PERPETUATING DISASTERS:

Unbundling New Zealand's cycle of inertia following natural hazards

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Abstract

New Zealand is stuck in a loop. The country has accumulated findings from decades of post-event inquiries into storms, floods, landslides and earthquakes. Yet it continues to default to short-term fixes despite continual recommendations for system level reform. Institutional amnesia and an unwillingness to tackle ingrained systemic issues, fuels aggravators of political short-termism, permissive land-use settings, and entrenched path-dependency on hard engineering responses like stopbanks and seawalls, which alone are insufficient to reduce the risks. The result is the perpetual inertia of a reactive response system. This inhibits any transformation to a more resilience-centric model in the face of increasingly frequent, intensive, progressive and ongoing climate changes. This report is based on a survey and analysis of post disaster reports and related climate change adaptation literature and relevant new items and identified opportunities for institutional and legislative reform that could enable barriers to adaptation action to be addressed.

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Perpetuating Disasters: Unbundling New Zealand's cycle of inertia following natural hazards

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1 Introduction: 'Creating Flood Disasters'[1]

New Zealand is stuck in a loop of fragile response and *ad hoc* solutions, underpinned by institutional amnesia to repeated lessons learned from natural hazard events over many decades. Many hazards –storms, floods and landslips rock communities every year. Earthquakes are less predictable but devastating. These events, and secondary effects cause harm to people and damage to land and property.[2] The effects, implications and efficacy of responses have been evaluated in various reports and inquiries over the last ten years, during which there were an increasing number of inquiries. This reporting invariably recommends long-term and pre-emptive approaches to extreme weather and ongoing climate-related hazards, that intentionally embed resilience and anticipate the rising risks. Yet New Zealand has been unable to enact such systems. The result is an ongoing fallback to *ad hoc* governance, incurring repeated costly recovery that could have been moderated by implementing the type of pre-emptive thinking discussed throughout post-event reports, climate change risk assessments and surveyed literature. Such a failure to action the lessons learned foments worsening outcomes with the onset of climate change.

This report outlines how the system dynamic underlining New Zealand's failure to install pre-emptive measures, is institutional amnesia compounded with the tyranny of other urgent or more pressing demands (e.g., housing supply, economic growth, quick recovery from shocks), reluctance to meddle with existing use protections and undermined by increasing denialism of climate change.

[1] Eriksen, N., (1986) *Creating Flood Disasters.* Water & Soil Miscellaneous Publication No.77 (ISSN 0110-4705). Wellington, New Zealand: Ministry of Works and Development
[2] CDEM. (2024). *Review of reviews.* National Emergency Management Agency.

This pattern in natural hazard response dates back at least 40 years and poses a key concern given the productivity losses due to increasing climate change impacts and more intense and frequent extreme events.[3]

We anchor our thinking in Neil Eriksen's 1986 report 'Creating Flood Disasters'.[4] Ericksen outlines the interaction of flood hazards with flood mitigation structures and land use controls. He explains New Zealand's policy preferences to attempt reduction of flood hazards head-on and retain residential land uses behind hard engineering protective works.[5] The specific dynamic he identifies is that engineering works only 'protect' to a specific event threshold. Changing land uses behind the protection can encourage intensification. This increases the residual risk, worsens the effects of more extreme events, and in turn diminishes the efficacy of built flood controls.[6] This is called the 'levee effect'.

Ericksen's point is that instead of controlling the flood itself, more *could* be done to control the land uses – a power broadly within the remit of local and central government under the then Town and County Planning Act 1977[7]. Ericksen's prophetic work has now been forgotten or ignored. New Zealand has continued along a mitigate (protect) first planning practice under the Resource Management Act thus allowing ongoing intensification of floodplains.

Four decades on, the amnesia worsens. Every year extreme weather events incur damages.[8] In the wake of these events, government reviews frequently raise the same points as Eriksen did in 1986. They make many similar recommendations on land uses that are not acted upon, then the next event occurs followed by another review, and so forth. This report shows repeated failure to act on identified gaps in mandates and resourcing of natural hazard and adaptation actions. Strategies and policy frameworks can exist on paper. In this case they have failed to systematically translate into pre-emptively planned, effective and legally enforceable workstreams within local authorities. While central government has had such workstreams underway, these have been defunded or stopped in an *ad hoc* manner with the consequence

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[3] World Economic Forum. (2025). The global risks report 2025 (20th ed.). Geneva, Switzerland: Author (Fig. C). https://reports.weforum.org/docs/WEF_Global_Risks_Report_2025.pdf

[4] Eriksen, N., (1986) *Creating Flood Disasters.* Water & Soil Miscellaneous Publication No.77 (ISSN 0110-4705). Wellington, New Zealand: Ministry of Works and Development; and see also Eriksen, N. (2024). Creating flood disasters: New Zealand's oscillating history. *Policy Quarterly, 20*(3), 52–60.

[5] Eriksen, N., (1986) *Creating Flood Disasters.* Water & Soil Miscellaneous Publication No.77 (ISSN 0110-4705). Wellington, New Zealand: Ministry of Works and Development, 7.

[6] Fu, X., Bell, R.G., Junqueira, J., White, I., & Serrao-Neumann, S. (2023). Managing rising residual flood risk: A national survey of Aotearoa-New Zealand. *Journal of Flood Risk Management, 16*(4): e12944. https://doi.org/10.1111/jfr3.12944.

[7] Eriksen, N., (1986) *Creating Flood Disasters.* Water & Soil Miscellaneous Publication No.77 (ISSN 0110-4705). Wellington, New Zealand: Ministry of Works and Development; and see also Town and County Planning Act 1977

[8] CDEM. (2024). *Review of reviews*. New Zealand Government; and see also New Zealand Government. (2023). *Outrage to optimism: Report of the ministerial inquiry into land uses associated with the mobilisation of woody debris and sediment in Tairāwhiti/Gisborne and Wairoa districts.* New Zealand Government.

that capability and capacity has diminished. The result is that New Zealand could have had an integrated disaster management and climate adaptation regime embedded within its socio-political-economic system if it listened to itself, but it does not.

This project assessed reviews of extreme event responses and pinpointed references to recurrent systemic issues.[9] The results of this in-depth analysis, and excerpts direct from the texts themselves are used throughout this report. One startling finding has been that many government inquiries specifically call attention to the failure of implementing previous disaster inquiries. We know we have a deficient system, yet we continue with the default reactive mode of response that is increasingly not fit for purpose with rising climate-induced risks. Risk reduction is a chimera.

The 2022 National Adaptation Plan (NAP) is a good example of the Climate Change Response Act 2002 (enabled by the Zero Carbon Amendment Act 2019) mandated response to the National Climate Risk Assessment.[10] The NAP clearly demarcates avenues for integration of agencies with a broader mission of adaptation to climate impacts.[11] It sets out to embed 'climate resilience across government policy'.[12] The question is why the state has lagged in its attention to implementation of the numerous recommendations: that is – a long-term systemic focus—rather than skipping between ad hoc, short-sighted, fragmented, and sometimes contradictory responses.

This incoherence stymies local government momentum on implementing adaptation workstreams in tandem with their constituents. All the while, councils under pressure must focus on their much-needed day-to-day business such as three-waters management, housing and subdivision infrastructure supply and planning processes. This increasingly risks entrenching maladaptation and sunk/prohibitively high transition costs down the track.

This report is not the first to identify a pattern of reiterating the same lessons repeatedly. Our surveyed review literature found routine identification of failure to implement lessons learned. For example, from the Better Responses Review 2017:

> *We are aware than [sic] many of the recommendations of this review are not new. They have been considered previously, in the context of other reviews of*

[9] See Figure 1 'SANKEY Diagram of Surveyed Review Literature Post Disaster report literature and identified issues' on p 10
[10] Climate Change Response Act 2002, s 5ZP ; and see also Zero Carbon Act 2019
[11] Climate Change Response Act 2002, s 5ZS.
[12] Eriksen, N., (2024). Creating flood disasters: New Zealand's oscillating history. *Policy Quarterly, 20*(3), 52–60.

> *the system, of events, or of exercises. However, progress on actioning them appears to have been patchy or slow.*[13]

Identical sentiment is found in the Government Inquiry into the Severe Weather events on the North Island between 2023-2024:

> *The wide-ranging recommendations in this report are interconnected and should be considered as a package. We are frustrated that many of these recommendations are not new and are suggested in previous reviews.*[14]

This was again acknowledged in the Response from the DPMC:

> *The issues raised are not new. They are the same issues we've heard from previous reviews and inquiries. It is time we ask ourselves 'how can we make sure it is different this time?'.*[15]

These repeated findings display staggering institutional amnesia and inertia with a routine default to short-termism. The simple message is that New Zealand defaults to short term expediency. This delays urgent action that could progressively reduce risks and community hardship. Within post disaster reporting there is a stockpile of disaster management experiences to inform anticipatory measures ahead of worsening climate impacts. We already have the answers. We ignore them.

1.1 Research Questions:

This report seeks to unpack the topic of New Zealand's repeat reactive style in two parts:

> **PART 1: Identifying the Problem**
>
> RQ1 Why do we have this reactive style in NZ to extreme weather events and climate risks?
>
> R1.1 What characterises a reactive response to extreme events and climate risks?
>
> R1.2 What is the evidence that New Zealand takes a short-term reactive approach to extremes events and ongoing climate changes?
>
> R1.3 What are the consequences of continuing a short-term reactive risk management approach?

[13] New Zealand Government. (2018). *Delivering Better Responses to Natural Disasters and Other Emergencies: Government Response to the Technical Advisory Group's Recommendations*, 8.
[14] New Zealand Government, (2024) *Report of the Government Inquiry into the Response to the North Island Severe Weather Events*. Available at https://www.dia.govt.nz/Government-Inquiry-into-the-Response-to-the-North-Island-Severe-Weather-Events, [7].
[15] Department of Prime Minister and Cabinet (2024) *Strengthening Disaster Resilience and Emergency Management* (Oct 2024), 5.

PART 2: Enablers of poor decision making

R2.1 What broad categories of barriers have been repeatedly identified in post-disaster review documents and surveyed literature?

R2.2 How do these barriers and enabling conditions manifest as gaps in actioning risk reduction?

The surveyed literature includes post-disaster response documents, government agency reports, expert working group and independent reference group outputs. This has been augmented with relevant domestic and international literature, with application to New Zealand.

1.2 Definitions

At the outset, a distinction should be made between 'Response', 'Recovery' and 'Anticipatory Adaptation'. Many of the reports cited are focusing on the former not making links with the latter. Here we briefly define and contextualise key terms used throughout this report, many definitions taken directly from the IPCC AR6 Glossary.[16]

1.2.1 Risk

Traditional definitions of 'risk' couched solely in terms of 'likelihood', vulnerability and probability' obscure key elements of 'deep uncertainty' associated with climate-related hazard projections.[17]

> *In the context of climate change impacts, risks result from dynamic interactions between climate-related hazards with the exposure and vulnerability of the affected human or ecological system to the hazards. Hazards, exposure and vulnerability may each be subject to uncertainty in terms of magnitude and likelihood of occurrence, and each may change over time and space due to socio-economic changes and human decision-making.*[18]

This definition distinguishes hazard from risk using the uncertainty definition as used in the New Zealand National Coastal Hazards and Climate Change Guidance (2024).[19] Importantly, 'hazard'

[16] Intergovernmental Panel on Climate Change. (2022). *AR6 Working Group II: Annex II—Glossary*, available at: https://www.ipcc.ch/report/ar6/wg2/chapter/annex-ii/

[17] Bell, R. (2021) *The New and Adaptative Paradigm needed to manage Rising Coastal Risks*. NZAIA, available at https://www.nzaia.org.nz/robbell.html, 8.

[18] Intergovernmental Panel on Climate Change. (2022). *AR6 Working Group II: Annex II—Glossary*, available at: https://www.ipcc.ch/report/ar6/wg2/chapter/annex-ii/, 'risk'.; and see also: Reisinger, A., Howden, M., Vera, C., et al. (2020) *The Concept of Risk in the IPCC Sixth Assessment Report: A Summary of Cross-Working Group Discussions*. Intergovernmental Panel on Climate Change, Geneva, Switzerland, 15.

[19] Ministry for the Environment (2024). *Coastal Hazards and Climate Change Guidance*. Lawrence, J; Bell, R.G. (Lead Authors). Ministry for the Environment Publication ME 1805. ISBN: 978-1-991140-05-0. https://environment.govt.nz/publications/coastal-hazards-and-climate-change-guidance/

is not risk, and 'risk' includes uncertainty, which is often unresolvable into the future; thus requiring the use of scenarios and associated hazard projections to assess risk, and stress testing adaptation options for their robustness across a range of futures.

1.2.2 Residual Risk

Not all risks can be partially or fully mitigated and with climate change intensifying, climate risks will continue to escalate.

