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Navigating adaptive futures: analysing the scope of political possibilities for climate adaptation

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ABSTRACT

The growing scale and intensity of climate change poses a substantial challenge to the status quo of society and politics. Adapting to the risks associated with extreme weather events and changing climatic conditions will require the re-imagination of many aspects of politics and society. Therefore, climate change can be framed as a problem of imagination; one in which our relationship to the future is central to understanding how possibilities in the present are perceived. This research analyses public submissions made on New Zealand's first draft National Adaptation Plan to understand how future climate adaptation is framed and imagined by different groups. In analysing submissions we identify and describe four thematic 'adaptive futures' that each argue for varied amounts of socio-political change from the status quo: data driven resilience; growth and opportunity; nature-society change; and flaxroots transformation. Underpinning these adaptive futures are emerging advocacy coalitions that seek to shape what is seen as possible, imaginatively, politically and materially. Our analysis also highlights how risks and opportunities are perceived by whom, and insights into attempts to delineate the boundaries of adaptive imagination and political possibility.

Glossary of Māori terms: hapū: kinship group; iwi: extended kinship or tribal group; kaitiakitanga: intergenerational sustainability; kaupapa Māori: Māori approach, a philosophical doctrine, incorporating the knowledge, skills, attitudes and values of Māori society; kawa: protocols; mana: authority, dignity, control, governance & power; mana whenua: territorial rights, power from the land, authority over land or territory, jurisdiction over land or territory; te ao Māori: the Māori worldview; tikanga: correct procedures, lore & practises Definitions sourced from Blackett et al. 2022 & Te Aka Māori Dictionary

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Introduction

Adapting to the present and future impacts of climate change represents a momentous challenge to individuals, communities and nations. The impact of climate change in Aotearoa New Zealand has become increasingly difficult to ignore. Aotearoa New

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Zealand has long been regarded as subject to a broad range of natural hazards (White and Lawrence 2020). The scale of the events of early 2023, including Cyclone Gabrielle and a series of flooding events in Northland and Auckland, reinforced the personal and political impacts of climate change. These occurred after a raft of extreme weather events in recent years. Climate adaptation is no longer a theoretical problem for future governments, it is a problem now. The costs to wellbeing, livelihoods and health are numerous, as are economic costs (Pullar-Strecker 2023). However, climate adaptation encompasses more than just coping with extreme weather events, there is a parallel need to anticipate and adapt to hazards and vulnerabilities, ranging from increased heat, transmissible diseases, food and water insecurity, to the more high-profile planning for managed retreat.

Perspectives and approaches to climate adaptation across this spectrum of hazards and impacts are mediated through relationships to futures – both in terms of what is seen as likely across what time frame, and the viable options available to respond (Yusoff and Gabrys 2011). Adaptation governance is frequently dominated by technical, applied and linear approaches (Simon et al. 2020). Yet there is increasing recognition that political power and public processes are inextricably interconnected with adaptation decision-making and who benefits (Few et al. 2007; Simon et al. 2020; Nightingale et al. 2021). Consequently, while there is broad agreement on the need for adaptation, contentious political questions remain such as what this might look like at different spatial and temporal scales, when and where action occurs, how action is prioritised, or who benefits and pays (Woroniecki et al. 2019). Policies that aim to frame and direct climate adaptation therefore open numerous avenues to understand how actors and organisations imagine climate risks, priorities, and responsibilities, and ultimately, preferred futures.

Understanding the multiple ways futures are imagined also provides insights into climate justice. The impacts of the climate crisis are, and will continue to be, felt across Aotearoa, but with a disproportionate impact on communities impacted by colonisation and other forms of ongoing injustice and inequality, such as Māori, Pasifika, young and older people, and people with disabilities. Imaginaries of climate change adaptation, far from being singular, are heavily contested, as differing visions of climate changed futures vie for dominance (Levy and Spicer 2013; Davoudi and Machen 2022; Riesto et al. 2022). Issues of climate justice are fundamentally intertwined with how future risks, opportunities and approaches are perceived by whom and to whom. Futures are also shaped by forces beyond climate change such as increasing political polarisation and authoritarianism, as well as those with current power or access to it. How we collectively envisage and imagine climate changed futures in this context configures what is seen as politically possible, shaping the boundaries of both individual and collective action (Cork et al. 2023).

In this paper we analyse public submissions to the first National Adaptation Plan, proposed by the New Zealand Government, in an effort to understand how individuals, industry, organisations and governance representatives, frame and imagine climate changed futures. The process for consulting on and refining the National Adaptation Plan provides an opportunity to analyse the nature and scope of how these futures are imagined across different sectors. In doing so, we provide a means to understand how risks and opportunities are perceived and by whom, as well as insights into the current boundaries of adaptive imagination and political possibilities. In the sections that follow we discuss our methods and position our analysis using a theoretical

framework that brings together climate adaptation scholarship with an understanding of imaginaries and futures. We then introduce four adaptive futures and discuss how each of these envisage varied degrees of socio-political change. We conclude by discussing the implications of these adaptive futures for understanding how adaptation is framed and by whom, and the implications for building more just climate changed futures.

Climate adaptation and the imagination of new futures

Adapting to climate change poses a number of challenges that span social, political and ecological systems (Bulkeley and Tuts 2013). Applied understandings of adaptation are largely built around socio-ecological systems theory and connect to concepts of vulnerability and resilience (Folke et al. 2005; Bond and Barth 2020). In this view, adaptation encompasses 'adjustments made to changed environmental circumstances that take place naturally within biological systems and with some deliberation or intent in social systems' (Adger et al. 2009, p. 337). Eriksen et al. (2015, p. 524), however, position adaptation as an explicitly 'contested social-political process that mediates how individuals and collectives deal with multiple types of simultaneously occurring environmental and social change'. Climate adaptation is further complicated by notions of scale, temporality, and highly varied stakeholders. While climate change policy is a core focus of international discourse and agreements, adaptation is place and context-specific and relies on data at national, regional and local scales. Similarly, there are long-standing uncertainties over the frequency or intensity of future events and, by extension, who might be affected, how, and when.

