in land use.<br><br>The United Nations Framework Convention on Climate Change (UNFCCC) definition of climate change specifically links it to direct or indirect human causes, as: “a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods”. The UNFCCC thus makes a distinction between climate change attributable to human activities altering the atmospheric composition and climate variability attributable to natural causes. |
| <b>Climate resilience</b> | The ability to anticipate, prepare for and respond to the impacts of a changing climate, including the impacts that we can anticipate and the impacts of extreme events. It involves planning now for sea-level rise and more frequent flooding. It is also about being ready to respond to extreme events, such as forest fires or extreme floods, and to trends in precipitation and temperature that emerge over time, such as droughts.   |

| Key term                                  | Definition   |
|---|--|
| <b>Coastal</b>                            | Describes either the land near to the sea (eg, 'coastal communities') or the part of the marine environment that is strongly influenced by land-based processes (eg, 'coastal seas', meaning the part of the sea that is generally shallow and near shore). The landward and seaward limits of the coastal zone are not consistently defined, neither scientifically nor legally. Thus, coastal waters can either be considered as equivalent to territorial waters (extending 12 nautical miles and/or 22.2 km from mean low water), or to the full Exclusive Economic Zone, or to shelf seas, with less than 200m water depth. |
| <b>Coastal erosion</b>                    | The process when the high-tide mark moves closer towards the land due to a net loss of sediment or bedrock from the shoreline. Also known as shoreline retreat.  |
| <b>Co-benefit</b>                         | A positive effect that a policy or measure aimed at one objective has on another objective, thereby increasing the total benefit to society or the environment.  |
| <b>Co-investment</b>                      | In this paper co-investment refers to when central government invests in an activity or measure together with an individual, household, business or council. Co-investment requirements refer to where central government requires a recipient of financial assistance to meet a certain percentage of the overall costs of an activity or measure.  |
| <b>Consequence</b>                        | The outcome of an event that may result from a hazard. It can be expressed quantitatively (eg, units of damage or loss, disruption period, monetary value of impacts or environmental effect), by category (eg, high-, medium- or low-level impact) or qualitatively (a description of the impacts). Alternatively, the outcome of an event that affects objectives.   |
| <b>(the) Crown</b>                        | Generally, executive government conducted by ministers and their departments. The Crown does not normally include organisations with their own corporate identities, such as state-owned enterprises.  |
| <b>Cultural asset</b>                     | Material artefacts, non-material items and natural places that have cultural value.  |
| <b>Cultural heritage</b>                  | Those aspects of the environment that contribute to an understanding and appreciation of Aotearoa's history and cultures. It includes historic sites, structures, places, areas, archaeological sites, sites of significance to Māori (including wāhi tapu) and cultural landscapes.   |
| <b>Disaster</b>                           | A serious disruption of the functioning of a community or a society, at any scale, that occurs because hazardous events interact with conditions of exposure, vulnerability and capacity, leading to human, material, economic and/or environmental losses and impacts.  |
| <b>Drought</b>                            | An exceptionally long period of water shortage for existing ecosystems and the human population (due to low rainfall, high temperature and/or wind).   |
| <b>Dynamic adaptive pathways planning</b> | A framework that supports climate adaptation decision-making by developing a series of actions over time (pathways). It is based on the idea of making decisions as conditions change, before severe damage occurs, and as existing policies and decisions prove no longer fit for purpose.  |
| <b>Ecosystem</b>                          | A functional unit consisting of living organisms, their non-living environment and the interactions within and between them. The purpose of the ecosystem defines what components belong to it and where its spatial boundaries lie. Ecosystem boundaries can change over time. Ecosystems are nested within other ecosystems and their scale can range from very small to the entire biosphere. In the current era, most ecosystems either contain people as key organisms or are influenced by the effects of human activities in their environment.   |