> *The risk related to climate change impacts that remains following adaptation and mitigation efforts. Adaptation actions can redistribute risk and impacts, with increased risk and impacts in some areas or populations, and decreased risk and impacts in others.*[20]

1.2.3 Hazard, compound hazards and 'cascading' risks

A hazard is defined as:

> *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.*[21]

Conventional thinking on natural hazards has often placed them in silos. 'Earthquakes' are sorted into one box, 'floods' another, 'coastal hazards' another, 'fire' yet another and so forth. This siloed thinking is changing in both climate and disaster literature.[22] There is increasing awareness of hazard interrelatedness, and how an initially isolated hazard event can influence further secondary hazards. For example, an earthquake destabilises land and can cause landslides or leave that land more prone to rain-induce landslides in future. Vice-versa, rising groundwater levels in coastal lowlands from sea-level rise raises potential for liquefaction in an earthquake.

1.2.4 Adaptation

From the IPCC glossary.

> *In human systems, the process of adjustment to actual or expected climate and its effects, in order to moderate harm or exploit beneficial opportunities.*

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[20] Intergovernmental Panel on Climate Change. (2022). *AR6 Working Group II: Annex II—Glossary*, available at: https://www.ipcc.ch/report/ar6/wg2/chapter/annex-ii/ , 'residual risk'.
[21] Intergovernmental Panel on Climate Change. (2022). *AR6 Working Group II: Annex II—Glossary*, available at: https://www.ipcc.ch/report/ar6/wg2/chapter/annex-ii/, 'hazard'.
[22] Lawrence, L., Blackett, P., Cradock-Henry, NA., (2020) Cascading climate change impacts and implications. *Climate Risk Management, 29*. 100234 https://doi.org/10.1016/j.crm.2020.100234.

> *In natural systems, the process of adjustment to actual climate and its effects; human intervention may facilitate adjustment to expected climate and its effects.*[23]

Ideally, climate change adaptation installs, monitors and switches options pre-emptively to both progressive climate-influenced changes and compound hazards and cascading risks over a longer time frame than reactive civil defence emergency management (CDEM) plans are typically developed for, which focus on the emergency and immediate aftermath.

1.2.5 Disaster Risk Reduction (DRR)

DRR concerns measures put in place to lessen impacts of a major event, improve readiness and respond to damage and loss. This includes measures undertaken to minimise secondary hazards and aid recovery. While many of the impacts covered are similar, a key distinction between DRR and climate change adaptation is the timeframes. For example, the 5-year CDEM National Civil defence emergency management plan cycle[24] versus the "at least 100 year" planning horizon for addressing coastal adaptation in the NZ Coastal Policy Statement 2010.[25]

1.2.6 Resilience

The IPCC definition of 'resilience' is:

> *The capacity of interconnected social, economic and ecological systems to cope with a hazardous event, trend or disturbance, responding or reorganising in ways that maintain their essential function, identity and structure. Resilience is a positive attribute when it maintains capacity for adaptation, learning and/or transformation.*[26]

The framing of resilience is constantly evolving. Definitions differ depending on whether uncertainty is part of each definition. This includes varying understandings of how different types of hazards require different assessment processes. For example, where uncertainty is high scenarios should be used to stress test adaptation options for their sensitivity to future climate changes over longer timeframes, as for sea-level rise impacts.

Conceptually, resilience understood in terms of the 'bounce-back' framing is inherently reactive. It is temporally situated *after* the event and seen through the lens of recovery response. This

[23] Intergovernmental Panel on Climate Change. (2022). *AR6 Working Group II: Annex II—Glossary,* available at: https://www.ipcc.ch/report/ar6/wg2/chapter/annex-ii/, 'adaptation'.
[24] Civil Defence Emergency Management Act 2002, s 46.
[25] Note: the proposed NPS on natural hazards has a 100-year planning horizon built in for managing significant natural hazards; New Zealand Government. (2010) *New Zealand Coastal Policy Statement 2010*. Department of Conservation.
[26] Intergovernmental Panel on Climate Change. (2022). *AR6 Working Group II: Annex II—Glossary*, available at: https://www.ipcc.ch/report/ar6/wg2/chapter/annex-ii/, 'resilience'.

can be contrasted with anticipatory learning and planning, which *pre-emptively* seeks to avoid hazards and future risks through a lens of adaptive capacity and foreseeable damages.

The following sections address each of the research questions in turn.

2 Identifying the Problem:

2.1 Characterising A Reactive Style of Natural Hazard and Climate Risk Management

History shows that we move on quickly after extreme hazard events with a focus on the proximate event.[27] Lessons learned are not transferring to the immediate responses and their follow up. The problem is a complicated attention deficit issue that combines political default to short termism with willing institutional amnesia (often in the belief it won't happen again for a long time).

Attention generated by extreme events fails to spur long-term change. Instead it appears to focus on short-term fixes, even with external shocks as a catalyst. Coordinated communication of an issue's urgency is no guarantee of ascension to the political agenda. And in a context of climate adaptation there is also a risk of 'over' catastrophising the issue and paralysing political will by its seeming complexity for longer-term planning and action.[28]

It is a difficult communication task to shift the attention towards systemic change. While extreme events are widely touted as opportunities to discuss and ground live experience into wider causative issues, this report shows how New Zealand routinely falters on implementing the lessons highlighted and bolstering the adaptive capacity needed to improve resilience.

The issue is increasingly salient with the emergence of compound hazards and cascading climate risks. As discourses of disaster response and climate adaptation are increasingly blurred or dealt with separately, cogent efforts to design integrated pre-emptive policy responses must compete with more noise.

[27] Disaster event memory anchoring is a complex set of selective interactions:
See from Hamburg Corinna de Guttry, Beate Ratter, (2022) Expiry date of a disaster: Memory anchoring and the storm surge 1962 in Hamburg, Germany. *International Journal of Disaster Risk Reduction, 70*, 102719, ISSN 2212-4209, https://www.sciencedirect.com/science/article/pii/S2212420921006804#bib2

[28] Intergovernmental Panel on Climate Change. (2022). *AR6 Working Group II: Impacts, adaptation and vulnerability*. https://www.ipcc.ch/report/ar6/wg2/, Ch 17, 2543.

2.2 Evidence of New Zealand's reactive response

In post event analysis, New Zealand seeks to connect disaster preparedness and the larger climate change resilience picture. This linkage is made explicit in "Outrage to optimism", a report commissioned in the wake of debris flow damage causing havoc in Tairawhiti:

> *'[59] A just transition for Tairawhiti and Wairoa is about how we equitably adapt to climate change, but it is also about how we equitably transition to our broader aspirational state. With changes to land use will come changes in the working and living situations of people in the region, and these changes will present both costs and opportunities.'*[29]

Multiple reports in the reviewed literature conclude along similar lines. That long-term mechanisms feeding into a larger climate adaptation objective should be embedded into existing hazard response governance has not resulted in systemic change.

2.2.1 Reports, Reviews, and Inquiries

Our primary assessment examined post-event reports, ministerial inquiries and independent reviews across various natural hazard events spanning the last 10 years. Many of the issues repeatedly raised in these reports echo Ericksen's observations of 40 years ago. Table 1 extracts key themes and issues that arose throughout close reading, with the sample literature hereafter referred to as 'surveyed review literature'.

[29] New Zealand Government. (2023). *Outrage to optimism: Report of the ministerial inquiry into land uses associated with the mobilisation of woody debris and sediment in Tairāwhiti/Gisborne and Wairoa districts,* [59].

Table 1: Reports by year and theme	
Year/Review	Common themes
Ministry of Civil Defence and Emergency Management (2016) *East Cape Earthquake and Tsunami 2 September 2016: Post Event report (National Emergency Management Agency response)*: MCDEM (2016 ECe&t)	Fragmented expertise and capacity, p1 Unclear Responsibility distribution during states of emergency, p9
Ministry of Civil Defence and Emergency Management (2016) *Kaikōura Earthquake and Tsunami 14 November 2016: Post Event Report.* MCDEM (2016 KE&T)	Fragmented Expertise and Capacity, p3 Under resourced local authorities [5.2.1]
New Zealand Government. (2017). *Ministerial review: Better responses to natural disasters and other emergencies*. (2017 BRtND MinRev)	Failure to learn from previous reviews, p9 Fragmented expertise and capacity, p1 Unclear Responsibilities during emergency, p26
2017 Australian Fire and Emergency Service Authorities Council (2017) *Independent Operation Review: Port Hills Fires – February 2017*. Prepared for Fire and Emergency New Zealand	Fragmented capacities and lack of interoperability (p8)
Smol (2018) *Review of the Response to the Auckland Storm of 10 April 2018. A report to the Auckland Coordinating Executives Group*. Rimu Road Consulting.	Unclear Responsibilities during emergency (p14)
New Zealand Government (2018) *Delivering better responses to natural disasters and other emergencies*. Wellington. (2018 GovRes DBRtND)	Unclear Responsibilities during emergency [1.6] Outdated legislative framework [6.1]
Ministry of Civil Defence and Emergency Management (2019) *Tasman District Fire Response 5 – 27 February 2019: Post Event Report*. MCDEM (2019 TDFres)	Unclear Responsibilities during emergency Fragmented expertise and capacity [4.3.1]
(2020) Public Inquiry into Earthquake Commission – Uiuinga Tūmatanui ki te Kōmihana Rūwhenua (2020) *Report of the Public Inquiry into the Earthquake Commission: March 2020.* DPMC (2020 PIiEQCres)	Unclear Responsibilities during emergency (p19) Failure to learn from previous reviews, p19 Outdated legislative framework, p21
National Emergency Management Agency (2021) *Hikurangi and Kermadec Islands Earthquakes 5 March 2021: Post Event report (NEMA response)*: NEMA	Siloed Risk roles for assessment [5.2]
2023 Bush International Consulting (2023). *Mike Bush Report: Auckland Anniversary Floods*. (2023 IndRevAAF)	Failure to learn from previous reviews, (p14, p24, p56) Unclear Responsibilities during emergency (p14, p29, p47, p59)

2023 New Zealand Government (2023) *Outrage to Optimism: Report of the Ministerial Inquiry into Land Uses Associated with the Mobilisation of Woody Debris and Sediment in Tairāwhiti/Gisborne and Wairoa Districts.* Wellington. (2023 OutragetoOp)	Outdated infrastructure [6], [16] Under resourced local authorities [7] Under-resourced monitoring and compliance [27]
2024 Bush International Consulting. (2024). *Hawke's Bay Civil Defence and Emergency Management Group response to Cyclone Gabrielle*. Wellington, New Zealand (2024 IndRevHBCD)	Unclear Responsibilities during emergency (pp33-34) Outdated legislative framework (pp8, 28) Failure to learn from previous reviews (p8)
New Zealand Government (2024) *Government response to the ministerial Inquiry into land use for Tairawhiti – Gisborne and Wairoa*. Cabinet Paper. Ministry for Environment. (2024 GovResTaiGis)	Existing regulatory instruments too permissive [41.3],[50][58], [Appendix R18]
2024 Hawkes Bay Regional Council (2024) Hawke's Bay Independent Flood review – Pae Matawai Parawhenua. HBRC (2024 HBIndFloodRev)	Failure to learn from previous reviews p5 Existing regulatory instruments too permissive p152 Outdated infrastructure p117-118
2024 New Zealand Government (2024) *Report of the government inquiry into the response to the North Island severe weather events*. Wellington (2024 NISWE Inq)	Failure to learn from previous reviews [i.7][4.169][4.182] Outdated legislative framework. [i.37][i.43][i.R4:A], [1.26][1.32], [2.58][4.156] existing regulatory instruments too permissive [1.35] Outdated infrastructure [1.35][1.36][5.217][5.222][5.241]
CDEM. (2024). *Review of reviews*. New Zealand Government (2024 ReviewofReviews)	Unclear Responsibilities during states of emergency [3.6.4] Outdated legislative framework [3.2.2]
DPMC (2024) *Strengthening Disaster Resilience and Emergency Management*, New Zealand Government (2024 SDRaEM DPMC)	Unclear Responsibilities during states of emergency, (p20) Failure to learn from previous reviews, p5, 23

2.2.2 The Sankey Chart

A Sankey Chart is an effective way of illustrating the repeated issues raised throughout the surveyed review literature. The data informing the chart, as well as a plain text file, can be found in the Appendix material.