Manning et al. (2015) identify a number of barriers to adaptation policy making in Aotearoa New Zealand including a largely status quo representation of risk in legislative and policy frameworks, the dependence of decision-making processes on certainty, a reliance on retrospective responses, and community expectations of protection. Expectations of protection, in particular, are heavily influenced by prior approaches that predominantly focussed on 'hard protection' engineering solutions such as sea walls (White and Lawrence 2020). However, change in this policy arena is gaining pace, including growing momentum and recognition for anticipatory planning, greater understanding and engagement with te ao Māori (the Māori worldview) and increased recognition of community participation (Manning et al. 2015; Simon et al. 2020; Stephenson et al. 2020; Lawrence et al. 2023). Legislative change and institutional structures to shape more holistic and coordinated adaptation efforts are in the early stages of development (Stephenson et al. 2020), something the National Adaptation Plan (NAP) was designed to consolidate and enable.

It is also important to acknowledge that, due to historical and ongoing processes and practices of colonisation, capitalism and imperialism, Indigenous people and communities are at the frontlines of climate change (Whyte 2017; Johnson et al. 2022). Māori face disproportionate climate impacts on their taonga, 'assets, interests, kawa (protocols) and tikanga (correct procedures, lore, practises) and expressions of mana (authority, dignity, control, governance, power) and kaitiakitanga (intergenerational sustainability)' (Blackett et al. 2022, p. 415). Māori interests are also strongly represented in 'climate sensitive sectors' such as agriculture, forestry, horticulture and tourism (Awatere et al. 2021; Lawrence et al. 2023). However, Māori governance and leadership is at the forefront of

adaptation responses through 'asserting their rangatiratanga to manage climate change' and increasingly as a focus for legislative change through co-management and shared decision making (Awatere et al. 2021, p. 1; Hyslop et al. 2023). Lawrence et al. (2023 pg.18) describe the influence of te ao Māori as 'one of the greatest opportunities for a paradigm shift' in adaptation, including innovative concepts that can re-imagine or integrate approaches, such as prioritising reciprocity over economic activity, the role of kaitiakitanga, and a greater focus on collective wellbeing (Lawrence et al. 2023).

The discussion so far emphasises that while adaptation in many government policy-making and decision-making contexts has been dominated by technical, economic and quantitative approaches it is fundamentally political, as it involves multiple and contested relationships with the past and present, and importantly, interpretations of futures. We use the term 'futures' here following Goode (2022, p. 202) to indicate the plurality of possible futures and the way 'potential futures are continually subjected to social shaping and contestation'. Such visions of the future are not just the realm of the individual, but rather seek to shape collective imaginaries which constrain and enable what is seen as possible, attainable and desirable (Wright et al. 2013; Marquardt and Nasiritousi 2022). There are two key elements at play: climate change both 'constrains the range of possible futures' (Mach and Siders 2021, p. 1) while also altering the way we collectively imagine the future (Yusoff and Gabrys 2011, p. 518).

While imaginaries are collective, they may still be heavily contested, as differing visions of climate changed futures advocated by differing groups vie for prominence and dominance (Levy and Spicer 2013; Davoudi and Machen 2022; Riesto et al. 2022). There are a diverse array of futures imagined in relation to climate change, from techno-optimism and eco-modernism through to apocalyptic visions of societal collapse (Death 2022; Paprocki 2022b). These diverse futures are mobilised by activists, policy-makers, scientists, the media, industry and politicians in various ways that motivate, enable or constrain change (Levy and Spicer 2013; Davoudi and Machen 2022; Death 2022). Climate adaptation is intimately tied to these imaginaries that may differ depending upon perceptions of risk, place or wider cultural and ideological factors. Consequently, adaptive futures are also dynamic, with factors such as demographics and experience of extreme events, potentially shifting experiences of imminence and the temporality of risk and costs. For example, studies in parts of Australia and Aotearoa on sea level rise and house prices demonstrate that there are no noticeable price effects (Fuerst and Warren-Myers 2019; Fillippova et al. 2020), while a US study found a 7% discount (Bernstein et al. 2019).

Mainstream government directed adaptation policy-making is often highly reliant on socio-technical imaginaries that are expert-led and top-down, utilising tools such as cost–benefit analysis, scenario planning and vulnerability assessments (Malloy and Ashcraft 2020, p. 4). Davoudi and Machen (2022, p. 208) in their analysis of computerised climate Integrated Assessment Models describe how science and technology, through utilising known or inferred data, act to both generate and anchor futures 'within the possibilities of the present'. Riesto et al. (2022, p. 358) also describe how urgency easily leads to a 'narrow scope of discussion' that can be considered 'the pitfall of technological determinism, where the range of possibilities are reduced to the consequences of technology alone'. These imagined futures can reinforce and privilege knowledge frameworks and worldviews premised on positivism and the western scientific method, marginalising

and excluding Indigenous worldviews and ontologies which provide more holistic and interconnected understandings of risk, uncertainty, time and future (Chao and Enari 2021; Hyslop et al. 2023).

The politics and practices of adaptation then are centrally mediated through these many contested and varied imagined futures, whether or not they reflect dominant hegemonic ideals. Yet, as Farbotko et al. (2023, p. 750) state, 'narratives of the future matter in climate adaptation'. Ideas of 'inevitable uninhabitability' (Farbotko et al. 2023) and 'viability' (Paprocki 2022a) in relation to adaptation hold the power to shape visions for the future as well as actions in the present, constraining the boundaries of what is considered possible and foreclosing possibilities for resistance and transformation. Paprocki (2022b, p. 1399) positions climate change as not a problem of the future, but rather one of the past and present – imaginaries of future crises are 'mobilized to enact existing agendas for development and landscape transformation'. For Māori and other Indigenous scholars, the present and future must be understood by looking to the past (Whyte 2017; Hyslop et al. 2023). Kyle Whyte (2017, pp. 155–156) also describes climate change as 'an intensification or intensified episode of colonialism', noting it is less about the future and more about 'the experience of going back to the future'.

At the heart of these varied and contested imagined futures of climate adaptation is what Yusoff and Gabrys (2011) term the 'politics of liveable futures'. This raises key questions: who decides what a desirable adaptive future looks like and who decides what and where is viable or unsalvageable? The need for socio-political change is central to climate change adaptation, but what this looks like and whose voices inform this change are as yet uncertain. In this paper we draw on this theoretical framing to outline four different 'adaptive futures' which were represented in submissions to the first draft National Adaptation Plan. These adaptive futures are configured through specific framings of what a desirable future looks like, as well as the ideal modes of socio-political change to achieve these futures.