| Key term                                       | Definition   |
|--|--|
| <b>Emergency management</b>                    | The process of applying knowledge, measures and practices that are necessary or desirable for the safety of the public or property, and are designed to guard against, prevent, reduce, recover from or overcome any hazard, harm or loss associated with any emergency. Activities include planning, organising, coordinating and implementing those measures, knowledge and practices.   |
| <b>Emissions</b>                               | In the context of climate change, emissions of greenhouse gases, precursors of greenhouse gases and aerosols caused by human activities. These activities include the burning of fossil fuels, deforestation, land use and land-use change, livestock production, fertilisation, waste management and industrial processes.  |
| <b>Equity</b>                                  | The principle of being fair and impartial, often also aligned with ideas of equality and justice. It provides a basis for understanding how the impacts of, and responses to, climate change (including costs and benefits) are distributed in and by society in more or less equal ways. The principle can be applied in understanding who is responsible for climate impacts and policies; how those impacts and policies are distributed across society, generations and gender; and who participates and controls the processes of decision-making.  |
| <b>Erosion</b>                                 | The process in which actions of water, wind, or ice wear away land.  |
| <b>Expert Working Group on Managed Retreat</b> | In September 2022, the Secretary for the Environment established the Expert Working Group on Managed Retreat. The overall objective of the group was to assist officials to develop detailed design options for a robust, equitable and enduring retreat system, and funding and financing adaptation as one part of the development of detailed policy design for the Climate Change Adaptation Bill. The group (chaired by Sir Terrence Arnold KC) had 13 members with expertise in a range of relevant fields, including economics, planning, public policy, property law and te ao Māori. The group’s final report is available on the Ministry for the Environment’s website.   |
| <b>Exposure</b>                                | Being present in a place or setting that could be adversely affected. Those that could be harmed in that environment include people; livelihoods; species or ecosystems; environmental functions, services and resources; infrastructure; and economic, social or cultural assets.   |
| <b>Externalities</b>                           | A cost or benefit of an activity that affects an unrelated third party   |
| <b>Extreme weather event</b>                   | An event that is rare at a particular place and time of year. What is ‘extreme weather’ may vary from place to place in an absolute sense. The measure of what is ‘rare’ may also vary but it involves the occurrence of a value of a weather or climate variable above (or below) a threshold value near the upper (or lower) ends of the range of observed values of the variable. In general, an extreme weather event would be as rare as, or rarer than, the 10th or 90th percentile of a probability density function estimated from observations. When a pattern of extreme weather persists for some time, such as a season, it may be classified as an extreme climate event, especially if it yields an average or total that is itself extreme (eg, high temperature, drought or heavy rainfall over a season). |
| <b>Flood</b>                                   | An event where the normal boundaries of a stream or other water body overflow, or water builds up over areas that are not normally underwater. Floods can be caused by unusually heavy rain – for example, during storms and cyclones. Floods include river (fluvial) floods, flash floods, urban floods, rain (pluvial) floods, sewer floods, coastal floods and glacial lake outburst floods.  |
| <b>Frequency (of a hazard)</b>                 | The number or rate of occurrences of hazards, usually over a particular period.  |