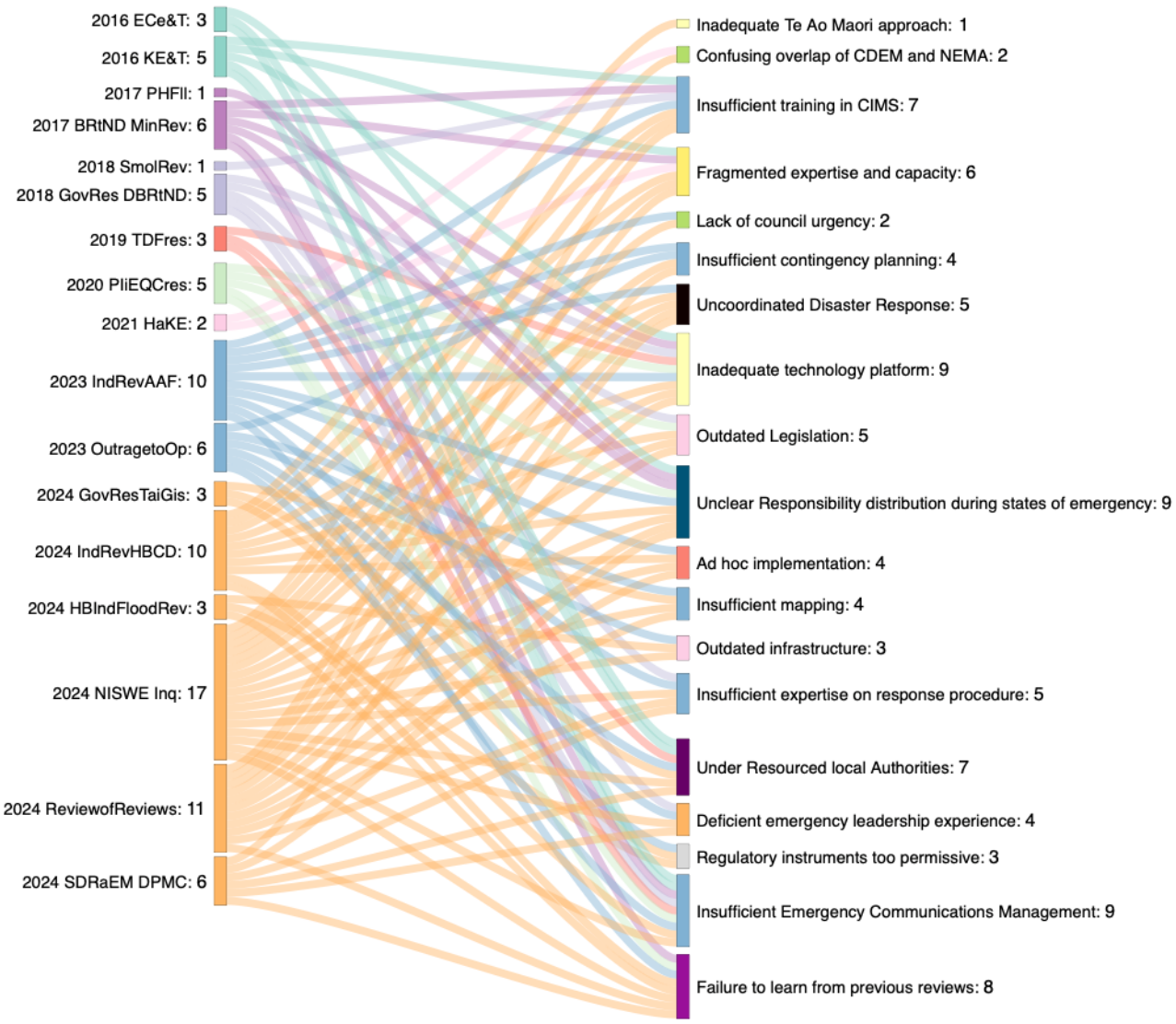

Figure 1 SANKEY Chart showing findings throughout surveyed review literature.

KEY: Left - Nodes denote post disaster review documents (Table1) annotated with total number of identified issues. Node and flow pathway colour denote year of publication. Right – Nodes denote common findings from these reports and total number repeated across documents. Chart shows at a glance via the strands how the same issues are raised in post disaster analysis year on year.

This chart shows how the many of the same issues have been raised across reviews reaching back as far as a decade. And Ericksen having identified many of those same issues over 40 years ago. The connector colours denote separate years. Notably, many of the same topics are raised as unaddressed issues throughout all the surveyed disaster review documents. With the overarching failure to enact systemic change, a recurrent theme throughout the reports and supporting academic literature studied.

2.2.3 Evidence of New Zealand's reactive response

There are two key findings. The first is the similarity of the themes across the reports constituting our surveyed review literature. Identified issues are grouped into six themes (leaving aside initial emergency management responses and training).

1) Institutional amnesia—an inability to learn from previous reviews
2) Unclear responsibilities during emergencies—persistently ambiguous "who does what, when?"
3) Hard-infrastructure path dependency—over-reliance on protections that lock in exposure
4) Legislative gaps and misalignments—laws that are outdated, permissive, or unintegrated

5) Uncoordinated governance—opaque policy hierarchies, incoherent instruments; and

6) Fragmented expertise and under resourced local authorities—over-reliance on consultants, under funding and under-training.

An effective response is built on lessons of the past and what we know is changing now, more intensely, frequently and compounding in the future. Extreme weather events will continue causing damage and loss in New Zealand alongside ongoing changes from sea-level rise, exacerbated by compounding hazards and cascading risks. In the wake of extreme weather events, retrospective inquiries into the central government, regional and local response consistently single out the short termism of current CDEM response arrangements and call for a more integrated anticipatory systems approach which is adaptive and pre-emptive in preparation.[30]

The second key finding concerns how each identified issue relates to the reactive style of the response. Many issues stemming from this style are already identified and analysed across domestic and international literature. There is a growing consensus in these reports and academic literature of the inadequacy posed by reliance on reactive —often site-specific— short-term or quick responses. They advocate for planned transformative policy alternatives ahead of the growing challenge posed by increased frequency and intensity of extreme events.[31]

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[30] Lawrence, J., Boston, J., Bell, R., et al, (2020). Implementing pre-emptive managed retreat: constraints and novel insights. *Current Climate Change Reports* DOI: 10.1007/s40641-020-00161-z; Lawrence, J., (2015). *The adequacy of institutional frameworks and practice for climate change adaptation decision making*. Open Access Te Herenga Waka-Victoria University of Wellington. Thesis. https://doi.org/10.26686/wgtn.17012492.v1 ; and see also Climate Change Adaptation Technical Working Group (2018) *Adapting to Climate Change in New Zealand: Recommendations from the Climate Change Adaptation Technical Working Group*. (CCATWG). Wellington, NZ (Lawrence & Nelson Co Chairs).

[31] Lawrence, J., Wreford, A., Blackett, P. et al (2023). Climate Adaptation through an integrative lens in Aotearoa New Zealand. *Journal of the Royal Society of New Zealand, Special Issue on Climate Change* https://doi.org/10.1080/03036758.2023.2236033.

However, New Zealand has made little progress in addressing these calls for proactive adaptation action. The Climate Change Commission writes:

> *The first national adaptation plan does not present a clear and coherent plan of action to drive change at the scale and pace required. A more strategic approach to adaptation planning, and to the development of all national adaptation plans, is needed.* [32]

New Zealand remains shackled to *ad hoc* response structures that increase societal and financial cost. This ramshackle approach lacks the certainty and consistency required to manage post-event recovery that integrates DRR and climate adaptation. Stagnation occurs despite constant reiteration of lessons learned that are apparently ignored – sometimes wilfully in the context of other more immediate problems and a 3-year election cycle that incentivises quick fixes.[33]

Appropriate attention must be given to the problem caused by taking such a piecemeal approach and the inability to join up the (now well established) findings posited by numerous inquiries that highlight policy alternatives.

2.3 Costs and Consequences

New Zealand continues to face disasters from natural hazard events. These events are exacerbated by climate change and result in large response costs. For example, since 2010 total estimated costs are around NZ$64B, of which around half were losses incurred by private insurers.[34] In 2023 alone, Cyclone Gabrielle and the Auckland Anniversary Floods incurred recovery costs of between 9-14 billion. On top of an estimated $64 billion in private insurance payouts since 2010, there is a staggering disproportion between central government's response and recovery funding and pre-emptive expenditure on risk reduction and resilience.[35] This is not sustainable.[36] Reducing the inevitable rise in costs from future impacts is paramount.[37]

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[32] He Pou a Rangi Climate Change Commission (2024) *Report assessing progress on implementation and effectiveness of the first national adaptation plan*, 15.
[33] Figure 1 'Figure 1 SANKEY Diagram of Post Disaster report literature and identified issues'
[34] Wells, CA., et al, (2023). Using the Implementation Centric Evolving Climate Change Adaptation Process to bridge the gap between policy and action. *Frontiers in climate, 5,* 2.
[35] Whiting, A., (2025) *New Zealand's 64b spend on natural hazards heavily skewed to recovery over resilience*, IAG Sapere Report, [2.3].
[36] IAG. (2023). *Meeting the cost of natural hazards: A briefing to the incoming government*. Wellington, New Zealand.
[37] New Zealand Government, (2024) *Report of the Government Inquiry into the Response to the North Island Severe Weather Events*. Available at https://www.dia.govt.nz/Government-Inquiry-into-the-Response-to-the-North-Island-Severe-Weather-Events, [6.257]; and citing; IAG. (2023). *Meeting the cost of natural hazards: A briefing to the incoming government*. Wellington, New Zealand.

Box 1. Westport example

The response by the Government to the 2021 floods in Westport, discounts the future benefits for a lesser investment today by only supporting flood defences, as opposed to funding support for the council's comprehensive adaptation master plan that includes identification of suitable land for purchase for progressive relocation of Westport that would remove the risk. This illustrates how institutional amnesia perpetuates New Zealand's reactive style based on short-termism. This will be enabled by the proposed Planning Bill even though the definition of "natural hazards" includes the effect of climate, because it emphasises "protect" for subdivision consents (Planning Bill, 2025, sch 7 cl 6).

The result is a textbook perverse economic incentive. Central government (apparently) "rewarding" failure to act anticipatorily with financial support. Meanwhile funding and coordination for local and regional authorities acting preventatively in anticipation of further damages is de-prioritised. There is also *a possibility* that local government could be incentivised to forego resilience centric expenditure in their constrained budgets on the expectation that central government will foot the bill e.g., on flood protection schemes.

The Westport example illustrates how New Zealand's reactive approach delays implementation of a comprehensive adaptation plan. It does so by entrenching hazard exposure and increasing residual risk by locking decisionmakers into a cycle of ad hoc recovery-based and protection-centric investment. This guarantees higher costs in future, and hinges on the exact dynamic of doubling down behind flood protections described by Ericksen. Additionally, the government response may be to limit Crown assistance for buy-outs only till 2035 (IRG, 2025), and/or apply rates caps on councils to limit expenditure. Applying a sunset policy on Government assistance is unlikely to survive politically due to inequitable outcomes for those unable to afford to move away from risk. That said, it *may* incentivise precautionary land uses and consenting, but only if legislation gives stronger direction and joined up legislation and resources that enables councils to avoid the present and rising risks.

Westport's experience (Box 1.) reflects deeper structural issues, institutional amnesia and perverse economic incentives borne of chronic short termism. The Climate Change Response Act and the National Adaptation Plans (NAPs) were designed to spur progress through longer-term central funding streams. However, development of funding mechanisms has been

underwhelming, the North Island Severe Weather Events Report 2024 (NISWE 2024) report notes the investments are simply insufficient to address the identified issues:[38]

> *The Inquiry considers the current investment in readiness and resilience activities is not sufficient to ensure councils are prepared for the next event. The significant amount of money that flows from central government during and after emergency events shows that money is available, but spending needs to be refocused. The Inquiry recommends the Government increase the appropriation for the existing contestable fund to support a significant uplift in community readiness and resilience across New Zealand.*[39]

The inquiry makes this recommendation not for the first time, with anticipatory community resilience initiatives repeatedly raised in disaster response reports and constituting a major reflection on the scale of impact caused by Cyclone Gabrielle.[40] If there had been systems in place to further elevate the work that communities were already doing, the impact would have been less.[41] Most *ad hoc* response funds have been applied case-by-case, rather than channelled via a long-term strategy. The result is greater difficulty in forecasting, planning and procuring finance. On the other hand, where local authorities have pro-actively sought to install pre-emptive and systemic land-use based change, have been denied the funding capacity to do so by government.[42] (e.g. Hawkes Bay, Westport and Napier)

There is a public safety cost in failing to implement long term adaptation strategies, and continued reliance on reactive responses. Protections often lead to increased development behind "protections" due to a (often false) sense of security created to those living behind them –referred to as the "levee effect".[43]

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[38] New Zealand Government, (2024) *Report of the Government Inquiry into the Response to the North Island Severe Weather Events*. Available at https://www.dia.govt.nz/Government-Inquiry-into-the-Response-to-the-North-Island-Severe-Weather-Events, [6.264-5].

[39] New Zealand Government, (2024) *Report of the Government Inquiry into the Response to the North Island Severe Weather Events*. Available at https://www.dia.govt.nz/Government-Inquiry-into-the-Response-to-the-North-Island-Severe-Weather-Events,[6.264-5]; and citing; National Emergency Management Agency, "CDEM Resilience Fund", NEMA, available at: https://www.civildefence.govt.nz/cdem-sector/cdem-resilience-fund.

[40] New Zealand Government. (2023). *Outrage to optimism: Report of the ministerial inquiry into land uses associated with the mobilisation of woody debris and sediment in Tairāwhiti/Gisborne and Wairoa districts*. New Zealand Government

[41] Bush International Consulting. (2024). *Hawke's Bay Civil Defence and Emergency Management Group response to Cyclone Gabrielle*. Wellington, New Zealand

[42] For comprehensive insight on long term adaptation in Hawkes Bay area see: Ryan et al. (2022). Formulating a 100-year strategy for managing coastal hazard risk in a changing climate: Lessons learned from Hawke's Bay, New Zealand. *Environmental Science & Policy* 127. https://doi.org/10.1016/j.envsci.2021.10.012.; and see NZ Herald. (2025). *Gisborne District Council Stands by Land Transition Business Case Costing and Approach*. Accessed March 10, 2026. https://www.nzherald.co.nz/gisborne-herald/news/gisborne-district-council-stands-by-land-transition-business-case-costing-and-approach/UQDSMDXXLFDOFGPEKVLXZRM3YU/.