Methods

This first National Adaptation Plan for Aotearoa New Zealand aims to present a long term cohesive vision and workplan for government and society-wide action in response to climate change risks and impacts. The plan brings together work across government sectors and builds on the National Climate Change Risk Assessment 2020 which identified 43 priority risks and 10 most significant risks. The plan presents an encompassing number of priorities and aims across five policy themes of Natural Environment, Homes, Buildings and Places, Infrastructure, Communities, and Economy and Financial Systems. Three chapters are also dedicated to risk informed decision-making, climate resilient development and managed retreat. Overarching these sections, the plan provides a vision, purpose, goals and priorities to shape adaptation governance. In the foreword to the plan, there is a clear political intention 'to drive a significant, long-term shift in our policy and institutional frameworks' (p. 6). The NAP also sets out a framework for supporting and developing adaptation in partnership with Māori to allow for 'planning for Māori, by Māori' (p. 28) through the Rauora framework. This framework aims to encapsulate an Indigenous and Māori worldview approach to climate adaptation and transformation including elevating and celebrating the Indigenous values and mātauranga Māori.

We draw on a qualitative discourse analysis of the 294 public submissions to the draft NAP (see Figure 1). The draft NAP was released in late April 2022 for consultation and finalised in August the same year. Submitters either completed an online form,[1] submitted a separate long-form submission or both. We downloaded all publicly available submissions from the Ministry for the Environment website in June 2023. We utilised thematic analysis techniques to identify representations of different adaptive futures in submissions rather than the adaptation plan itself. Themes are not summaries or determined by the quantitative frequency of concepts but are 'patterns of meaning anchored by a shared idea or concept' that are identified through the systematic development, analysis and interpretation of patterns across qualitative data (Braun and Clarke 2022, p. 11). As Goode and Godhe (2017, p. 120) identify 'texts, discourses, images and ideas of the future' are the primary data for critical future studies, providing insight into how the future is evoked, what kinds of futures are evoked and the actors producing these visions of the future.

We used the guide described by Braun and Clarke (2022) to develop, refine and name core themes in the submission data and to subsequently identify adaptive futures. We first uploaded the data using NVivo software to read and familiarise ourselves with the content of the submissions. The data was then coded using broad themes to identify overarching patterns and categories. This included, but was not limited to, codes relating to adaptation governance, points of contestation, points of support, Māori perspectives, and experiences of climate change impacts. We then developed initial themes that framed how submitters viewed or constructed ideas of desirable adaptive futures. These themes were reviewed and revised iteratively; identifying, refining and naming these as the 'adaptive futures' presented in the next section.

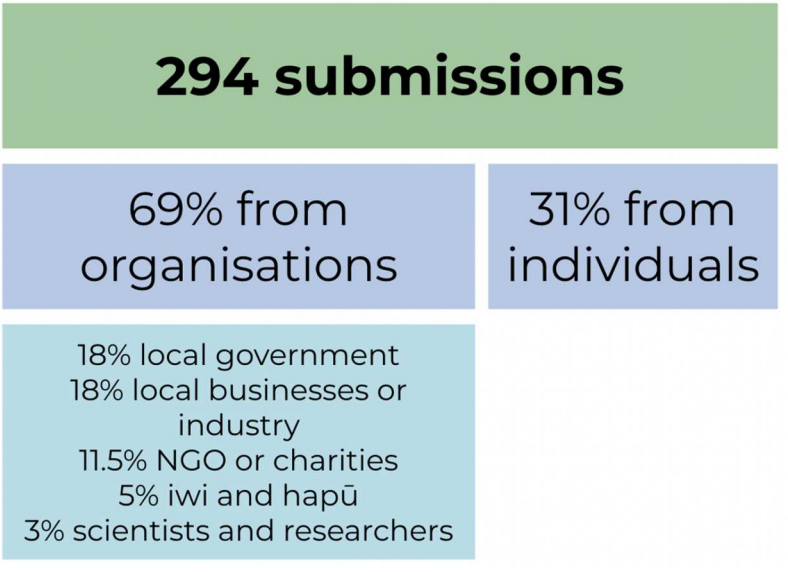

Figure 1. Breakdown of types of submissions to the draft National Adaptation Plan.
Note: not all submitters on behalf of organisations specified what type of organisation they represented.

The themes we discuss in this paper represent our interpretation of desired or imagined adaptive futures in the submission data rather than allocating each submission or submitter to a single adaptive future. Therefore some submitters shared perspectives that represented different aspects of multiple adaptive futures. While some submissions contained little that mentioned specific futures in relation to adaptation, most included statements or perspectives about ideal or desired pathways and approaches to adaptation that represented possible futures. In presenting this analysis we acknowledge we are a team of Pākehā and Tau Iwi researchers and that this necessarily informs our perspectives and analysis. Whilst we take care to note that we do not represent the diverse worldviews of submitters, we hope to draw attention to the emergent patterns, principles, debates, and advocacy coalitions that are presented in the submission data. We hope that this analysis may also provide opportunities for these debates to be investigated in more detail by researchers with appropriate cultural and knowledge expertise.

Positioning adaptive futures and socio-political change

We now discuss the four collective imagined futures identified from our analysis: data-driven resilience; growth and opportunity; nature-society change; and flaxroots transformation. These represent both divergent futures and a spectrum of adaptation that necessitates varied amounts of socio-political change from the status quo. Rather than forming distinct categories, these imagined adaptive futures also overlap and diverge in different ways, yet each seeks to anchor and border adaptive imagination.

To help make sense of the scope and plurality of these futures, Figure 2 represents each of these on a continuum representing differing degrees of socio-political change from the status quo. As we move away from the norm we can see how new, more transformative futures emerge and co-exist, expanding the scope of political possibility and seeking to share or claim power. The funnel shape draws inspiration from the 'futures cone' of Cork et al. (2023) and represents the political and social deviation from a more narrow and foreclosed imagined status quo to a multiplicity of coexisting alternative but still possible futures.

It is important to note that while some submitters, largely individuals, denied the existence of climate change, due to the scope of this paper, we have focussed this analysis on submissions that focussed on action for adaptation. More broadly, as shown in Table 1 this approach also helps delineate emergent framings and potential new advocacy coalitions, perceptions of the need for transformation, and most significantly, perhaps, the current boundaries of political possibilities that constrain or enable opportunities for change.