| Key term  | Definition  |
|---|---|
| <b>Governance</b>                                       | The governing architecture and processes of interaction and decision-making that exist in and between governments, economic and social institutions. Governance permeates all aspects of Aotearoa, from Te Tiriti partnership between Māori and the Crown, to the relationship between councils and communities and from the economy to the built environment and to natural ecosystems.  |
| <b>Greenhouse gas</b>                                   | Gas in the atmosphere, which may have natural or human causes, that absorbs and emits radiation at specific wavelengths within the spectrum of radiation emitted by the Earth's oceans and land surfaces, by the atmosphere itself and by clouds. This property causes the greenhouse effect. The main greenhouse gases in Earth's atmosphere are water vapour, carbon dioxide, nitrous oxide, methane and ozone. Human-made greenhouse gases include sulphur hexafluoride, hydrofluorocarbons, chlorofluorocarbons and perfluorocarbons. |
| <b>Hazard</b>   | The potential occurrence of a natural or human-induced physical event or trend that may cause loss of life, injury or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, ecosystems and environmental resources.   |
| <b>Impacts</b>  | The consequences of realised risks on natural and human systems, where risks result from the interactions of climate-related hazards (including extreme weather events), exposure and vulnerability. They are generally effects on human lives, livelihoods, health and wellbeing; ecosystems and species; economic, social and cultural assets; services (including ecosystem services); and infrastructure. They can be harmful or beneficial. Also known as consequences or outcomes.  |
| <b>Incentive</b>  | A thing that motivates or encourages someone to do something.   |
| <b>Infrastructure</b>                                   | The designed and built set of physical systems, along with their institutional arrangements, that interact with the broader environment to provide services to people and communities that support economic growth, health, quality of life and safety.   |
| <b>Insurance</b>  | A group of financial instruments for sharing and transferring risk among a pool of at-risk households, businesses and/or governments.   |
| <b>Intergovernmental Panel on Climate Change (IPCC)</b> | The United Nations body for assessing the science related to climate change. The IPCC is organised into three working groups and a task force: <ul style="list-style-type: none"> <li>• Working Group I (WGI) – physical science basis</li> <li>• Working Group II (WGII) – impacts, adaptation and vulnerability</li> <li>• Working Group III (WGIII) – mitigation</li> <li>• Task Force on national greenhouse gas inventories.</li> </ul>  |
| <b>Intervention</b>                                     | An action taken to effect change in knowledge and behaviour; deliberate disruption of the status quo.   |
| <b>Land use</b>   | All of the arrangements, activities and inputs (a set of human actions) that people undertake in a certain type of land cover (eg, forest land, cropland, grassland, wetland and settlements). Alternatively, the social and economic purposes for which land is managed (eg, grazing, timber extraction, conservation and city dwelling).  |
| <b>Moral hazard</b>                                     | A situation where someone lacks incentives to guard against risk because they are protected from its consequences. For example, if a property owner knows government will compensate them for damages to their property after a natural disaster, they may choose not to spend money protecting their property.   |

| Key term                      | Definition   |
|-------------------------------|--|
| <b>Natural hazard risk</b>    | In the context of natural hazards, 'risk' not only represents the possibility that a hazard event could occur, but also its likelihood and consequences.   |
| <b>Nature-based solutions</b> | Solutions that are inspired and supported by nature and are cost effective, and at the same time provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features (eg, vegetation and water features) and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions. For example, using vegetation (eg, street trees or green roofs) or water elements (eg, rivers or water treatment facilities) can help reduce heat in urban areas or support stormwater and flood management. |
| <b>Pathway</b>                | The evolution of natural and/or human systems over time towards a future state. Pathway concepts range from sets of quantitative and qualitative scenarios or narratives of potential futures to solution-oriented, decision-making processes to achieve desirable social goals. Pathway approaches typically focus on biophysical, techno-economic and/or socio-behavioural changes, and involve various dynamics, goals and participants across different scales.  |
| <b>Place/places</b>           | Urban or rural areas, ranging from neighbourhoods to towns and regions. Adaptation must address both the physical elements of a place (eg, homes, buildings, infrastructure and spaces around them) and the social elements (eg, the identity of people and communities, cultural value).  |
| <b>Qualitative</b>            | Collecting and analysing non-numerical data to understand concepts, opinions, or experiences.  |
| <b>Quantitative</b>           | Collecting and analysing numerical data for statistical analysis.  |
| <b>Recovery</b>               | The act or process of recovering; restoration to a former or better condition.   |
| <b>Resilience/resilient</b>   | The capacity of interconnected social, economic and ecological systems to cope with a hazardous event, trend or disturbance, by responding or reorganising in ways that maintain their essential function, identity and structure. Resilience is a positive attribute when it allows systems to maintain their capacity to adapt, learn and/or transform.  |
| <b>Retreat</b>                | The purposeful, coordinated movement of people and assets (eg, buildings and infrastructure) away from risks. This may involve the movement of a person, infrastructure (eg, building or road) or community. It can occur in response to a variety of hazards, such as flood, wildfire or drought.   |
| <b>Retrofit/retrofitting</b>  | The process of adding new technology or features to older systems, especially industrial installations and buildings.  |
| <b>Risk</b>                   | The potential for adverse consequences for human or ecological systems, recognising the diversity of values and objectives associated with such systems. In the context of climate change, risks can arise from potential impacts of climate change as well as human responses to climate change. Adverse consequences may affect human lives, livelihoods, health and wellbeing; economic, social and cultural assets and investments; infrastructure; services (including ecosystem services); and ecosystems and species.   |
| <b>Risk assessment</b>        | The quantitative or qualitative process of identifying, analysing and evaluating risk, with entry points for communication and engagement, and monitoring and reviews (AS/NZS ISO 31000: 2009, Risk Management Standard).  |
| <b>Risk management</b>        | The process of making plans, actions, strategies or policies to reduce the likelihood and/or scale of potential adverse consequences, based on assessed or perceived risks.  |