[43] Eriksen, N., (1986). *Creating Flood Disasters*. Water & Soil Miscellaneous Publication No. 77.

Reliance on reactive responses impact disproportionately across socioeconomic strata, on top of the increasing exposure of people to residual harm. Those at lower deciles are –and will continue to be– are less able to act in response to any market signals about increasing risk e.g. insurance affordability or targeted rates to fund hazard protection measures. In fact, market signals may further immobilise some groups of people which are likely to be more reliant on ad hoc government response.[44]

3 Enablers of Poor Decision Making

We now unpick conceptual, institutional and legislative drivers of New Zealand's reactive style to managing natural hazard and climate change impacts. We show how the issues identified in part 1 feed the inertia arising from ad hoc policies and practice. In doing so, this part demonstrates why institutional amnesia damages pre-emptive resilience.

The disconnect between issues identified through research or retrospective examination (like a disaster response review) and actual structural change is facilitated by numerous barriers to adaptation action.[45] For example this passage from a case study in the Yukon:

> *Research reveals a common theme: climate impacts have prompted communities in the Yukon to pursue adaptation, however, progress has waned and implementation of adaptation policies lags in practice.'*[46]
>
> *[…]*
>
> *the process of planning for adaptation at the local level is further challenged by a lack of clarity on roles and responsibilities, limited communication, and weak collaboration between local and territorial governments.'*[47]

As a result, local authorities upon receipt of *ad hoc* funding from government often only able to reinforce existing channels of recovery and rebuild *in situ*, rather than directly meet causes or aggravators of underlying exposure since the funding is limited.[48] This creates an inertia within institutions that stifles development of preventive resilience-based actions and options and the

[44] Tombs, BD., (2023) *Property Purgatory*. OUR Thesis Archive. University of Otago.
[45] Lee, PD., (2022) Towards a deeper understanding of barriers to national climate change adaptation policy: A systematic review. *Climate Risk Management 35*, 100414; and also see Wells, C. A., et al. (2023). Using the implementation-centric evolving climate change adaptation process to bridge the gap between policy and action. *Frontiers in Climate*, 5(2).
[46] Birchall, SJ., Bonnet, N., Rose, D., Gilchrist, E,. (2025). Factors contributing to climate adaptation lag in practice: Insights from local and territorial government interactions. *Environmental Science & Policy, 4*.
[47] Birchall, SJ., Bonnet, N., Rose, D., Gilchrist, E,. (2025). Factors contributing to climate adaptation lag in practice: Insights from local and territorial government interactions. *Environmental Science & Policy, 4*.
[48] Bell, R., (2021) The new and adaptative paradigm needed to manage rising coastal risks, *Impact Connector 12*, NZAIA. https://www.nzaia.org.nz/robbell.html

building of expertise in applying this type of thinking. The Sankey chart shows how this disconnect is frequently highlighted in New Zealand's post-disaster review literature, and it is now receiving increasing public attention in the media.[49]

The reality is that New Zealand is very adept at post disaster analysis. A multi-hazard prone landscape provides ample opportunity. However, New Zealand is poor at remedying identified problems with long-term systemic measures. Why is this? What drives this focus? And what can we do about them? We discuss a selection in relation to a pre-emptive adaptation system.

3.1 Institutional amnesia

This report engages with many of the issues identified down the right side of the Sankey chart (Figure 1). Here we emphasise 'failure to learn from previous reviews' as an illustration of institutional amnesia. Failure to learn was a key theme in reports on the impact of the 2023 Auckland Anniversary Flood and Cyclone Gabrielle events. Failure to learn was previously flagged in the more general 2017 assessment of how New Zealand could enhance its readiness for natural disasters.[50]

New Zealand quickly forgets disaster review findings, even though their frequency means they are often fresh in mind and experienced by many. Boston writes about how these moments should pose small windows of political opportunity.[51] Indeed, repeated flood hazards have in the past catalysed action. For example, in Kelso Otago, a 1/100 flood in 1978 and another 2 years later in 1980 prompted talk of 'relocation' and 'managed retreat'. Eventually, after a year, they did relocate, but the process was *ad hoc* and not necessarily 'managed' as discussed in the adaptation literature.[52] That increasing impacts affects public attention resonates with Kingdon's writing on the interaction of a repeated crisis, attention and urgency:

> *…awareness of a problem sometimes comes only with the second crisis, not the first, because the second cannot be dismissed as an isolated fluke, as the first could.*[53]

[49] Radio New Zealand. (2024). *Deadly storms expose growing gap between disaster recovery and climate preparation*. https://www.rnz.co.nz/news/national/585400/deadly-storms-expose-growing-gap-between-disaster-recovery-and-climate-preparation.; The Guardian. (2026, January 28). *New Zealand could experience an increase in deadly landslides as climate crisis fuels storms*. https://www.theguardian.com/world/2026/jan/28/new-zealand-landslides-climate-crisis-storm.

[50] New Zealand Government. (2017, November 17). *Ministerial review: Better responses to natural disasters and other emergencies*.

[51] Boston. J., (2019) *Anticipatory Governance in a Changing World* (BWB Texts).

[52] Mackenzie, J.; Bond, S.; Stephenson, J (2022). *Stories of Kelso*. Centre for Sustainability at the University of Otago Report, March 2022: https://hdl.handle.net/10523/12865.

[53] Kingdon, J. W. (1984). *Agendas, alternatives, and public policies*. Little, Brown, 99-100.

New Zealand's record is well beyond the point of 'isolated flukes'. However, no clear and comprehensive strategy for the inevitable more frequent has emerged. Clearly resilience and disaster readiness are two facets of a larger cogent approach, where a strong pre-emptive resilience rationale underpins decision making, and eases shock caused by catastrophic events. This was noted in terms of the 'ineffective prioritisation of some critical infrastructure restoration activities, and gaps in communication throughout the system' in the 2024 Severe Weather Events in the North Island Report.[54]

Coherent climate adaptation policy would dovetail neatly with a clear sense of disaster preparedness and with adaptation options ready and implemented that can reduce risk. Failing to integrate recommendations in the immediate wake of these findings has led to duplication and fragmentation of responses and a focus on recovery, predominantly in situ. The loss of institutional capacity also subtracts from the system's ability to implement cohesive long-term thinking. Additionally, the current system is at-capacity serving New Zealand's hazards as they arise. This fixing-the-plane-in-flight incurs opportunity costs for installing long-term pre-emptive measures and increases the future burden of potential maladaptation and associated transition costs as the frequency and intensity of climate changes driven hazards.

3.2 Responsibility Distribution and the Limits of Individual Agency

The 2025 Independent Reference Group (IRG) on climate adaptation firmly emphasised the role of individual recognition of risk as a driver of household resilience.[55] Unarticulated responsibilities of 'who does what when' was a common feature throughout the surveyed reports and review literature, however none of them came to the same conclusion as the IRG that recovery assistance and buy-outs should have a strict cut-off date in future.[56] The surveyed literature and the 2023 Expert Working Group on Managed Retreat[57] point more directly at systemic barriers. There are systemic and legislative gaps that need filling if households are to be left on their own. The Climate Change Commission has likewise noted 'the lack of a clear and

[54] New Zealand Government. (2024). *Report of the Government Inquiry into the Response to the North Island Severe Weather Events*. New Zealand Government, [5.288]
[55] Independent Reference Group on Climate Adaptation. (2025). *A proposed approach for New Zealand's adaptation framework*.
[56] Independent Reference Group on Climate Adaptation. (2025). *A proposed approach for New Zealand's adaptation framework*.
[57] Expert Working Group on Managed Retreat (2023) Report of The Expert Working Group on Managed Retreat: A Proposed System for Te Hekenga Rauora/Planned Relocation. Wellington: Expert Working Group on Managed Retreat. Available at: https://environment.govt.nz/assets/publications/climate-change/Report-of-the-Expert-Working-Group-on-Managed-Retreat-updated-08-24.pdf;' See also: Lawrence, J., Sullivan, F., Lash, A., Ide, G., Cameron, C., & McGlinchey, L. (2013) Adapting to changing climate risk by local government in New Zealand: Institutional practice barriers and enablers. Journal of Local Environment. Vol 72. Advance online, DOI: 10.1080/13549839.2013.839643.

coherent national framework' in clarifying roles and responsibilities as a high priority area for progressing New Zealand's climate adaptation.[58]

Over-focus on the influence of individual agency on resilience is an incoherent paradigm on which to build a policy response. It is blind to existing local and central government responsibilities concerning natural hazards risk, land-use planning and development. Over-focus on individual agency also distracts from the coordinating function of central government in relation to legislation, overarching policy frameworks, and funding. This incoherence seeps down to the local level in the form of specific challenges outlined in the evidence provided throughout the surveyed review literature, but neatly listed by the Intergovernmental Panel for Climate Change (IPCC) Working Group:

> *'Local governments face barriers such as limited capacity, unclear mandates, cross-departmental coordination issues, planning cycles, legal liability concerns, political appetite, and cost constraints.[59].'*

Local government can influence change through land-use planning, but this requires powers and funding instruments that do not yet exist. This issue appeared throughout the surveyed review literature.

To overemphasise individual responsibility on risk assessment and adaptation pins attention on a fraction of a larger issue that is essentially a collective one. This tunnel vision impairs a systemic view on the larger system at play and the potential tools to fix it through long-term spatial planning that accounts for the worsening of an ongoing changing climate. The irony is that over-emphasis on individual responsibility, (for what is ultimately a collective issue) stifles collective progress and capacity. It also increases recovery costs, increases uncertainty, disrupts economic activity, and ultimately puts human life in danger through lack of coordination and adaptation of land uses, infrastructure and lifeline utilities. It costs more, not less. The IRG report does well to outline the stakes but does not engage with the realities of what its proposed remedies are.[60]

The IRG and much of the surveyed review literature did agree on a broad need to assess land uses and representation of hazard risk as a pro-active precursor for reducing flood hazard.[61]

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[58] He Pou a Rangi Climate Change Commission (2024) Report assessing progress on implementation and effectiveness of the first national adaptation plan. Wellington

[59] Intergovernmental Panel on Climate Change. (2022). *AR6 Working Group II: Impacts, adaptation and vulnerability*. https://www.ipcc.ch/report/ar6/wg2 / 2022, (Section 17.4.2.1.3), 2583.

[60] Independent Reference Group on Climate Adaptation. (2025). *A proposed approach for New Zealand's adaptation framework*.

[61] Independent Reference Group on Climate Adaptation. (2025). *A proposed approach for New Zealand's adaptation framework*.

Indeed, the government has announced funding for a nationwide flood risk map.[62] However, systemic elements of law, policy and politic in New Zealand make anything beyond such increased access to risk information difficult and unappealing.[63] The failure to implement comprehensive systemic change is made worse by continual entrenching of private property interests and a strengthening of existing use protections in the proposed resource management reform.[64] The result is that people may unknowingly become more exposed to risk as climate adaptation measures fail to meet modern risk landscapes.[65]

3.3 Hard Defences leading to Pathway dependency

Adaptation discourse is often channelled into engineering and hard infrastructure measures. Eriksen's 1986 preoccupation with New Zealand's default to sea walls and flood levees foretold a precedence of 'protect' over planning approaches like avoidance and/or retreat.[66]

In *Creating Flood Disasters,* Ericksen in 1986 wrote about how New Zealand has always committed to altering the flood event as the hazard management response using structural protection. A flow-on "levee effect" has been the intensification of land uses behind those flood protections, in other words increasing the potential exposure (residual risk) to fluvial flood hazards.

Ericksen's point is that the way to reduce flood hazard therefore is to eliminate the likelihood of a flood or alternatively constrain land use in the floodplain. His case studies exemplify New Zealand's 'pathways dependency'.[67] Each structure built justifies doubling down into the next. This locks local government and communities into a maladaptation cycle.

> *In terms of flood risk, the chosen approach by law and policymakers has been to have the water adapt to humans, not the humans to the water. This has*

[62] Ministry for the Environment. (2025). *National flood risk map*. https://environment.govt.nz/what-government-is-doing/areas-of-work/climate-change/adapting-to-climate-change/national-adaptation-framework/national-flood-map/

[63] Grace, E., Ben France-Hudson, B., & Kilvington, M., (2019) *Reducing Risk through the Management of Existing Uses: Tensions under the RMA.* GNS Science Report 2019/55, Wellington.

[64] See: Peart, R., & Tombs, BD., (2023) *Current Legislation and Policy Framework for Managed Relocation: Working Paper 2 in Aotearoa New Zealand's Climate Change Adaptation Act: Building a Durable Future*. Environmental Defence Society.; Even the proposed Planning Bill cl 20 may further strengthen (even though there is provision of the management of natural hazards or consideration in subdivision (but way out is "protection" options - Schedule 7).