Data-driven resilience

The data-driven resilience future framed adaptation through socio-technical and techno-managerial approaches to catalysing change. This adaptive future represents the desire to achieve adaptation through changes to existing policies and mechanisms within existing political structures and institutions. Resilience is a common metaphor to illustrate the need for individuals, businesses, communities and institutions to be able to absorb or deflect the impacts of climate change (Cretney 2014; White and O'Hare 2014). Many submissions frequently utilised resilience as an ambiguous goal for individuals, communities and the nation. While it is not uncommon for resilience to be utilised in this manner, the

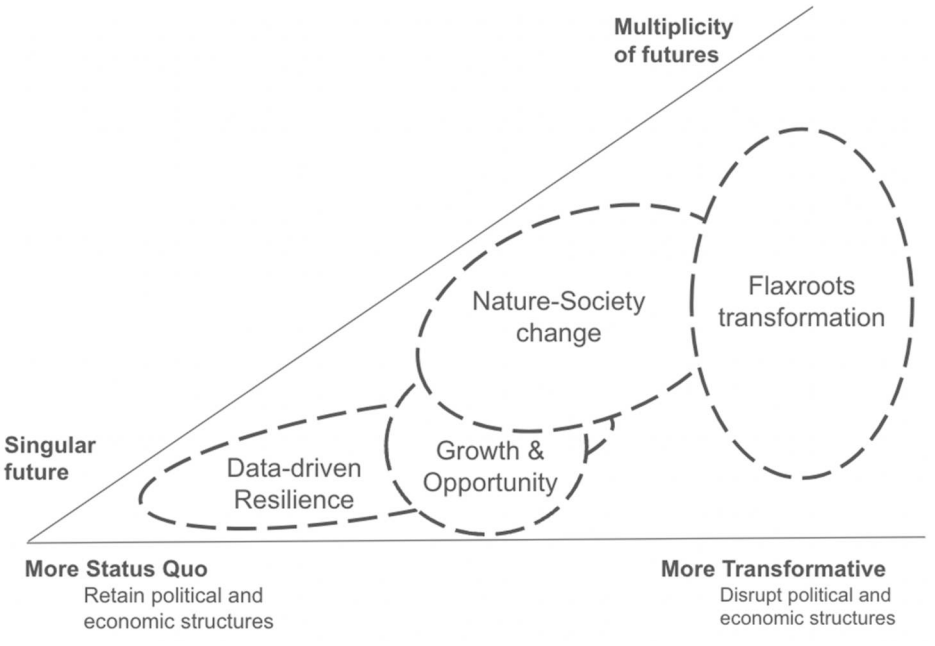

Figure 2. Visual representation of four adaptive futures on a spectrum of scope of possibilities from status quo to more transformative.

concept is subject to a multiplicity of meanings and is inherently politicised and contested (Cretney 2014; Harris et al. 2017). In this adaptive future imaginary, resilience was largely mobilised in a normative manner to refer to developing the ability for society to withstand the challenges of climate change, reinforcing a 'bounce-back' approach that aims to maintain business as usual rather than trigger a fundamental transformation or re-organisation of the drivers of climate change (Cretney and Bond 2014; Amo-Agyemang 2021).

Submissions that represented data-driven resilience imaginaries, framed data and knowledge as a core component of this future. This foundation developed a techno-managerial imaginary of adaptation that can be managed through greater availability of more complex and detailed data. The need for more data and information on risk and uncertainty was heavily emphasised in the government adaptation plan, so it can be expected that this focus would be included in submissions. For example, the NZ Bankers Association described the need for 'urgent access to climate data', while the insurer, Aon, stated that 'solutions need to be underpinned with good data and analytics (e.g. a measure of the cost of adaptation)'. Other large sectors followed a similar line, such as the power company Meridian, who stated 'the most useful enabler of climate adaptation is access to data'. Climate scenarios, risk assessments, physical risk data, national flood maps and projections data were all mentioned as important for achieving the goals of resilient climate adaptation. The issue here is not so much that emphasis on data was absent or present, as, of course, adaptation requires data, but the consistent imaginary it invoked connected to enabling action within the status quo – in effect positioning the future as similar to the present. The NAP process also revealed that access to information

Table 1. Emerging informal advocacy coalitions and framing for adaptive futures.

	Framing	Emerging informal advocacy coalitions
Data-driven resilience	• Techno-managerial approach to social and political change to achieve adaptation • Knowledge deficit approach to address uncertainty and risk • Emphasis on achieving change through existing institutions and political structures	• Industry groups and representative organisations • Businesses and corporations • Local and central government agencies
Growth and opportunity	• Possibilities for change are situated within the existing social and political status quo • Focus on opportunities for economic growth and innovation arising from adaptation	• Industry groups and representative organisations • Businesses and corporations
Nature-society change	• More integrated, holistic and place-based approaches to social and political change • Encompasses a diversity of approaches that range from working within existing systems to more transformational approaches • Some approaches consider more-than-human perspectives	• Local and central government agencies • Some iwi and hapū • Non governmental organisations • Community and environmental groups • Research organisations
Flaxroots transformation	• More transformational and radically oriented social and political change • Considers environmental and social justice to aim for new institutions, values and norms • A focus on a plurality of knowledge and worldviews, including those advocating for decolonisation and iwi/hapū led adaptation • Local and regional scale approaches through community aspirations for circular economies, food security and networks of care and reciprocity	• Community and environmental groups • Some iwi and hapū • Non-governmental organisations

and data is widely seen as an essential enabler of decision-making and action towards adaptation, but this was perceived as currently lacking.

In some cases, a data-driven adaptation approach was also preferred by industries that are large emitters and have historically lobbied for delays to climate action (Bullock 2012). For example, Dairy NZ stated that they 'prefer a focus on the action [in the draft adaptation plan] 'provide data, information, tools and guidance to allow everyone to assess and reduce their own climate risks'' as this is 'important for farmers to have access to relevant data and tools to enable them to adapt to climate change'. While data is undeniably important, it does raise the issue of whether this discourse could also be mobilised in a manner that delays action prior to obtaining more data, rather than taking action within an imperfect present (Lamb et al. 2020). A focus on data availability to guide individual change, as emphasised above, may also constrain more collective responses and instead direct focus towards individual risk approaches to adaptation that conform with notions of neoliberal responsibilisation (Joseph 2013). These data-driven resilience discourses are often rooted in socio-technical imaginaries of adaptation that have a strong reliance on expert and technical solutions that use data to inform various calculative practices that make risk and adaptation visible (Malloy and Ashcraft 2020; Davoudi and Machen 2022). In this adaptive future, power is given to the data and technical industries to shape the boundaries of futures, anchor debates, and narrow discussion to a range of adaptive possibilities that reflect industry and scientific norms.