| Key term                        | Definition  |
|---------------------------------|---|
| <b>Sea-level rise</b>           | <p>Change to the height of sea levels over time, which may occur globally or locally. Causes may be:</p> <ul style="list-style-type: none"> <li>• a change in ocean volume as a result of a change in the mass of water in the ocean (eg, due to melt of glaciers and ice sheets)</li> <li>• changes in ocean volume as a result of changes in ocean water density (eg, expansion under warmer conditions)</li> <li>• changes in the shape of the ocean basins and changes in Earth’s gravitational and rotational fields</li> <li>• local subsidence or uplift of the land.</li> </ul> |
| <b>Storm surge</b>              | <p>The temporary increase, at a particular location, in the height of the sea due to extreme meteorological conditions (low atmospheric pressure and/or strong winds). It is the excess in height above the level expected from the tidal variation alone at that time and place.</p>   |
| <b>Susceptibility</b>           | <p>The tendency of an area to undergo the effects of a certain hazardous process.</p>   |
| <b>Tipping point</b>            | <p>A critical threshold beyond which a system reorganises, often abruptly and/or irreversibly.</p>  |
| <b>Toka Tū Ake EQC</b>          | <p>Toka Tū Ake EQC, the Earthquake Commission, is a Crown Entity which invests in natural disaster research, education and providing insurance to residential property owners.</p>  |
| <b>Uncertainty</b>              | <p>A state of incomplete knowledge that can result from a lack of information or from disagreement about what is known or even knowable. It may occur for many reasons. For example, the data may be imprecise, definitions of concepts or terminology may be ambiguous, understanding of critical processes may be incomplete or projections of human behaviour may be in doubt.</p>   |
| <b>Vulnerability/vulnerable</b> | <p>Being predisposed or more likely to be adversely affected. Elements that contribute to this concept include sensitivity or susceptibility to harm and lack of capacity to cope and adapt.</p>  |
| <b>Wellbeing</b>                | <p>The health, happiness and prosperity of an individual or group. It can cover material wellbeing (eg, income and wealth, jobs and earnings, and housing), health (eg, health status and work–life balance), security (eg, personal security and environmental quality), social relations (eg, social connection, subjective wellbeing, cultural identity and education) and freedom of choice and action (eg, civic engagement and governance).</p>   |