[65] Lawrence, J., Sullivan, F., Lash, A., Ide, G., Cameron, C., & McGlinchey, L. (2013). Adapting to changing climate risk by local government in New Zealand: Institutional practice barriers and enablers. *Local Environment, 18*(3), 298–320. https://doi.org/10.1080/13549839.2013.839643,; and also see Lawrence, J. (2015). *The adequacy of institutional frameworks and practice for climate change adaptation decision making* (Doctoral thesis, Te Herenga Waka—Victoria University of Wellington). https://doi.org/10.26686/wgtn.17012492.v1

[66] Eriksen, N., (1986). *Creating Flood Disasters*. Water & Soil Miscellaneous Publication No. 77.

[67] Bell, R., (2021) *The New and Adaptative Paradigm needed to manage Rising Coastal Risks* (NZAIA). available at https://www.nzaia.org.nz/robbell.html.

> *resulted in hard engineering and potential path dependency, where the infrastructure grows harder to maintain.*[68]

In other words, presence of risk appears to necessitate engineering responses despite clear policy alternatives. This is no more evident than in the popular PARA schema which puts "protect" first, and "avoid" last.

Protect – **A**ccommodate – **R**etreat – **A**void

This normalises delay over preventative measures while increasing residual risk by masking the need for avoidance or transformative measures. A 'build back better' approach in the wake of disasters seeks additional measures of resilience but often at a higher cost, by encouraging remaining in place with increased residual risk. In many cases a social and political premium is placed on quickly 'getting back to normal', even where that 'normal' is a state of vulnerability which disregards the 'new normal' of ongoing change and more frequent and intense impacts. The proposed Planning Bill 2025 provides for managing natural hazards including effects of climate change, which appears to prioritise hard engineering protections to protect the "normal" rather than preventative land uses.[69] Directive policy to give precedence to development and 'protection' can be illustrated by suggested language for the National Policy Statement for Natural Hazards (NPS-NH):

> *'Consideration of mitigation measures within the risk assessment process ensures that the potential use of land is maximised. In some cases, it will be up to proponents of the development to decide whether new developments are worthwhile, when taking into account the costs of mitigation measures.'*[70]

Mitigation used in an adaptation 'risk reduction' context as a first response refers to hard engineering responses, which usually supersede policy or legislative change(s).[71] There could be multiple reasons for this:

> ***B5 Overemphasis on certainty:*** *'the engineering mindset is common among those working on flood risk management and includes a belief that structural*

[68] Eriksen, N., (2024) Creating Flood Disasters: New Zealand's oscillating history. *Policy Quarterly 20(3)*, 52.
[69] Planning Bill 2025, available at: https://www.legislation.govt.nz/bill/government/2025/0235/latest/LMS1035958.html?search=sw_096be8ed81fedd98_%22natural+hazard%22_25_se&p=1.
[70] New Zealand Government: Ministry for the Environment | Manatū mō te Taiao. (2025) *Proposed Provisions – New National Policy Statement for Natural Hazards* (NPS-NH) Title: INFO 1308h New Zealand Government.
[71] Birchall, SJ., Bonnet, N., Rose, D., Erin Gilchrist, E,. (2025). Factors contributing to climate adaptation lag in practice: Insights from local and territorial government interactions. *Environmental Science & Policy, 4*.; Intergovernmental Panel on Climate Change. (2022). *AR6 Working Group II: Impacts, adaptation and vulnerability*. https://www.ipcc.ch/report/ar6/wg2/ 2582; Boston, J., (2024) *A Radically Different World.* BWBooks.

> *flood measures are the only realistic way to achieve certainty in preventing flooding. (7)*[72]

Frequently cited in 'maladaptation' literature, are seawalls that serve out their lifespan, and then simply incurs cost to maintain until it can no longer be raised as the sea advances. Seawalls thus become a metaphorical and physical barrier to adaptation planning.

3.4 Legislative Gaps

The reports and reviews surveyed show that the existing legislative frameworks for civil defence and emergency management no longer fit the broader purpose of effective risk reduction and climate change impact response. As evidenced in the 'Review of Reviews' (2024): [73]

> *The Civil Defence Emergency Management Act is now 22 years old and does not reflect current technology e.g. to allow for electronic signatures on declarations*

While the CDEM reform and the Emergency Management (EM) Bill (No. 2) incorporates risk reduction as a purpose. The EM Bill as introduced in Parliament in late 2025 does not include "climate change", "adaptation" or "relocate" therefore missing the opportunity to link with other legislation such as the Planning Bill and the Climate Change Response Bill, also being considered by Parliament.[74] Elsewhere, in the cabinet paper supporting the first National Adaptation Framework, it is proposed that the Recovery component of the CDEM Group Plans need to "give effect to" an Adaptation Plan.[75] However, there is no indication of how and when this would be integrated and implemented. There is also no link to the Climate Change Response Act adaptation functions of central government or to the monitoring and reporting progress on adaptation by the Climate Change Commission. These linkages would be essential for a joined up natural hazard and climate change policy framework with funding mechanisms added to enable adaptation planning and action to be implemented. An opportunity exists to rectify these shortcomings in the legal framework.

3.4.1 Incommensurate climate tooling

Local authorities enjoy few legal and policy tools to implement climate adaptation in an anticipatory manner. Few legal provisions enable long-term climate action, climate planning, or the use of planning tools like Dynamic Adaptation Pathway Planning (DAPP) that account for

[72] Brawley-Chesworth, A., Clarke, D. & Marks, D. (2025) *Addressing the Political Economic Barriers to Climate Adaptation in Ireland*. Environmental Protection Agency. Report 481. ISBN: 978-1-80009-258-7, 8.
[73] CDEM. (2024). *Review of reviews*. New Zealand Government, [3.2.2], 16.
[74] Emergency Management Bill (No. 2) 2025.
[75] Ministry for the Environment. (2025). *Establishing a National Adaptation Framework*. available at: https://environment.govt.nz/what-government-is-doing/cabinet-papers-and-regulatory-impact-statements/establishing-a-naf/

changing risk.[76] In the wake of devastating damages to Tairawhiti, the 'Outrage to Optimism' report highlighted lack of fit for-purpose tooling:

> *'this (the destruction/adverse outcomes) is all a reflection of the failure of the (Gisborne District Council) GDC to provide its communities with planning instruments that are fit for purpose. This dereliction of duty is visible in the state of the land, water, beaches, and infrastructure.'*[77]

Uncoordinated central and regional action is unsustainable.[78] For example, the Building Act ss 71-73 outline the mechanics of a broad prohibition on building where the land is prone to natural hazard. However, this is easily overcome and waivable provided the consent issuer is satisfied that the adverse effects have been managed on site (on a case-by-case basis).[79] Neither the provision nor the purpose account for the changing and progressive risks associated with climate change.

A major failing of the RMA 1991 has been that it did not rank the matters of national importance (s 6) in a way that would empower long term land use decisions on reducing risks from natural hazards. Likewise, the RMA is arguably too permissive for prospective development and does not clearly provide local authorities the capacity to pro-actively determine land uses in an anticipatory way to reduce hazard exposure. Subdivisions 'may' be denied based on natural hazard via s 106 but even then, only where proposals of mitigating measures with conditions outlined by ss 108 and 220 are not sufficiently convincing.[80]

In the proposed Planning Bill 2025, the capacity to deny subdivision based on natural hazard risk is still provided by cl 146.[81] However, coherent preventative controls on subdivision, or any other land use control may be hamstrung by strengthened recourse in the bill to existing use protections.[82] A potential outcome would be a high bar to surmount of any long-term land-use

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[76] Lawrence, J., Gallop, S., Marquardt, L., Bell, R., Blackett, P., Cradock-Henry, N.A., Wreford A. (2025). Dynamic adaptive pathways planning for adaptation: lessons learned from a decade of practice in Aotearoa New Zealand. *Journal of Integrative Environmental Sciences,* 22(1), available at: https://doi.org/10.1080/1943815X.2025.2451424.
[77] New Zealand Government. (2023). *Outrage to optimism: Report of the ministerial inquiry into land uses associated with the mobilisation of woody debris and sediment in Tairāwhiti/Gisborne and Wairoa districts,* [72].
[78] Milhorance, C., et al, (2022) Tackling the implementation gap of climate adaptation strategies: understanding policy translation in Brazil and Colombia. *Climate Policy, 22,* 1113, [5.1].
[79] Peart, R., Tombs, BD. (2023). *Current Legislation and Policy Framework for Managed Relocation: Working Paper 2 in Aotearoa New Zealand's Climate Change Adaptation Act: Building a Durable Future,* (Environmental Defence Society)
[80] Resource Management Act 1991, ss 106, 108 and 220; and for a relevant Environment Court decision on apparent clash between local government responsibilities ahead of natural hazard risk: see *Awatarariki Residents v Bay of Plenty* (2020) NZ Env; and *Otago Regional Council v Dunedin City Council & Holts* (2015) Env C 215.
[81] Natural Environment Bill 2025, cl 146.
[82] Natural Environment Bill 2025, cl 25 'existing uses'

based adaptation scheme seeking to limit existing residential uses, and likely a serious hurdle on subdividing land where that land is already zoned residential.

3.4.2 Insufficient climate specific provision

A hurdle for local authorities' climate adaptation teams is the lack of climate change specific wording in the current RMA, other than in a list of high-level matters to have particular regard to.[83] Specifically, although not mentioned in reviews, there is a serious gap in legislation for adaptation as there is no direction on land acquisition in a managed retreat scheme, whether as a pre-emptive adaptation plan or in a post-event recovery response. This is particularly important for any 'compulsory acquisition' in a managed retreat or relocation process.[84]

However, it is not yet clear whether managed retreat could be administered based on the Public Works Act 1981 legal definition. Currently, this statute determines price of acquisition as market price from willing seller to buyer. Where the purpose is managed relocation, the market price and assumptions baked into 'willing' seller are put under considerable stress. The implication being that the property's risk effectively reduces that property's market value to zero.[85]

For this reason, it is unsurprising that all local authorities' buybacks to effect localised managed retreat have utilised acquisition by voluntary agreement and have been highly *ad hoc*.[86] For example, the Hutt River City Centre Upgrade Project giving 'room for the river', has so far succeeded by relying on acquisition by agreement under The Public Works Act 1981.[87] This programme and one at Amberly employed the DAPP framework effectively to identify triggers for a successive actions. Amberly has also developed creative uses of existing land use tools for land acquisition to implement an eventual staged relocation of residents to another site.[88] That said, there is no rubric for implementing retreat or relocation at scale.

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[83] Resource Management Act 1991, s 7 'other important matters'
[84] Public Works Act 1981, s 16 'empowering acquisition of land'
[85] Tombs, BD., & France-Hudson, B. (2018). Climate Change Compensation: An Unavoidable Discussion. *Policy Quarterly, 14(4),* 50,;and also see Benjamin, BD., France-Hudson, B., Stephenson, J., & Ellis, E., (2021) Property Purgatory (2021) *Policy Quarterly 17(1),* 50.
[86] Hanna, White, Glavovic. (2020). The Uncertainty Contagion: Revealing the Interrelated, Cascading Uncertainties of Managed Retreat. *Sustainability, 12,* 736; doi:10.3390/su12020736.
[87] Greater Wellington Regional Council (GWRC) *Hutt Centre River Upgrade Project: River Corridor Options Report* (available at: https://www.gw.govt.nz/assets/Documents/2022/03/Hutt-River-Corridor-Managment-Plan_20220324_Final-1_compressed.pdf. Lawrence J., Haasnoot, M., McKim, L., Atapattu, D., Campbell, G., Stroombergen, A. (2019). From theory to practice: a timeline of interventions by a change agent with the developers and users of Dynamic Adaptive Policy Pathways (DAPP). In Marchau, V., Walker, W., Bloeman, P. Decisionmaking under deep uncertainty: From theory to practice. https://www.springer.com/us/book/9783030052515
[88] Allen, A. (2025). *Reimagining Transformative Managed Retreat: A Critical Reflection of Coastal Communities in Aotearoa New Zealand.* Presentation delivered to Climate Adaptation Futures Symposium. available at: https://vimeo.com/1134409163, at 46m 45s

Dynamic Adaptation Pathway Planning is a useful tool for local authorities to actively navigate adaptation by integrating thresholds and 'trigger points' to effect anticipatory adaptation plans that can respond to changing risk.[89] The ability of a DAPP to pivot when a pre-determined condition is triggered is crucial to addressing inherent uncertainties when making decisions, such as climate change effects on natural hazards and progressive permanent impacts like sea-level rise.

How adaptation plans will integrate with council business remains to be seen. Specifically, what legal triggers can be deployed to enable a locality's execution of a DAPP trigger (decision point) on the operative district plan alongside associated rules- and how. Triggers must be housed within an enabling legislative framework, otherwise they risk being unenforceable or overridden by seemingly more pressing issues of the day.