It is important to note that the role of data and information in enabling local power and action was also emphasised by several Māori submitters in ways that challenged these

socio-technical imaginaries. Here, data and information were framed in relation to the specific needs of Māori organisations and communities. For example, a submission by Ihirangi emphasised that 'climate policy, law and solutions need to access the ground truth and empower it' noting that the Māori Climate Strategy should 'be local and granular, and underpinned by the best data/information/science available'. The submissions by Ngāti Whatua Orakei and Te Rūnanga o Ngāi Tahu also stressed the important role of the government in the provision of this data and information. Ngāti Whatua Orakei saw this as integral to 'enabling and supporting other parties to prepare their own adaption strategies'. Importantly, submitters described the importance of this data being appropriate and tailored to Māori contexts including the need for care and attention to data sovereignty, particularly in relation to mātauranga Māori and Māori data (*Wakatū Incorporation*).

Growth and opportunity

The growth and opportunity adaptive future frames climate adaptation as providing possibilities to leverage positive change while supporting some industries and organisations to benefit economically. This future was strongly represented by industry groups and businesses who saw opportunities for expansion or growth in investment through adaptation. In particular, opportunities were envisaged for investment in hard protection and infrastructure, such as the Aggregate and Quarry Association who focussed on 'the crucial role the aggregates sector will play in strengthening our resilience to a changing climate' and Concrete New Zealand who requested that the final National Adaptation Plan 'explicitly include concrete as a vital part of the solutions for national climate change adaptation'. Other industry groups discussed the opportunities for 'innovative solutions that will create a more climate resilient built environment' *(Fletcher Building)*, regenerative agriculture opportunities *(Woolworths New Zealand)*, and digital innovation *(NZTech)*. Infrastructure NZ noted the possibilities for more 'transformational' use of infrastructure and the possibilities to build more sustainable cities.

This adaptive future is strongly configured around the role of industry and business in undertaking and supporting adaptation and the corresponding need for this to be represented in the National Adaptation Plan and supported by government policy and investment. The Aggregate and Quarry Association in particular commented that they were 'surprised to see no references to our sector anywhere within the consultation document or the NAP, in connection with climate adaptation'. In line with mainstream thinking from industry and business, policy and regulation were framed by some as limiting the possibilities for growth opportunities to be realised. For example, Horticulture NZ commented that 'compliance adaptation costs needs to align with scale and impact, it is otherwise inefficient and could limit opportunities for positive change'. Yet, in other contexts, there were calls for higher standards and regulation that would provide a more certain environment for businesses to operate and invest in, such as the New Zealand Green Building Council, who noted that delaying improvements to new build standards is already producing inefficient buildings and may require 'costly refits in the future'.

There was a significant overlap with this future imaginary and that supporting data-driven resilience, both in a focus on data and information to enable opportunities, but also in the desire to work within the status quo of institutions and political structures

and to attract new government investment. For example, a submission by Amazon supported the focus on 'open data approaches … to inform policy decisions' and suggested 'opportunities for public-private collaboration'. These submissions were representative of the varied range of industries that saw opportunities to expand operations in responding to climate change. Many, but not all, submissions that represented aspects of this approach appeared to support adaptation that broadly replicated business-as-usual. The most overt example of this is the submission from mining and minerals sector interest group Straterra which stated under the heading 'The Regulatory Environment' that 'To optimise the contribution the extractive sector makes to climate change adaptation it is essential that extractive opportunities are available and accessible in New Zealand'.

In this sense there is a potentially maladaptive dynamic at play, whereby the opportunities arising from adaptation are seen to encompass and include extractive industries which continue to contribute to the underlying drivers of climate change. While maladaptation refers to adaptive action that has adverse impacts or increases vulnerability, Owusu-Daaku (2018 pg.935) suggests the term '(mal)adaptive opportunism' to represent the potential for adaptation to be ' overrun by interests other than the stated or intended objectives'. In framing adaptation as a future characterised by growth and opportunity it is vital that the potential for such maladaptive outcomes and processes are considered. For example, Concrete New Zealand also imagined adaptation as not just an opportunity for their industry, but one that would cement their vision of the ideal urban landscape:

> 'The words 'concrete', along with 'aggregate' and 'steel', do not occur anywhere within the consultation document or the draft Plan in connection with adaptation. Nonetheless, these materials will inevitably form part of the solutions to climate change adaptation.
>
> In support of this view, it is unthinkable that the Government would demolish Te Papa Tongarewa, the national museum on Wellington's waterfront, and replace the area with swales, wetlands or earthworks to manage sea level rise in the capital. In such a setting, concrete is the most cost-effective, feasible and practicable climate change adaptation solution.

Here it is interesting that the opportunities arising from adaptation are not only imagined in a way that benefits specific interests and industries, but also in a manner that also seeks to exclude the potential for more radical transformation through positioning alternative futures as 'unthinkable'. This demonstrates the ability of different adaptive futures to both enable and constrain the potential for transformative change and discount the opportunities for combined mitigation and adaptation.

Nature-society change

A focus on 'nature-based solutions' was strongly represented in the draft NAP text so it is not surprising that there was frequent mention of this approach in submissions. However, we identified a clear adaptive future centred around nature-society change that went beyond site-based solutions towards a more transformative interpretation that connected adaptation with more-than-human relationships, acknowledging the wider interconnections between the environment and society. This includes a significant focus on action that takes into account the health and wellbeing of landscapes and biodiversity, as well as utilising ecosystem services to maximise adaptive capacity for communities and built environments.

For many submitters, the importance of focussing on the environment in relation to adaptation was a means to expand the horizons of concern from solely human communities. Conservation organisation ECO submitted that the proposals in the draft NAP omitted 'significant concerns around the need to ensure that action in system wide and local level action does not undermine our unique biodiversity'. Similarly, Forest & Bird stated:

> A mountains-to-sea approach needs to be applied to nature-based solutions. Some nature-based solutions such as forest and wetland restoration may be located at significant distance from the at-risk people and assets that these solutions seek to protect.

Such perspectives spoke to the need to focus adaptation not just on human impacts, but the wider impact of climate change on the environment and non-human world.

Local government submissions were also highly supportive of an adaptive future that connects human and more-than-human communities. Hamilton City Council expressed strong support for 'the need for nature-based solutions in urban environments' and 'the need to consider our Natural Environment throughout our adaptation response'. Western Bay of Plenty Council noted that the natural environment is critical to climate change adaptation and that they would have 'expected to see more emphasis on nature-based solutions'. For some councils, this approach was also important for enhancing opportunities for 'kaupapa Māori adaptation underpinned by mātauranga. This would include restoring areas and, crucially, preventing development from occurring that is damaging to nature-based solutions' *(Greater Wellington Regional Council)*. The importance of co-benefits from nature-based solutions featured strongly as part of this future. For example, Hamilton City Council stated this approach could 'buffer against climate impacts, while also fostering wellbeing, sequestering carbon and increasing biodiversity'.