# Te reo Māori glossary

| Te reo Māori                              | English  |
|---|--|
| <b>Hapori</b>                             | Community, section of a kinship group, family, society.  |
| <b>Hapū</b>                               | Kinship group, clan, subtribe.   |
| <b>Iwi</b>                                | Tribe, large group descended from a common ancestor.   |
| <b>Ka mua, ka muri</b>                    | Looking back to the past when going into the future.   |
| <b>Ka ora te whenua, ka ora te whānau</b> | When the land is healthy, so too is the whānau.  |
| <b>Kaitiaki</b>                           | Guardian or guardianship, stewardship – for example, of natural resources.   |
| <b>Kaupapa Māori</b>                      | Māori approach, topic, customary practice, institution, agenda, principles, ideology – a philosophical doctrine incorporating the knowledge, skills, attitudes and values of Māori society.  |
| <b>Kāwanatanga</b>                        | Government, dominion, rule, governorship.  |
| <b>Mahinga kai</b>                        | Places where traditional food and other natural resources are obtained.  |
| <b>Mana whenua</b>                        | Power from and/or authority over land or territory.  |
| <b>Mātauranga (Māori)</b>                 | Māori knowledge systems and worldviews, including traditional concepts.  |
| <b>Māori land or whenua Māori</b>         | Under Te Ture Whenua Māori Act 1993, Māori land means Māori customary land and Māori freehold land. This issues and options paper uses a broader definition and lists types of Māori land at table 4 of chapter 3.   |
| <b>Marae</b>                              | Courtyard – the open area in front of the whareniui (meeting house) where formal greetings and discussions take place. Often also used to include the complex of buildings around the marae.   |
| <b>Mauri</b>                              | Life principle, life force, vital essence, special nature, a material symbol of a life principle, source of emotions – the essential quality and vitality of a being or entity. Also used for a physical object, individual, ecosystem or social group in which this essence is located. |
| <b>Papakainga</b>                         | Original home, home base, village, communal Māori land.  |
| <b>Pūrakau</b>                            | Stories.   |
| <b>Rangatiratanga</b>                     | Chieftainship, right to exercise authority, chiefly authority, ownership, leadership of a social group.  |
| <b>Takiwā</b>                             | Area, district.  |
| <b>Taonga/taonga Māori</b>                | Treasure, anything prized – applied to anything considered to be of value, including socially or culturally valuable objects, resources, phenomena, ideas and techniques.  |
| <b>Taonga katoa</b>                       | All (treasured) possessions.   |
| <b>Taonga tuku iho</b>                    | Treasures handed down.   |
| <b>Tangata whenua</b>                     | The people of the land, local indigenous people. Māori are tangata whenua of the land they whakapapa back to.  |
| <b>Te ao Māori</b>                        | The Māori world.   |
| <b>Te taiao</b>                           | The environment.   |
| <b>Te Tiriti o Waitangi/ Te Tiriti</b>    | The Treaty of Waitangi. Note: While these terms are used interchangeably, the Government acknowledges that the English version and te reo Māori translation are separate documents and differ in a number of respects.   |

| Te reo Māori       | English  |
|--------------------|--|
| <b>Tikanga</b>     | Custom, practice, correct protocol – the customary system of values and practices that have developed over time and are deeply embedded in the social context.     |
| <b>Urupā</b>       | Burial ground.   |
| <b>Wāhi ingoa</b>  | Placenames.  |
| <b>Wāhi tapu</b>   | Sacred site – a place subject to long-term ritual restrictions on access or use, such as a burial ground, a battle site or a place where tapu objects were placed. |
| <b>Wāhi tupuna</b> | Ancestral sites.   |
| <b>Whakapapa</b>   | Genealogy, genealogical table, lineage, descent.   |
| <b>Whānau</b>      | Family, extended family, family connection.  |

# Appendix A: Government work on adaptation, mitigation and resource management reforms

## Government long-term adaptation and mitigation strategy

### National climate change risk assessment

The Climate Change Response Act 2002, following an amendment in 2019, requires a risk assessment at least every six years. The first national climate change risk assessment was published in 2022. This risk assessment:

- gave the first national picture of the risks New Zealand faces from climate change
- identified 43 priority risks covering all aspects of life from our ecosystems and communities to buildings and the financial system
- grouped risks according to five value domains: natural environment, human, economy, built environment and governance
- identified the ten most significant risks that require urgent action in the next six years to reduce their impacts
- laid the foundation for the first national adaptation plan which outlines the Government's response to these risks.

The Climate Change Commission will carry out future risk assessments.