There is currently no scaffolding in New Zealand legislation to formalise and enable DAPP triggers and subsequent decisions on switching pathway options. Progress was made In the RMA replacement via the Natural Built Environment Act 2023, enacted shortly before the Labour government left office and repealed on the change of government.[90] In that statute (replaced with the former RMA 1991 whilst further resource management reform is completed), some provision had been given on how local authorities could integrate DAPP into their planning responsibilities and instruments. Further progress on installing pre-emptive policy, or implementing adaptation through plan changes may arrive with the incoming Planning Bill, potentially realised by cl 80(4)(c)(iv) under which territorial authorities must regard the (territorially and functionally relevant aspects of) 'any adaptation plan created under the Climate Change Response Act 2002.'[91] This is perhaps helped by the Climate Change Response Act mandate for the National Adaptation Plan to account for the updated scientific and technical advice provided in the 'most recent national climate change risk assessment'.[92] This would be a good step for linking an agile methodology to centrally driven monitoring and enforcement.

A positive legislative development in 2025 was reform to the LGOIMA, enabling local authorities to place climate change risk information they hold on LIMS in good faith, while shielded from

[89] Lawrence, J., (2020). Implementing Pre-Emptive Managed Retreat: Constraints and Novel Insights. *Current Climate Change Reports, 6*, 66–80, https://doi.org/10.1007/s40641-020-00161-z.
[90] Natural Built Environment Act 2023 (repealed).
[91] Planning Bill 2025, cl 80(4)(c).
[92] Climate Change Response Act 2002, s 5ZS, and see in particular para 5ZS(6)(d)

liability.[93] It will be interesting to see how this moves the dial and whether local councils maximise this tool for longer term spatial planning and adaptation signalling.

3.5 Un-coordinated Governance and Conflicting Hierarchies

Opaque and competing directive policy hierarchies contribute to delay in implementing adaptation plans. At a general level, the legislative and policy language exists, however it is unclear how they should be reconciled when conflicting with concurrent directives of another policy area, even across National Policy Statements.[94] In many cases, climate adaptation loses out if a hazard-prone situation can be "remedied" and "mitigated" by conventional measures – especially for short-term consent or permit timeframes. Since mitigation via protection measures has limits, [95] other measures will be necessary as change accelerates and greater exposures increase with population growth (housing).

Having no pre-stated hierarchy can leave an assumed priority principle. In an EU context, Adelle and Russel identify unwritten deference to the 'mother principle' of 'sustainable development', describing how development often takes priority to climate policy integration.[96] While New Zealand has an overarching directive policy formulation structure of the National Adaptation Plan (NAP)[97] and the National Disaster Resilience Strategy[98], these two frameworks do not connect to business-as-usual workstreams in local authorities, and do not articulate clear hierarchies that have statutory backing. The proposed amendments to the CCRA will need to address this hierarchy at the same time as the Planning Bill becomes law, otherwise the enabling provisions for local government to implement their adaptation plans, will be missing.

The written (or unwritten) deference to 'development' resonates in a New Zealand local governance context.[99] The North Island Severe Weather Events report discussed how there are

[93] Local Government Information and Meetings Act 1973, s 44; and see also Local Government Official Information Meetings Act Amendment Act 2025.; for a current and relevant claims of negligence see example: Cook, A. (2025, October 1). *Hawke's Bay Regional Council faces class action legal challenge over flooding.* Radio New Zealand. https://www.rnz.co.nz/news/national/574636/hawke-s-bay-regional-council-faces-class-action-legal-challenge-over-flooding

[94] Peart, R., Tombs, BD., & Marshall, K. (2023) *Options and Models for Relocation Policy. Working Paper 3 in Aotearoa New Zealand's Climate Change Adaptation Act: Building a Durable Future*, Environmental Defence Society,; and also see Peart, R. (2024) *Design Recommendations for a Climate Adaptation Act. Final Synthesis Report in Aotearoa New Zealand's Climate Change Adaptation Act: Building a Durable Future*, Environmental Defence Society.

[95] Intergovernmental Panel on Climate Change. (2022). *AR6 Working Group II: Impacts, adaptation and vulnerability*. https://www.ipcc.ch/report/ar6/wg2 / 2022, 2583.

[96] Adelle, C., & Russel, D. (2013). Climate policy integration: A case of déjà vu? *Environmental Policy and Governance*, 23(1), 1–12. https://doi.org/10.1002/eet.1606, 4.

[97] New Zealand Government. *National Adaptation Plan*. 2022

[98] Ministry of Civil Defence & Emergency Management. *Annual Report*. 2019.

[99] Peart, R., Tombs, B.D. (2023). *Current Legislation and Policy Framework for Managed Relocation: Working Paper 2 in Aotearoa New Zealand's Climate Change Adaptation Act: Building a Durable Future,* (Environmental Defence Society)

many competing influences on local councils, and the crowded field can de-prioritise hazard management and resilience thinking.[100]

In New Zealand, better defined roles and relationships in upcoming legislative reform of the emergency management legislation, resource management, the Climate Change Response Act and Local Government Act could improve the coordination problem. For example, the 'national policy instruments' provided by the proposed Planning Bill could delineate the policy hierarchies, provide functions and a cogent mandate for local authorities to act.[101] The North Island Severe Weather Report (2024) specifically examines the failure of government entities to coordinate on infrastructure in a cogent and centrally led response:

> *Inquiry heard from several infrastructure entities that the central government approach to infrastructure lacks coherence.*[102]

The lack of pre-defined roles and responsibilities across levels, along with unclear Standard Operating Procedures (SOPs), was identified throughout our survey of inquiries as a key issue– The Review of Reviews 2024 found similarly:

> *A lack of, or unsuitable processes, was the most common issue across all reviews, …*[103]

Absent or ambiguous delegation of responsibilities can stall effective implementation during a disaster response. Addressing this gap in the Emergency Management Bill through clear policy along with explicit hierarchy could alleviate increasing operational uncertainties foisted on local authorities.

3.5.1 Incoherent long-term spatial planning

New Zealand's long-term planning is inadequately tethered to pre-emptive 'spatial' planning. The intersection of hazard identification and damage preventative land use planning carries a confused mandate. Leaving unitary authorities aside briefly, these are core functions of separate local authorities in District Councils and Regional Councils.[104] This was emphasised as an issue in a Hawkes Bay review:

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[100] New Zealand Government, (2024) *Report of the Government Inquiry into the Response to the North Island Severe Weather Events*. Available at https://www.dia.govt.nz/Government-Inquiry-into-the-Response-to-the-North-Island-Severe-Weather-Events, [6.262].
[101] Planning Bill 2025, cl 12.
[102] New Zealand Government, (2024) *Report of the Government Inquiry into the Response to the North Island Severe Weather Events*. Available at https://www.dia.govt.nz/Government-Inquiry-into-the-Response-to-the-North-Island-Severe-Weather-Events, [5.225].
[103] CDEM. (2024). *Review of reviews*. New Zealand Government, [3.6.1].
[104] See Resource Management Act 1991 ss 30-31;and compare Local Government Act 2002 ss 21 and 39.

> *'The future system must remove the confusion inherent in the current model, be adequately resourced and support both improved central coordination and regional and local delivery.'*[105]

However, local authorities cannot undertake clear risk messaging while also implicitly messaging the exact opposite through overly permissive land use regimes. Subdivision is a clear example. The two are mutually exclusive.

Aggravating the problem is an inappropriately permissive consenting regime.[106] Specifically, the vacuum in directive policy and enabling provisions in legislation. For example, forestry slash as a driver of hazard is enabled by overly permissive regulatory regimes and under-resourced monitoring. The inquiry in Tairawhiti Gisborne/Wairoa emphasised this:

> *The regulatory environment and implementation of regulations have miserably failed to prevent predictable off-site effects from forestry activities. The NES-PF is too permissive, the council plan is out of date and inadequate, the consents have been ineffective, and compliance monitoring activities appear to have been under-resourced. These instruments need review.*[107]

Beyond messaging, the issue flows into an operational barrier. The North Island Severe Weather report noted that some of the CDEM centres themselves were flooded; a disastrous oversight.[108] This again shows the internal discord in the applied logic of disaster preparedness and affirms the New Zealand trend of costly oversights due to institutional amnesia.

3.5.2 Failures to distinguish between Disaster Preparedness and Climate Adaptation

We must distinguish between damages from 'natural hazards' being exacerbated by climate change and progressive losses from climate change impacts. Some literature has analysed countries that have prioritised disaster preparation over climate adaptation and vice versa. A study comparing Brazil and Colombia showed a policy tilted towards (either) 'anticipatory action' or 'capacity to respond' post-hoc as 'climate action' has a huge material and

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[105] *Independent Review of Hawke's Bay Civil Defence (Post-Cyclone Gabrielle)*. New Zealand Government, 2023, 13

[106] New Zealand Government. (2023). *Outrage to optimism: Report of the ministerial inquiry into land uses associated with the mobilisation of woody debris and sediment in Tairāwhiti/Gisborne and Wairoa districts*. New Zealand Government.

[107] New Zealand Government. (2023). *Outrage to optimism: Report of the ministerial inquiry into land uses associated with the mobilisation of woody debris and sediment in Tairāwhiti/Gisborne and Wairoa districts*. New Zealand Government, [30].

[108] New Zealand Government, (2024) *Report of the Government Inquiry into the Response to the North Island Severe Weather Events*. Available at https://www.dia.govt.nz/Government-Inquiry-into-the-Response-to-the-North-Island-Severe-Weather-Events, [4.168].

philosophical impact on state action.[109] The crucial element is to distinguish their differences and similarities for the purpose of making a coherent overarching system. Finding arbitrary differences may hinder progress to integrate functions and policy.

This conceptual challenge influences adaptation implementation. In some cases, over- focus on either disaster response or climate adaptation actively detracts and/or diminishes national capacity for the other. Even though this should not be such a zero-sum equation. They should inform one cogent system working towards increased resilience over longer than conventional timeframes used for emergency management plans.

Where the literature identifies this issue, it usually outlines the need for an overarching systemic approach that recognises the interconnection of climate change drivers with natural hazards within risk assessments, rather than positing various risks, exposures and vulnerabilities in isolation.[110]

3.6 Fragmented expertise and Under-Resourced Local Authorities

A consistent theme in all reviews of the Cyclone Gabrielle response was a lack of coordination across both expertise, capacity and implementation. Throughout international literature too, a commonly identified barrier is deficiencies in resourcing (including funding) and/or expertise for both disaster preparedness and climate adaptation.[111]

> *Councils need to fully deliver on their responsibilities and prioritise emergency management as a core part of their work. To do this, barriers need to be addressed, including a lack of capability and capacity, clarity about key roles and how they interact, and financial pressures. Some of these can be addressed*

[109] Milhorance, C., et al, (2022). Tackling the implementation gap of climate adaptation strategies: understanding policy translation in Brazil and Colombia. *Climate policy 22*. 1113, [4.2] - *'First, at the national level, two approaches were in competition to guide the climate agenda, namely, climate change and climate disaster. The climate change notion (longer term and preventive vision of the problem) was supported by the DNP and the Ministry of Environment, while the climate disaster one (shorter term and more reactive vision) was endorsed by the National Disaster Management Unit.'*

[110] Hochrainer-Stigler, S., Mechler, R., Roa, OH., Bachmann, M., Trogrlić, RŠ., Hander, J., Ulf Diekmann, U. (2025). Understanding multiple resilience dividends and system boundaries in disaster- and climate risk management: a systems approach for enhances decision-making. *Environmental Research Letters 20*, 044026, 7.