In many ways adaptive futures focussed on nature-society change supported more transformative approaches to adaptation that recognise the interconnections between society and the environment and attempt to reconfigure these relationships. As Auckland City Council stated:

> Our view is that a more comprehensive and collaborative approach is required to enable a transformational approach to restoration of the natural environment. All systems are interconnected, inter-dependent and interrelated with complex processes.

This approach holds the potential to cleave open new possibilities for understanding and reframing climate change, the environment and adaptation. As community organisation Foundation North stated:

> FN believe human systems are causing the problems … we recognise that humans are part of our natural systems. That means working on our ways of thinking and living in balance.

Other submitters also emphasised that by working 'with nature' to adapt to climate change, there was the possibility to 'address wider environmental and societal issues' *(Manawatū-Whanganui Climate Action Joint Committee)*.

These more holistic views of adaptation were also framed in a way that exemplified the central importance of Māori-led adaptation. Ngāti Whātua Ōrakei in their submission described how

> climate change is itself a symptom of a deeper problem, namely the disconnect in the relationship of people with the environment.

Te Ātiawa Manawhenua Ki Te Tau Ihu Trust described the importance of expanding ideas of community to include 'all living organisms – Koiora (all living communities: human, plant, animal) in the place which is the subject of management'. The ongoing role of Māori in advocating for these approaches was also important. As Ngāi Tukairangi said 'Māori across various rohe in New Zealand have been advocating for better care of our natural environment and have often had this ignored'.

This adaptive future holds dual possibilities: on one hand seeking new nature-society relationships which hold possibilities for transformation, while also advocating for nature-based solutions in their current form to be delivered largely within existing institutions and political structures. Adaptive futures focussed on more radical nature-society change represent an imaginary that challenges and re-works subjectivities and practices of adaptation that separate society and nature. This holds the potential to challenge socio-technical imaginaries of adaptation and to focus on the social, cultural and political drivers of climate change (Wright et al. 2013). There was also a recognition that in developing adaptation through nature-society change there is the potential to facilitate policy integration with other co-benefits for people and communities, such as increasing wellbeing, enabling biodiversity, or the need to provide greenspaces alongside housing intensification.

Flaxroots transformation

Flaxroots adaptive futures was the most transformative imaginary we identified. It encompasses the desire of many submitters to fundamentally transform how our society and communities operate to tackle the underlying drivers of climate change, including colonisation and capitalist economies. This adaptive future was represented significantly in individual and NGO submissions, and represented a call for change at the local, grassroots or 'flaxroots' scale *(Te Urunga o Kea)*. These calls centred on action that aims to disestablish and reconfigure political and economic structures. This adaptive future therefore holds the potential to open space for more radical alternatives to the status quo to be imagined and included calls from Māori organisations for decolonised approaches to climate adaptation.

In the first instance, many of those calling for more transformative approaches situated climate change within the wider political context, identifying the current singular future as part of the problem. For example, the Aotearoa New Zealand Association of Social Workers commented that 'power dynamics are inherent in climate change policy' continuing to say:

> Many actions with this plan still work to uphold an 'anthropogenic, capitalist growth economic paradigm' which is simply not compatible with environmental and human well-being and are in essence the drivers of climate crisis and poverty on all levels.

Similarly Ngāi Tamawhariua ki Katikati commented that:

> It needs to be acknowledged that business as usual has been and still is destructive for the environment. Business as usual, ie continued economic growth at all costs, serves to benefit the few, while the majority struggle.

Interestingly, this view was echoed in the submission from the Waimakariri District Council who stated:

> … we observe that the draft NAP reflects an understanding of climate change which is couched in a western neo-liberalist world view of environment, society and economy as separate and sometimes intersecting systems.

These comments formed the foundation of the flaxroots transformation approach in which the current capitalist and colonial status quo were positioned as both the cause of climate change, and a target for socio-political change. These perspectives also highlighted the risk that adaptation that does not take into account these drivers, especially those 'designed for the benefit of 'wider society' may have maladaptive impacts to the health and wellbeing of the most marginal members of Māori society' *(Individual Submission #47)*.

Action at the community and local scale was heavily emphasised by submitters in a manner that sought to re-imagine and challenge pre-existing norms and values around social, economic and political systems. This ranged from smaller scale practical solutions for adaptation including growing fruit and vegetables locally for food security, reducing waste, local currencies, time banks, community energy schemes, developing local urban planning strategies, such as the '20-minute city', and supporting climate action and zero waste hubs. Central to many of these suggestions was the need for support and resourcing for 'local-led solutions to local-impact climate change' which Foundation North described as 'powerful pathways for the aim of being fit for climate change'. Social justice concerns featured prominently in this adaptation approach. Submitters mentioned the importance of working towards degrowth, providing liveable incomes, ending poverty, supporting the community sector and kaupapa Māori organisations, a universal basic income and wealth taxes. The Disabled Persons Assembly also identified the need for a much more significant focus and integration of disability in approaching adaptation stating 'the entire adaptation plan needs to take a disability transitional lens'.

For many submitters, addressing climate adaptation requires a clear focus on Māori-led adaptation. Ihirangi, a group of Māori climate and environmental experts, stated that 'Climate solutions are to be grounded in the pre-existing tino rangatiratanga relationships, responsibilities, and rights of Mana whenua'. Others noted that empowering iwi was essential for adaptation, while another commented on the importance of 'removing barriers to Maori self-determination, respect for mana whenua and regard for matauranga Maori'. One individual commented that they had 'observed that many Māori communities (and particularly the wāhine within these communities) are already taking flaxroots actions … ' they continued:

> If government is truly committed to enhancing resilience to climate change these flaxroots strategies must be recognised (and given legitimacy) as tools that communities are already using to reduce their vulnerability to climate hazards. Supporting these is key (*Individual Submission #47*).

Another individual commented: 'We want legislation and policy that is decolonised, and empowers and enables us as Maori landowners' *(Individual Submission #103)*. Others, such as Ngāti Rangiwewehi, stressed the importance of giving full effect to Te Tiriti 'with appropriate prioritisation to the indigeneity and indigenous rights of mana whenua'.