More information and a copy of the risk assessment are available on the Ministry for the Environment's website: <https://environment.govt.nz/what-government-is-doing/areas-of-work/climate-change/adapting-to-climate-change/first-national-climate-change-risk-assessment-for-new-zealand/>

### National adaptation plan

*Adapt and thrive: Building a climate-resilient New Zealand – New Zealand's first national adaptation plan* was published in 2022. This national adaptation plan is the first in a series of national adaptation plans that will be developed every six years in response to national climate change risk assessments prepared by He Pou a Rangi – the Climate Change Commission.

The national adaptation plan is a government-led plan that brings together existing actions and proposed future work. Together, these existing and future actions set out what central government will do over a six-year period to enable all of us to better understand the risks and take action to address them.

More information and a copy of the plan are available on the Ministry for the Environment's website: <https://environment.govt.nz/what-government-is-doing/areas-of-work/climate-change/adapting-to-climate-change/national-adaptation-plan/>.

## **Emissions reduction plan**

*Te hau mārohi ki anamata Towards a productive, sustainable and inclusive economy: Aotearoa New Zealand's first emissions reduction plan* was published in 2022. This emissions reduction plan contains strategies, policies and actions for achieving our first emissions budget and contributing to global efforts to limit global temperature rise to 1.5°C above pre-industrial levels.

More information and a copy of the plan are available on the Ministry for the Environment's website: <https://environment.govt.nz/publications/aotearoa-new-zealands-first-emissions-reduction-plan/>.

## **Resource management reform**

The Government is repealing the Resource Management Act 1991 and enacting new laws to transform the way we manage the environment – the Natural and Built Environment Act and the Spatial Planning Act.

More information about resource management reform is available on the Ministry for the Environment's website: <https://environment.govt.nz/what-government-is-doing/areas-of-work/rma/resource-management-system-reform/>.

## **Randerson report**

*New Directions for Resource Management in Aotearoa*, known as the Randerson Report, is a comprehensive review of Aotearoa New Zealand's resource management system. The intention was to design a new system for resource management that delivers better outcomes for our environment, society, economy and culture. The Randerson Report sets out a large number of recommendations that are intended to reorient the system to focus on delivering specified outcomes, targets and limits in the natural and built environments.

The Randerson Report recommended that changes be implemented through three new statutes:

- the Natural and Built Environment Act
- the Spatial Planning Act
- the Climate Change Adaptation Act.

A copy of the report is available on the Ministry for the Environment's website: <https://environment.govt.nz/publications/new-directions-for-resource-management-in-new-zealand/>.

## **Resource Management Act 1991 (RMA)**

The Resource Management Act 1991 is the main law governing how people interact with natural resources in Aotearoa. As well as managing air, soil, freshwater and the coastal marine area, the Act regulates land use and the provision of infrastructure, which are integral components of our resource management system. People can use natural resources if doing so is allowed under the Act or permitted by a resource consent.

## **Natural and Built Environment (NBE) Bill**

The Natural and Built Environment Bill is one of three new statutes that will replace the Resource Management Act 1991. As the main replacement for the Resource Management Act, the Bill will be the primary piece of legislation governing land use and environmental regulation in Aotearoa. The Bill includes the following system outcome “the risks arising from natural hazards and the effects of climate change are reduced and other measures are taken to achieve an environment that is more resilient to those risks”.

The Bill will require each region to develop a natural and built environment plan, setting out rules for land use and resource allocation. Plans will be developed by a regional planning committee with representatives from councils and local iwi, hapū and Māori, with community engagement and input.

## **Spatial Planning (SP) Bill**

Spatial planning is a process of long-term strategy-making and coordination. It involves identifying the big issues and opportunities facing a region and developing a strategy to respond to them. Mapping changes spatially helps represent the strategy in a clear and understandable way.

The Spatial Planning Bill will introduce for the first time a consistent, formal framework for spatial planning in Aotearoa. Its core function will be to mandate the use of spatial planning, requiring central government, councils and Māori to work together to develop long-term regional spatial strategies that set regional direction for at least the next 30 years.