[111] Bush International Consulting (2024) *Hawke's Bay Civil Defence and Emergency Management Group Response to Cyclone Gabrielle*; and compare, Intergovernmental Panel on Climate Change. (2022). *AR6 Working Group II: Impacts, adaptation and vulnerability*. https://www.ipcc.ch/report/ar6/wg2 / 2022, (Section 17.4.2.1.3) 2595.; Lawrence, J., Sullivan, F., Lash, A., Ide, G., Cameron, C., & McGlinchey, L. (2013) Adapting to changing climate risk by local government in New Zealand: Institutional practice barriers and enablers. *Journal of Local Environment.* Vol 72. Advance online, DOI: 10.1080/13549839.2013.839643.; and for recent commentary see: Newsroom. (2026, January 23). *As disaster hits, government bolsters emergency response law.* https://newsroom.co.nz/2026/01/23/as-disaster-hits-government-bolsters-emergency-response law/Daily_Briefing+24.12.2025_COPY_01&utm_medium=email&utm_term=0_71de5c4b35-b147739572-97860175&mc_cid=b147739572&mc_eid=5770adb049

through effective governance and leadership. However, councils cannot do this alone, and support is required from central government.[112]

Lack of resourcing is not limited to funding. It can also manifest as insufficient climate adaptation experts in climate adaptation roles, or staff inadequately equipped in these roles. In some cases, this gap in expertise fosters a default to third party consultants:

'…over-reliance on external climate expertise largely acquired on a project-by-project basis through a traditional fee-for-service model; a model, noted by some municipal leaders and staff as failing to build in-house knowledge, skills and capability to deliver adaptation policies and plans.[113]

It is also hard to strike a balance between integrating specialist and building the response capacity into the team knowledge base:

'As we noted in our Auckland Review[114]*, part timers, who are inconsistently trained and often lack operational experience, cannot be expected to assume critical command leadership roles that require deep expertise, operational muscle memory and an understanding of interoperability with other local and national agencies.'*[115]

Staff and budgets are stretched too thin in these scenarios (and generally). With roles often including disaster management responsibilities triggered by CDEM legislation. The range of required skills is simply too much:

'The current model… unhelpfully sets local authorities up to fail in emergency management. They are critical to the system because they know their land, hazards, communities and resources, but they are simply not set up to take command in a fast moving, severe or widespread crisis. Nor can smaller TLAs

[112] New Zealand Government, (2024) *Report of the Government Inquiry into the Response to the North Island Severe Weather Events*. Available at https://www.dia.govt.nz/Government-Inquiry-into-the-Response-to-the-North-Island-Severe-Weather-Events, [55].
[113] Rogers, NJL., Adams, VM & Byrne, JA., (2024). Moving beyond the plan: Exploring the opportunities to accelerate the implementation of municipal climate change adaptation policies and plans. *Environmental Policy and Governance 35*(2), 276. https://doi.org/10.1002/eet.2142.
[114] Bush International Consulting (2024) *Hawke's Bay Civil Defence and Emergency Management Group Response to Cyclone Gabrielle*: and citing: Bush International Consulting (2023). *Mike Bush Report: Auckland Anniversary Floods*., [66].
[115] Bush International Consulting (2024) *Hawke's Bay Civil Defence and Emergency Management Group Response to Cyclone Gabrielle.*

> *(Territorial Local Authorities) sustain the depth of capability and professionalism in CDEM roles that is required in a complex or large-scale disaster.'*[116]

At the leadership level too, the 'review of reviews' noted that during the severe weather events of the North Island, insufficient training and expertise in emergency management manifested through inadequate communication from those placed by response frameworks in positions of leadership:

> *Gaps in having the appropriate levels of leadership and experience deployed into the field was attributed to not having a clear understanding of the tasks or having enough trained people.*[117]

These weaknesses in communication infrastructure potentially put lives at risk.[118] In terms of training:

> *There appear to be no minimum training standards for those involved in response, and the lack of comprehensive training left many response staff without a vision of what response best practice should look like. Consequently, many struggled to manage their areas of responsibility, wasted effort, and had a stressful experience.*[119]

To provide consistency, the Bush International Consulting (2024) review is emphatic on the creation of a 'common operating platform'. Stating that the existing fragmented approach 'cannot continue' and that the Standard Operating Procedure (SOP) of Microsoft Teams as a stand-in for a shared system is inappropriate.[120] The review states that many previous reviews have made this very same point, and while NEMA has been working on it, it remains an identified issue throughout post disaster reports:[121]

> *Establishing a common operating picture was a recommendation of the 2017 Ministerial Review into Better Responses to Natural Disasters and Other Emergencies. The then Government agreed to invest in the technology to ensure*

[116] Bush International Consulting (2024) *Hawke's Bay Civil Defence and Emergency Management Group Response to Cyclone Gabrielle*; also citing Bush International Consulting (2023) *Mike Bush Report: Auckland Anniversary Floods*. (66).
[117] CDEM. (2024). *Review of reviews*. New Zealand Government, [3.2.3].
[118] CDEM. (2024). *Review of reviews*. New Zealand Government, [3.2.2], 16.
[119] CDEM. (2024). *Review of reviews*. New Zealand Government, [3.5.1].
[120] Bush International Consulting (2024) *Hawke's Bay Civil Defence and Emergency Management Group Response to Cyclone Gabrielle*
[121] Bush International Consulting (2024) *Hawke's Bay Civil Defence and Emergency Management Group Response to Cyclone Gabrielle,* [69].

a fit-for-purpose common operating picture, however, the Inquiry understands that a business case developed in 2019 was not progressed.[122]

Shortly after, A New Zealand Government inquiry notes a repeated failure raised in previous inquiries and responses in the stalled development of a bespoke national crisis management centre (NCMC).[123]

Siloed communication channels further complicate an already unwieldy system that must balance vertical 'command & control' disaster management hierarchies across a wide horizontal of involved parties.[124] The reviews point to how the reactive approach to response often masks the unrealised potential in expertise and operation capacity of various agencies in planning and response.[125]

These observations do not augur well for grafting on consideration of climate change unless a whole systems approach is adopted as a matter of urgency and funding shortfalls are addressed. Overwhelmed system responses have widespread implications for New Zealand going forward if we are to respond in a proactive way that reduces risk and ongoing high costs to the economy and communities.

4 Greenshoots & Gaps

In terms of pre-emptive and integrated systematic adaptation, a number of agencies are already advancing this approach. This is positive with potential to develop into a more coherent and integrated framework. [126]

However, while some central government initiatives are underway [127] progress is largely focused on disaster recovery, rather than integration of adaptation actions. Furthermore, several constraints are highlighted that are like those identified in this study. These include limited funding, lack of regulatory levers, unclear roles and responsibilities, liability risks for adaptation decisions and limited capability and capacity across local government to manage natural hazard risks and the effects of climate change.

[122] New Zealand Government. (2024). *Report of the Government Inquiry into the Response to the North Island Severe Weather Events*. New Zealand Government, [4.182].
[123] New Zealand Government. (2024). *Report of the Government Inquiry into the Response to the North Island Severe Weather Events*. New Zealand Government, [4.184].
[124] CDEM. (2024). *Review of reviews*. New Zealand Government, [3.2.4], 17
[125] CDEM. (2024). *Review of reviews*. New Zealand Government.
[126] Natural Hazards Commission Toka Tū Ake. (2025, November). *Pre-event land-use planning methodology.* https://www.naturalhazards.govt.nz/resilience-and-research/research/search-all-research-reports/pre-event-land-use-planning-methodology/.
[127] Waitangi Tribunal The Climate Change Priority Inquiry: Brief of Evidence of Paul Barker (Wai 3325, 2026)

4.1.1 Institutional Reform Opportunities

Alignment of capacity and expertise in science and policy agency reform could build long-term outcomes if adaptation research, policy and practice is funded. This could flow-on to the Department of Prime Minister and Cabinet plans to develop decision-making tools to streamline future recovery. These tools will comprise five decision tree categories that define the scope and nature of government intervention in recovery effort. They will consider social, economic and leadership elements of recovery, potentially reflecting some of the lessons outlined in the surveyed review literature.[128] However, the cabinet paper makes no explicit link between long-term adaptation planning and the reform of the disaster recovery process. An optimistic reading could interpret Appendix 3 of the cabinet paper as an indicator of their increasing integration into "business-as-usual" since 'related work programmes' identified denote the 'climate change' portfolio as a 'system-level recovery work related programme', and places it amongst (inter alia) ongoing Emergency Management legislative reform.[129] In this context, Appendix 3 cites the role of the adaptation framework as:

> *…cost sharing and decision-making principles to guide proactive actions to reduce risk before a major event, and longer-term recovery decisions for residential properties, services and infrastructure following a major severe event.*[130]

Wording like this could solidify anticipatory action as default. In terms of coordinating this implementation the merging of the Ministry for the Environment, Department of Internal Affairs local government functions, Ministry of Transport and Ministry of Housing potentially creates opportunity for policy focused on risk reduction and pre-emption. However, whether this opportunity is captured will depend entirely on how agency policy priorities are conceived and how organisational structures are designed. The danger being that housing and development are explicitly or implicitly given higher priority over environmental and natural hazard avoidance, which could be further entrenched with caps on rate increases of local authorities. The implementation of the proposed actions in the national Adaptation Framework cabinet

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[128] Department of the Prime Minister and Cabinet. (2025, June). *Recovering from significant natural hazard events: Decision-making tools (ECO-25-SUB-0067).* New Zealand Government. https://www.dpmc.govt.nz/sites/default/files/2025-06/pr-eco-25-sub-0067-recovering-from-significant-natural-hazard-events-decision-making-tools.pdf.

[129] Department of the Prime Minister and Cabinet. (2025, June). *Recovering from significant natural hazard events: Decision-making tools (ECO-25-SUB-0067).* New Zealand Government. https://www.dpmc.govt.nz/sites/default/files/2025-06/pr-eco-25-sub-0067-recovering-from-significant-natural-hazard-events-decision-making-tools.pdf, [Appendix 3].

[130] Department of the Prime Minister and Cabinet. (2025, June). *Recovering from significant natural hazard events: Decision-making tools (ECO-25-SUB-0067).* New Zealand Government. https://www.dpmc.govt.nz/sites/default/files/2025-06/pr-eco-25-sub-0067-recovering-from-significant-natural-hazard-events-decision-making-tools.pdf, [Appendix 3].

paper (see footnote 76) are critical for the legislative components across the several relevant statutes to be effective alongside mandates and funding to undertake implementation of adaptation planning.

3.1.2 Law Reform Opportunities

The Planning Bill provides for adaptive management through the permitting process. However, it is unclear how this approach would extend to local authority adaptation actions. Provisions allowing for designations ahead of major infrastructure projects could potentially support pre-emptive adaptation through land use change and *may* provide a legal basis for managed retreat. However, further research is needed on this topic. Success in this arena this would certainly require clearer statutory guidance on interactions with existing use protections, regulatory takings, and the use of land acquisition provisions for this purpose.

In practice, climate related designations for large infrastructure projects are more likely to facilitate hard adaptation responses, quite literally entrenching maladaptive outcomes of the kind described in section 2.3, consistent with a PARA style approach.

Section 85 of the current RMA has been strengthened, and the Environment Court's expanded remedial powers may allow for mechanisms such as land swaps or the provision of alternative land for affected parties to relocate to. These options could be supported through the use of Crown land consistent with Treaty settlement obligations, including rights of first refusal. Outcomes will depend heavily on the content of national policy direction and the national planning standards.

The Emergency Management Bill (No.2), which will replace the 2002 CDEM Act, represents an important legislative update and an opportunity to broaden the focus beyond traditional catastrophic hazards such as earthquakes and tsunamis. However, it still fails to integrate recovery planning with climate adaptation and does not adequately embed anticipatory governance. As a result, it falls short of contributing to a coherent, system wide approach to climate risk management.

Amendments to the Climate Change Response Act are proposed but not yet introduced to Parliament. They provide the important link between adaptation plans and the Recovery process in the Emergency Management Bill and to the Planning Bill for preparation of timely spatial plans that can inform what, where and how adaptation plans are promulgated. However, the other significant enablers missing are mandate and means of codifying DAPP into the planning and consenting process and funding for adaptation planning, capacity building and for land acquisition and compensation related to managed retreat. (See Box 2)

Box 2. Law Reform Opportunities

1. Emergency Management (EM) Bill: integrate climate adaptation explicitly into recovery planning. Link to Climate Change Response Act adaptation functions and require alignment with national adaptation progress monitoring. This would ensure event recovery neither contradicts nor crowds out any long-run dynamic adaptive pathways plan.

2. Planning Bill and National Direction: provide clear national policy direction and standards that: (a) articulate a hierarchy prioritising risk avoidance where feasible; (b) operationalise DAPP triggers and plan-switch mechanisms; and (c) reconcile existing use protections with risk reduction, including in subdivision decisions. Without this architecture, councils will remain trapped in overly permissive, case-by-case mitigation.

3. Acquisition and relocation frameworks: clarify pre- and post-event acquisition powers, including valuation principles beyond "willing seller/willing buyer" when market value is eroded by increasing risk. Provide pathways for land swaps and the use of Crown land. Ensure consistency with Treaty settlement obligations, including rights of first refusal to enable managed relocation at scale and with equity.

4. Sectoral alignment: tighten currently permissive regimes that enable transboundary damages like slash debris flows; require infrastructure consenting to assess long-term maladaptation risks; mandate DAPP integration of monitoring and actionable triggers in adaptation plans and provide funding mechanisms to kick start avoidance of further climate risk.

5. Legislation merging the Ministry for the Environment, Department of Internal Affairs local government functions, Ministry of Transport and Ministry of Housing provides an opportunity. Consider greater coordination on adaptation policy focusing on risk reduction and greater pre-emptive policy mandates in the legislation, including the Building Act s 71-73 to overcome the (currently) easily waivable natural hazard provisions if the consent issuer is satisfied that the adverse effects have been managed on site (on a case-by-case basis).

5 Coming full circle: Creating and Perpetuating Flood Disasters

New Zealand suffers ongoing amnesia to lessons learned in the wake of disaster response reviews. The consequences are harmful and wasteful. We know what to do. We simply do not implement fundamental change to address systemic issues that are repeatedly raised. Continually, retrospective assessment determines that long-term changes in land use management and more integrated systems thinking would have increased the affected area's resilience and lessened spontaneous ad hoc resource mobilisation. Reviews constantly highlight not only the potential for long-term thinking as mitigative of future harm and costs, but also that these same recommendations have been present in recovery reports going back many decades.