The Rauora Framework in particular was noted by some as providing an opportunity to provide decolonised approaches for whanau, hapū, iwi and community scale decision-

making *(Papa Pounamu)*. Many iwi submissions noted the alienation, dispossession and confiscation of lands as contributing to their increased climate risk but also as an ongoing injustice that needs to be addressed through forums such as the National Adaptation Plan. For some submitters this reinforced the interconnected nature of colonisation and climate change. Papa Pounamu commented that their biggest concern 'is that climate change is synonymous with colonisation'.

Submissions that supported these calls for transformative approaches represented the potential for climate adaptation to contest dominant norms and values, creating space for more radical alternatives to the status quo and the sharing of power. Responding to the question in the submission form 'what would help you assess your risk and help you adapt?' one submitter commented: 'Please stop focussing on me as an individual, I will only adapt and survive if my community does' *(Individual Submission #57)*. Importantly, one individual commented that locally driven adaptation not only catalyses practical steps but also provides leadership and builds hope (*Individual Submission #101*). These types of adaptation action can be seen as a type of prefigurative politics or the creation of desired futures in the present as a form of political action (Chatterton and Pickerill 2010). Cloke et al. (2023, p. 202) highlight similar experimental and place-based approaches in post-earthquake Ōtautahi Christchurch that embraced the 'future in the present' to reimagine a multitude of possibilities. Similarly, the submissions to the NAP showcase how communities and flaxroots organisations are working towards their desired adaptive futures on their own terms in a way that builds capacity and momentum towards wider social and political transformation.

The politics of imagining 'future presents'

Imagining futures is a 'political act that configures present actions, behaviours and decision making or future presents' (Yusoff and Gabrys 2011, p. 519). Our analysis seeks to make sense of the submissions to the first NAP through exploring how different adaptive futures are imagined and by whom. The intention in representing these is not to create a rigid framework for classifying how adaptive futures are imagined, but rather to highlight the connections or divergence between diverse visions for adaptation by different individuals, iwi, hapū, organisations, industries and communities.

Imagining different futures is important as it shapes what is seen as possible both imaginatively and materially. The first National Adaptation Plan provided both an opportunity to delineate key future risks and critical questions, as well as receive guidance on the boundaries of what is seen to be possible. As Goode (2022, p. 196) states 'the capacity to shape public expectations about the future is a form of political power … ' that can constrain the 'horizon of possibilities'. The submissions made to the NAP demonstrate the breadth of imagined adaptive futures and importantly, how different coalitions of stakeholders coalesce around certain visions. For example, the submissions made it clear that data driven resilience will be a factor in future adaptation, but to what extent will other imaginaries be politically acknowledged and embraced? It is not that adaptation governance or decision-making shouldn't utilise and develop data or the potential for growth, but it is the way these dominant imaginaries may fail to question the influence of current institutions or power, and what is therefore seen as acceptable losses and risks for whom and when. Exploring these wider adaptive futures contributes important insights to

current adaptation politics and has implications for who leads change and who benefits. It is also important to note that while the questions and tone selected in the NAP were frequently directive and did not invite more transformative visions, the submissions challenged this framing and provided these anyway, potentially revealing a broader appetite for societal change.

Reflecting on the adaptive futures represented in the NAP submissions provides insights into the power dynamics of adaptation and how actors and stakeholders view possible futures. For some, the future is an extension of the present, a deepening of socio-technical governance and continued scope for economic growth and expansion. This dominant framing across government and industry sectors relies heavily on emphasising risk from climate disasters and hazards as a threat that can be addressed through socio-technical solutions and amorphous claims of enabling resilience, often at the individual or building scale. In doing so, the future is presented as simultaneously at risk and controllable. For others, the future is uncertain yet malleable, holding the potential for much more radical change. Threats to stability or the status quo pose risk to those most vulnerable, but also hold the potential for transformation of social and political systems (Nightingale et al. 2021; Cloke et al. 2023). Indeed for many, future climate risks serve to shed light on the inequality, marginalisation and injustice that is currently experienced (Farbotko et al. 2023). The way adaptive futures were framed and represented in the NAP submissions spoke to these different views and temporalities and reflected aspirations for both maintaining business as usual and more radical approaches to transformative change.

Furthermore, unpacking these adaptive future imaginaries reveals the informal advocacy coalitions coalescing around adaptation in Aotearoa. Advocacy coalitions form around people who share similar values, beliefs and problem perceptions (Mintrom and Norman 2009), not dissimilar to imaginaries which are centred around shared understandings, beliefs, norms and meaning that underpin how institutions and political systems are organised (Levy and Spicer 2013). Submitters representing industry and businesses were more aligned with adaptive futures that emphasised the opportunities for growth and the potential to manage risk through a socio-technical lens. On the other hand, many community and locally oriented organisations framed possible adaptive futures as a call to action that emphasised social and ecological justice while highlighting the need for action towards adaptation that is culturally and place specific.

These adaptive futures, and the advocacy coalitions that mobilise around them, play a central role in shaping what is seen as politically possible and ideologically desirable in relation to climate adaptation. For example, adaptive futures focussed on *data-driven resilience* and *growth and opportunity* support change closer to the boundaries of the status quo and therefore risk perpetuating the institutional and political structures that maintain injustice and inequality. Bond and Barth (2020, p. 1) describe how adaptation that follows a 'common-sense response under current 'business-as-usual' conditions in which the market is privileged' will likely result in outcomes that protect wealthy property owners while poorer communities are subject to relocation. This aligns with commentary by Paprocki (2022b, p. 1339) on the concept of 'anticipatory ruination' in which 'future imaginaries are in turn mobilized to enact existing agendas for development and landscape transformations'. This is particularly problematic when mobilised against places and communities that are deemed 'already doomed' and thus subject to

dispossession and erasure (Paprocki 2022b). As communities and government in Aotearoa New Zealand work to implement the NAP and in particular, policy relating to planned retreat and relocation, it is vital that these assumptions do not go unchallenged.

More radical adaptive futures are mobilised not only to imagine more transformative change but to articulate a call for action and demand for justice and power that centres the uneven impacts of climate change. The positioning of dominant futures globally in relation to climate adaptation has been and continues to marginalise and exclude certain communities, including Indigenous people, disabled people and people from refugee or migrant backgrounds. As Chakraborty and Sherpa (2021) note, climate change must be situated within the social and historical context. Our analysis, and in particular the adaptive futures focussed on *nature-society change* and *flaxroots transformation*, highlight the coalitions that are calling for wider consideration, integration and empowerment of diverse perspectives and imaginaries in decision-making and planning for adaptation in Aotearoa. This emphasises the need for integration and a plurality of knowledge, worldviews, experiences and voices alongside a multiscalar approach to adaptation.