Regional spatial strategies will set spatial outcomes for how a particular geographic area will grow, adapt and change over time, and how land, infrastructure and other resources will be used and integrated to promote wellbeing. As for natural and built environment plans, regional spatial strategies will be developed by regional planning committees.

## **National Planning Framework (NPF)**

The Natural and Built Environment Bill proposes a system of outcomes, limits and targets set through a National Planning Framework. The National Planning Framework will coordinate and replace more than 20 current pieces of national direction. It will guide the future system and provide stronger direction for regional planning.

## **Regional planning committees**

Regional planning committees will develop and make decisions on regional spatial strategies and natural and built environment plans. Committees will include members from councils; central government; and iwi, hapū and Māori.

## **Climate Change Adaptation Bill (CCAB)**

The Randerson Report (discussed above) recommended a third statute with proposals for retreat and adaptation funding – now termed the Climate Change Adaptation Bill. The first national adaptation plan (discussed above) includes an action to pass legislation in the period 2022–2024 for retreat. The proposed inquiry into community-led retreat and adaptation funding would support the development of the Climate Change Adaptation Bill.

# Appendix B: Māori Affairs Committee Briefing on Māori Climate Adaptation

On 22 February 2023, the Māori Affairs Committee initiated a briefing to receive information about how climate change adaptation, and retreat in particular, may affect Māori. The intention was to contribute to and inform debate about issues specific to Māori that should be taken into account when developing policy and legislation relating to climate adaptation.

The committee wrote to several individuals and organisations to seek information to help guide their thinking. These included leading academics, iwi and other representative Māori organisations, and those with a significant interest or expertise in Māori climate adaptation. The committee asked them the following questions:

- How are marae, hapū and iwi affected by climate change now?
- What can be learned from the Māori experience with retreat to date?
- When does climate risk become intolerable to marae, hapū and iwi?
- What is unmanaged retreat for marae, hapū and iwi?
- How can the rights and interests of hapū and iwi be protected during managed retreat?
- How should we value sites of cultural importance and urupā?
- How can a worldview rooted in te ao Māori enhance decision-making about managed retreat?
- What at-risk infrastructure would impact most on Māori communities?
- How should Māori land be treated in managed retreat?
- What Māori assets are not adequately insured?
- What support should be provided to marae, hapū, iwi or Māori business?

The committee heard oral evidence from 17 submitters over six weeks from 15 March to 3 May 2023. They received 23 written submissions, 21 of which were supplementary material from oral submitters.

The committee presented its final report to Parliament on 5 July 2023. The committee recommended that the Government take into account the following principles when developing and implementing law and policy related to climate change adaptation.

#### **Adaptation planning processes should:**

1. give effect to Te Tiriti o Waitangi—the Treaty of Waitangi
2. inform Māori about the risks to their whenua, now and over time, with good data and information
3. recognise the value of mātauranga Māori equally alongside other knowledge systems
4. recognise and respect culture and identity, values and practices of local communities
5. acknowledge and protect Māori rights and interests

6. enable negotiation where settlement land is lost
7. conserve, protect, and develop taonga, papakāinga, marae, urupā and other significant sites
8. enable both the Crown and Māori to deliver on their respective roles and responsibilities
9. ensure local government also upholds Te Tiriti o Waitangi—the Treaty of Waitangi
10. encourage the sharing of best practice, data, and case studies among Māori communities.

**Adaptation engagement processes should:**

11. give effect to Te Tiriti o Waitangi—the Treaty of Waitangi
12. enable robust and deep conversations to be had between Māori communities, the Crown and local government
13. enable local community leadership
14. enable joint, shared, or preferably delegated decision-making to Māori
15. foster positive, collaborative working relationships and co-creation between all parties
16. enable the inclusion of different communities of interest (for example, mātāwaka)
17. engage with the correct groups who are responsible for making decisions about the whenua in question (for example, Māori land trusts).