Unfortunately, New Zealand develops cycles of inertia in both recognising the latent issues and failing to install systemic remedy. The consequences are being happening now. AA insurance has recently stopped offering new home insurance in high hazard risk areas in Blenheim, Westport, and parts of Canterbury. Proposed "remedies" for potential gaps in insurance have been to build further flood defences rather than examine possible land use changes and managed relocation. This demonstrates (yet again) the default preference for hard structures that only partly engage the overall risk, and in some case exacerbate it because perceptions develop that the area is 'safe'. In a comment, insurance and climate expert Storey neatly surmised the issues and the inertial cycle:

> *"If you build defences, people build new houses. We shouldn't be building any new houses in Westport, full-stop."*[131]

Thus, we have come full circle from Ericksen's observations 1986 when he stated we were creating flood disasters through a reliance on short-term engineering solutions. We can only now be said to be 'perpetuating' those flood disasters we created.

Further, progressive, ongoing and accelerating climate change will aggravate and increase occurrence of impacts, so anticipating these additional ongoing risks is essential for being prepared and for adapting Aotearoa's communities and economic activities. It is unsustainable to continually clean up damage, stay put and attempt limited "build back better" fixes in the knowledge that resources are thin, and communities have limits to their coping capacity.

[131] Stuff. (2024). *Insurer temporarily halts new policies in Westport due to flood risk.* https://www.stuff.co.nz/world-news/360931024/insurer-temporarily-halts-new-policies-westport-due-flood-risk.

Addressing barriers with policy alternatives is only possible having addressed the country's institutional amnesia and reforming New Zealand's default reactive style to hazards and disaster management. A style that continues to respond *ad hoc* in the wake of extreme events, overestimates the capacity of engineering solutions, underinvests in long termism and resolutely ignores the very many lessons and suggestions made in the inquiries that it commissions.

Ultimately, the problem of overreliance on reactive disaster response must be communicated as a failure to anticipate and manage systemic risks in/of changing climate. It is not simply that responses are too slow or under-resourced, but that the system itself is misaligned with the pace, frequency, intensity, and complexity of emerging hazards from climate change that have widespread implications for people and economic activity across New Zealand. Furthermore, failure to engage with this facet of adaptation risks perpetuating existing inequities and inequalities of those groups typically underserved by government policy. For example, the review of reviews points out in the wake of the severe weather affecting the North Island in 2023-2024, that there was no overarching strategy or rubric for targeted response for rural-based Māori communities.[132]

New Zealand's legislative landscape currently faces high levels of disruption and lengthy transitional arrangements, that if done thoughtfully, could foment long required systemic changes. The announced local government reform, resource management overhaul, the Planning Bill, changes in the Emergency Management Bill and the signalled changes to the CCRA to implement the Adaptation Framework could remedy some of the issues continually raised in the surveyed review literature, if joined up across each of them. A cogent and up-to-date high level policy instrument like the proposed 'national policy direction' given meaning by cl 27 of the proposed Planning Bill could then coordinate local authority implementation of these fragmented pieces of legislation through 'national standards'.[133]

Staying reactive increases costs, worsens inequity, and diminishes capacity for transformation. Aotearoa has no shortage of diagnoses. The task is to move from knowing to doing and link recovery to adaptation plans in law. This practically means giving councils the tools, mandates and funding to act ahead of impact, to professionalise and connect response capabilities and re-weight priorities so that avoiding risk is the default, not the exception. The window for pre-emptive action is narrowing. We should stop wasting money and time perpetuating the disasters we created (Ericksen, 1986) and have repeatedly identified how to avoid.

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[132] CDEM. (2024). *Review of reviews*. New Zealand Government, 13, [3.1.5]; Intergovernmental Panel on Climate Change. (2022). *AR6 Working Group II: Impacts, adaptation and vulnerability*. https://www.ipcc.ch/report/ar6/wg2/ 2022, 2554.

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Appendix

Surveyed Post disaster reports and reviews. Pinpoint references provided where possible:

Ministry of Civil Defence and Emergency Management (2016) *East Cape Earthquake and Tsunami 2 September 2016: Post Event report (National Emergency Management Agency response)*: MCDEM	
1. Insufficient Emergency Communications Management, p12-13	3. staffing issues (capacity, capability and processes', p1
2. Unclear Responsibility distribution during states of emergency, p9	

Ministry of Civil Defence and Emergency Management (2016) *Kaikōura Earthquake and Tsunami 14 November 2016: Post Event Report.* MCDEM	
1. Inadequate technology platform for response, p3	4. 'staffing issues (capacity, capability and processes', p3 [5.2.1]
2. Insufficient Emergency Communications Management, p38	5. Under resourced local authorities [5.2.1]
3. Insufficient training on CIMS [52.1]	6. Siloed roles of assessing risk (GNS) and administering warnings [5.2.2]

New Zealand Government. (2017). *Ministerial review: Better responses to natural disasters and other emergencies*	
1. Insufficient training on CIMS, p3, p23	4. Failure to learn from previous reviews, p9
2. Fragmented expertise and capacity, p1	5. Unclear Responsibility distribution during states of emergency, p1, p26
3. Inadequate technology platform for response, p3,p33	6. Insufficient Emergency Communications Management, (p38)

2017 Australian Fire and Emergency Service Authorities Council (2017) *Independent Operation Review: Port Hills Fires – February 2017*. Prepared for Fire and Emergency New Zealand	
1. Unclear Responsibility distribution during states of emergency [62]	2. Fragmented capacities and lack of interoperability (p8)

Smol (2018) *Review of the Response to the Auckland Storm of 10 April 2018. A report to the Auckland Coordinating Executives Group*. Rimu Road Consulting	
1. Insufficient training on CIMS (p13)	2. Unclear responsibilities during emergency (p14)

New Zealand Government (2018) *Delivering better responses to natural disasters and other emergencies*. Wellington.	
1. Insufficient expertise on response procedure, p10	4. Inadequate technology platform for response, p12, [7.2]
2. Unclear Responsibility distribution during states of emergency [1.6]	5. Lacking emergency management leadership experience [1.8]
3. Outdated legislative framework [6.1]	6. Insufficient Emergency Communications Management [8.2]

Ministry of Civil Defence and Emergency Management (2019) *Tasman District Fire Response 5 – 27 February 2019: Post Event Report*. MCDEM	
1. Inadequate technology platform for response, [4.3.2]	3. Insufficient Emergency Communications Management, [4.3.3]
2. 'staffing issues (capacity, capability and processes', (rostering) [4.3.1],	

Public Inquiry into Earthquake Commission (EQC) response	
1. Unclear Responsibility distribution during states of emergency, p19 2. Outdated legislative framework, p21	3. Failure to learn from previous reviews, p19 4. Inadequate technology platform for response, p105 5. Insufficient Emergency Communications Management, p168

National Emergency Management Agency (2021) *Hikurangi and Kermadec Islands Earthquakes 5 March 2021: Post Event report (NEMA response)*: NEMA	
1. Confusing overlap of CDEM and NEMA emergency communication	2. Siloed roles of assessing risk (GNS) and administering warnings (NEMA), [5.2]

Bush International Consulting (2023). *Mike Bush Report: Auckland Anniversary Floods*.	
1. Failure to learn from previous reviews, p14, p24, 56 2. Unclear Responsibility distribution during states of emergency, p14, p29, p47, p59 3. Lack of council urgency for emergency management or readiness, p29, p30, p44 4. Insufficient Emergency Communications Management, p48, p55 5. Insufficient training on CIMS, p68	6. Insufficient expertise on response procedure, p14, p30, p51, p56 7. Insufficient contingency planning p14, p25, p28 8. Lack of pre-established processes or fit-for-purpose processes creating ad hoc implementation, p25-28, p43, p48, 51, 65 9. Inadequate local authority intervention, p14, p24 10. Uncoordinated disaster response, p47 11. Poor understanding of Te Ao Māori in approach, p56

Bush International Consulting. (2024). *Hawke's Bay Civil Defence and Emergency Management Group response to Cyclone Gabrielle*. Wellington, New Zealand			
2024	Mike Bush Consulting	Cyclone Gabrielle	Pluvial and Fluvial Flooding-inundation, debrisflows, storm surge
1. Outdated Legislative Framework, p8, p28 2. Uncoordinated disaster response, p22 3. Unclear Responsibility distribution during states of emergency, p33-34 4. Lack of pre-established processes or fit-for-purpose processes creating ad hoc implementation, p6			5. Inadequate technology platform for response p36 6. Insufficient training on CIMS, p7, p22 7. Fragmented expertise and capacity, p34 8. Poor understanding of Te Ao Māori in approach, p28 9. Failure to learn from previous reviews, p8

New Zealand Government (2023) *Outrage to Optimism: Report of the Ministerial Inquiry into Land Uses Associated with the Mobilisation of Woody Debris and Sediment in Tairāwhiti/Gisborne and Wairoa Districts.* Wellington.	
1. Inadequate local authority intervention [20] 2. Under-resourced monitoring and compliance [27] 3. Under resourced local authorities [7] 4. Insufficient capacity to map hazard and impact [6] 5. Outdated infrastructure [6], [16]	6. Insufficient contingency planning (redundancy in roading) [14] 7. existing regulatory instruments too permissive [28+30] 8. People unsupported by systems and processes [12] 9. Insufficient Emergency Communications Management [13]

New Zealand Government (2024) *Government response to the ministerial Inquiry into land use for Tairawhiti – Gisborne and Wairoa*. Cabinet Paper. Ministry for Environment.

1. Under-resourced monitoring and compliance [37], [41.2]
2. Under resourced local authorities [37],[39],[41.1]
3. Insufficient capacity to map hazard and impact [40]
4. Existing regulatory instruments too permissive [41.3],[50],[58],[Appendix R18]
5. People unsupported by systems and processes [43]

2024 Hawkes Bay Regional Council (2024) Hawke's Bay Independent Flood review – Pae Matawai Parawhenua. HBRC

1. Outdated infrastructure p117-118
2. Failure to learn from previous reviews p5
3. Existing regulatory instruments too permissive p152

New Zealand Government (2024) *Report of the government inquiry into the response to the North Island severe weather events.* Wellington

1. Failure to learn from previous reviews [i.7][4.169][4.182]
2. People unsupported by systems and processes. [i.6][4.138][4.168]
3. Uncoordinated disaster response. [i.18][i.20][i.24][i.68][3.79][4.136]
4. Confusing overlap of CDEM and NEMA emergency communication. [i.23][i.36], [2.45][3.123]
5. Unclear Responsibility distribution during states of emergency. [i.23][i.41][i.57][i.R5], [1.16][1.23] [3.80][3.102][3.110][3.119][4.198][5.225]
6. Insufficient Emergency Communications Management [1.18][i.36][i.66][4.145][4.148]
7. Insufficient training on CIMS [3.96]
8. Lack of pre-established processes or fit-for-purpose processes creating ad hoc implementation [4.145][4.177][4.183][5.218]
9. Insufficient expertise on response procedure. [i.36][i.63][3.86][3.89][3.103]
10. Insufficient capacity to map hazard and impact [4.153]
11. Insufficient contingency planning [4.146][5.247]
12. Outdated legislative framework. [i.37][i.43][i.R4:A], [1.26][1.32], [2.58][4.156]
13. Lack of council urgency for emergency management or readiness. [i.54][i.58][i.60], [1.15][2.64][4.145][5.228]
14. Under resourced local authorities. [i.55], [5.241][6.255][6.272]
15. Lacking emergency management leadership experience [i.63],[2.74][3.86][3.103]
16. Fragmented expertise and capacity. [i.63][i.64],[2.67][3.80][4.178][6.288]
17. Inadequate technology platform for response. [i.67],[2.70][4.179][4.209]
18. existing regulatory instruments too permissive [1.35]
19. Outdated infrastructure [1.35][1.36][5.217][5.222][5.241]

CDEM. (2024). *Review of reviews*. New Zealand Government

1. Insufficient expertise on response procedure [3.1.3]
2. Low confidence on Te Ao Māori centric response protocol [3.1.3]
3. Lack of pre-established processes or fit-for-purpose processes created ad hoc implementation [3.2.1],[3.2.2]
4. Lacking emergency management leadership experience [3.2.3]
5. Insufficient Emergency Communications Management [3.1.4]
6. Insufficient contingency planning [3.2.4],[3.6.4]
7. Uncoordinated disaster response [3.2.4],[3.6.1]
8. Fragmented expertise and capacity [3.2.4]
9. Insufficient capacity to map hazard and impact [3.3.1]
10. Inadequate technology platform for response [3.3.1]
11. Outdated legislative framework [3.2.2]
12. People feeling unsupported by systems and processes [3.6.3]
13. Insufficient training on CIMS [3.5.1]
14. Unclear Responsibility distribution during states of emergency [3.6.4]

DPMC (2024) *Strengthening Disaster Resilience and Emergency Management*, New Zealand Government

1. Failure to learn from previous reviews, p5, 23
2. Under resourced local authorities p18
3. Insufficient expertise on response procedure, p19
4. Lacking emergency management leadership experience, p21
5. Uncoordinated disaster response, p17
6. Unclear Responsibility distribution during states of emergency, p20