Furthermore, working with a plurality of knowledge and worldviews requires approaches that do not co-opt or seek to shape other forms of knowledge through a positivist or Western worldview (Harcourt et al. 2022; Hyslop et al. 2023; Kenney et al. 2023). Here, work on decolonising resilience is relevant. As Amo-Agyemang (2021, p. 12) describes 'decolonised approaches … aim to make visible distinctive perspectives grounded overwhelmingly in Indigenous lived realities, values, experiences, histories, cultures, ideas, and aspirations, as well as a fundamental reconceptualisation of the very idea of resilience'. In the Aotearoa New Zealand context, centering and empowering Māori perspectives and knowledge is not only integral to honouring Te Tiriti and working in partnership but also allows for adaptation to be framed as an ongoing process that is tied to the past and present, as well as the future (Harcourt et al. 2022; Hyslop et al. 2023; Lawrence et al. 2023). Hyslop et al. (2023, p. 233) emphasise the importance of ensuring mātauranga Māori is valued equally alongside other forms of knowledge, and that recognition of these frameworks are locally contextualised, 'dynamic, multi-dimensional, interconnected and inclusive of spiritual or metaphysical considerations'. Similarly, Harcourt et al. (2022, p. 393) describe He Waka Taurua, or a double hulled waka, as representing the separate and distinct knowledge systems of Te Ao Māori and western science which are connected through a 'shared or negotiated space' represented through the papanoho or deck.

In particular, the submission by Te Rūnanga o Ngāi Tahu emphasised the importance of diversity within and between Māori communities, calling for a mātauranga a iwi approach that values the contribution and specific needs of each hapū and iwi. The submission by the Pacific Advisory Group also highlighted the diversity of views within the Pacific community and the lack of acknowledgement by the government of the 'depth and breadth of knowledge that Pacific communities have to offer'. For the disability community, there is a need for more visibility and genuine partnership with government and decision-making bodies to address the significant increase in vulnerability and risk the community faces, as well as the potential to build a more accessible future through adaptation (Jodoin et al. 2023). Approaches that emphasise this plurality therefore can

support more transformative adaptation which goes beyond merely 'climate proofing' what already exists to 'deliberately and fundamentally changing systems to achieve more just and equitable adaptation outcomes' (Shi and Moser 2021, p. 2).

In understanding the politics of imagining 'future presents', the challenge for Government in designing policy processes is now to move beyond individual submissions and to consider where adaptive futures may be in alignment, and how different groups and communities experience climate change and mobilise calls for action. Understanding these different imagined futures also demonstrates the importance of place-based and local perspectives alongside national scale approaches. Submissions made by NGOs, community groups, Iwi and hapū demonstrate the action that is already being undertaken on the ground and provide insight into how this could be strengthened. There is a need for a multi-scalar and culturally specific approach to adaptation, place-based policy and governance that works alongside national scale policy. This needs to go beyond mere engagement and fully embrace community development style approaches that empower communities and engage with the challenges and opportunities that arise from adaptation-in-place (Bond and Barth 2020; Simon et al. 2020; Stephenson et al. 2020). Harnessing more transformative adaptive futures will require governance that goes beyond consultation or engagement and instead works to build capacity, support and partnerships within and between communities in a way that embraces relationship building, empowerment and diverse collective and individual identities (Bond and Barth 2020).

Conclusion

The release of the first National Adaptation Plan provided an opportunity to have an inclusive conversation that has been perceived as overdue: 'to identify what we want to protect, what that could cost and who should pay, how much change we can tolerate, and the implications of these choices' (Lawrence et al. 2023, pg.2). Its subsequent analysis provides further insights. The four collective imagined adaptive futures we identify enable broader analysis beyond these themes.

First, this analysis provides insight into the way different actors and organisations frame possible futures which demonstrates diverse engagements with, and understandings of, social and political change. As we face not just the challenge of adapting to climate change but also a cascade of interconnected social and environmental crises, imagined futures provide a glimpse into desired pathways and outcomes for change from different actors. Second, the futures discussed in this paper reveal the informal advocacy coalitions that are coalescing around preferred futures. The alignments of established business or sectoral interests, particularly those who may already have a degree of power and influence and who see climate adaptation as presenting economic and growth opportunities. It is also interesting to note the new networks that might emerge and mobilise to challenge these, such as the diverse submitters arguing for *nature-society change* with its more integrated and complex approaches. Third, the range of adaptive futures demonstrates the need, and appetite, for an integrated multi-scalar strategy that embraces a plurality of knowledge and worldviews. One where national level policy can provide broader investments in data and science, and outline new governance arrangements, that are able to facilitate the desire for discussion of more localised futures and place-based adaptation.

The final aspect of note is that envisioning collective futures and the co-benefits of climate action can provide insights into excluded voices and motivate further action. For example, while there was a wealth of submissions there was a relative lack of youth voices. This may be a point for the government to reflect upon – we would argue that this means of technical, formal and lengthy public engagement may work well to engage sectoral interests, but is an entirely inappropriate means to engage with some groups of people who will be most affected by climate change. Notwithstanding this oversight, while there was a clear desire amongst some powerful groups to maintain current structures, the submissions also revealed more transformative calls to action from some groups that advocated ceding power to greater plurality of voices and knowledge. This plurality questions not just the need for change, but what is transformed, how, and to what? This was represented through the flaxroots transformation adaptive future that embraced a multitude of experiences and knowledges to foster adaptive futures that acknowledge existing societal vulnerability, injustice, and histories, and their intersections with both current and future disadvantage. The calls for 'resilience' to withstand and cope with shock that were central in the more business-as-usual futures were not present here, it was a call for resilience through societal transformation. While there are many aspects in these futures that show compatibility, the tension between conservative and more radical futures is the one that will be hardest to reconcile and the one that will require significant ongoing struggle.

Note

1. The questions answered through the online form can be accessed as part of the Ministry for the Environment (2022) summary of submissions and included general questions on the impact of climate change, questions about agreement and feedback on each individual chapter and a separate set of questions on managed retreat.

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Data availability statement

The data that support the findings of this study are openly available through the New Zealand Government Ministry for the Environment at https://consult.environment.govt.nz/climate/national-adaptation-plan/consultation/published_select_respondent.

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