**Adaptation funding policies and frameworks should:**

18. give effect to Te Tiriti o Waitangi—the Treaty of Waitangi
19. compensate Māori fairly for any loss of land or culturally important sites
20. fund mātauranga Māori research
21. fund Māori to participate in adaptation plan development processes led by others or to develop their own adaptation plans
22. fund the implementation of Māori adaptation plans, including mātauranga Māori solutions.

# Appendix C: What are the costs of adaptation, who currently pays for them and who benefits?

Note: this table is not an exhaustive list of adaptation costs

| Type of cost  | Examples   | Who currently pays   | Who benefits (primarily)                           |
|---|--|--|--|
| <b>PROTECT – flood protection infrastructure or nature-based solutions</b>            |  |  |  |
| Infrastructure maintenance and upgrades   | Repairing sea walls and stormwater-management systems  | Central government and councils  | Asset owners and people who live in the area       |
| New protective infrastructure   | New sea walls, stormwater-management systems, fire breaks  | Councils, but there has been underinvestment                           | Asset owners and people who live in the area       |
| Nature-based solutions  | Wetland restoration, dune restoration  | Central government, councils and non-governmental organisations (NGOs) | Asset owners and people who live in the area       |
| <b>AVOID – prevent people from being put in harm's way</b>                            |  |  |  |
| Policy direction and guidance   | National adaptation plan, national coastal hazards guidance, local risk assessments and dynamic adaptive pathways planning | Central government and councils  | People living in areas at risk                     |
| Regulating land use to prevent at-risk development                                    | Zoning restrictions, land-use planning, national policy statements   | Largely councils but this has varied in practice                       | People living in areas at risk                     |
| Building new public infrastructure and providing essential services in low-risk areas | Roading, water, electricity  | Central government, councils and users through fees                    | People who use the new infrastructure and services |
| <b>RETREAT – moving people and properties away from risk</b>                          |  |  |  |
| Public consultation   | Website and information portals, public outreach, community dialogue   | Councils   | Property owners and renters                        |
| Planning  | Council planning processes   | Councils   | Property owners and renters                        |



| Type of cost   | Examples   | Who currently pays   | Who benefits (primarily)  |
|--|--|--|---|
| Relocation   | Buying land to retreat to, property payments, moving houses or building new ones               | Asset owners, and ad hoc examples of central government and councils                                     | Property owners and renters   |
| Post-retreat costs   | Demolition, land remediation and management  | Unclear  | Property owners and renters   |
| Developing sites for people to retreat to                            | Roading, water, electricity  | Councils and private sector  | Property owners and renters   |
| Relocating culturally significant sites                              | Marae, churches, urupā, historic buildings   | Mixed – central government, councils, iwi, communities and businesses                                    | People who value or rely on culturally significant sites                |
| <b>ACCOMMODATE – lessening the risks to which people are exposed</b> |  |  |   |
| Retrofitting buildings for resilience                                | Raising homes, using water-resistant materials, raising electrical works to above flood levels | Asset owners   | Property owners and renters   |
| Disaster preparedness  | Emergency response training, early warning systems   | Councils   | People living in areas at risk  |
| Social safety nets and hardship support                              | Hardship support, healthcare services, temporary accommodation                                 | Central government and councils  | People living in areas at risk  |
| Insurance  | Private natural hazard insurance, EQC scheme   | Insurance holders (through premiums)   | Property owners   |
| Making infrastructure resilient                                      | Flood-proofing or fire-proofing infrastructure   | Central government and councils  | People who rely on that infrastructure, central government and councils |
| <b>ALL CATEGORIES</b>  |  |  |   |
| Research and evidence  | Data collection, collating different data sets, modelling and analysis, risk assessments       | Central government, councils, organisations investing in natural hazards research and users through fees | Everyone  |
| Public awareness and education                                       | Information campaigns  | Central government and councils  | People living in areas at risk  |
| Capacity and capability building                                     | Training central government and council staff  | Central government and councils  | Asset owners and people who live in the area                            |
| Professional services  | Engineering, architecture, urban planning services   | Central government, councils and asset owners  | Asset owners and people who live in the area                            |