

Coastal Adaptation

Adapting to coastal change and
hazard risk in Aotearoa New Zealand



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What does success look like? A flaxroots perspective of adaptation

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Introduction

The rate and potential scale of climate change and its cascading environmental and societal consequences are unprecedented. The world is already in uncharted territory at 1.2°C above pre-industrial levels, and the sum total of all nations' policies will likely lead to a world hotter by 2.7°C and perhaps a catastrophic 3.6°C or more by 2100 and beyond¹. Aotearoa has to be prepared for the worst-case scenario because we cannot trust that the highest carbon-emitting nations and powerful incumbent industries will take action in time. Even at a most optimistic rise of between 1.5°C and 2°C, every living thing will be affected. Local and global environmental and social systems will be destabilised.

At its most fundamental, success for Aotearoa means being prepared for this scale and rapidity of change.

We write this article from the perspective of socially engaged researchers, bringing together mātauranga (Māori knowledge), anthropology, human geography and sociology disciplines, including listening deeply to those who we work with. We see the climate crisis as a human and environmental predicament. The predominant social, cultural and economic systems that have spread around the globe through processes of colonisation and globalisation have evolved with an underlying assumption about the stability of global and local environmental systems. Climate change will increasingly destabilise these systems, unsettling what is 'normal' for whānau (extended families), kāinga (settlements), hapū (kin group collectives), iwi (larger collectives of kin groups), individuals, community and civic organisations, local and central government. In these uncharted waters, we draw from mātauranga and from the experiences and observations of those on the front line to propose seven principles to guide collective action.

Good process

'Success' might suggest that at some point in the future we will have adapted; that in all facets of society we will have achieved an effective response to climate change and can rest on our laurels. But the nature of the climate crisis means that the only certainty is ongoing change for decades and probably centuries. Changes to biophysical systems; changes to ecologies; changes to food systems; ongoing human displacement; impacts on health and wellbeing; increasing chances of geopolitical instability and global financial crises and more. In this new reality, success is not an end point. Success engages good processes, which in turn leads to improved outcomes for environments and for people.

By process we mean the ways in which people engage with each other and the problems we face. It includes how central and local government engage with each other and with communities, and how kāinga and wider communities take action in their own right. A focus on process encourages us all to think about who is involved in decision making, how

those decisions are made, and what those decisions set out to achieve.

Good process needs to take into account not only direct impacts such as floods or storm events, but also longer-term shocks from cascading impacts, both locally and globally. As we are already seeing with a global pandemic and with energy becoming a weapon of war, global supply chains, food systems, energy prices and financial markets can easily be destabilised. Adaptation to climate change is just one aspect of the even more fundamental transition to a sustainable future for humanity. This includes the radical changes required over the next 30 years to decarbonise all aspects of production and consumption. These multiple challenges to business-as-usual require an integrated approach at every scale, but particularly at the local level.

Principles for adaptation

The authors of this article have worked with kāinga, hapū, iwi, wider communities and councils over many years as they start to grapple with the implications of climate change for both coastal and inland areas. We draw inspiration from their wisdom, stories, struggles and innovations to suggest principles to aid successful adaptation through the lens of those who will be most affected by climate change.

The principles presented here are applicable to all adaptation processes, regardless of who is involved. They guide us to think systemically and holistically about problems, to be concerned for health and wellbeing, to recognise and provide for the mana of communities as agents of change, and to ensure livelihoods are in balance with the life-giving attributes of ecosystems and environments. They remind us that responses to climate change will need to be locally relevant, and inclusive. They emphasise the importance of equity and fairness and the need to support kāinga and other communities that are already taking action because they can see the storm on the horizon.

The starting point is with mana whenua. The enduring commitment of mana whenua to place means that they have a critical role in developing locally-relevant responses to climate change. Partnerships based on Te Tiriti o Waitangi (the Treaty of Waitangi) are an essential part of effective adaptation, and are discussed elsewhere in this publication.

Iwi, hapū and kāinga are genealogically embedded into lands and hold the knowledge of generations of people who have lived there. They continue to enact (as far as they are able despite the impacts of colonisation) the perpetual responsibilities of kaitiakitanga (guardianship/stewardship) in relation to those lands, irrespective of freehold title. Te Ao Māori (Māori worldview) offers values and ways of thinking that are of immense relevance to the process of adaptation.

Principle 1: Oranga

Oranga refers to health and wellbeing, and is the ultimate goal of adaptation. Oranga reminds us that human health and well-being are dependent on environmental health and

¹ <https://climateactiontracker.org/publications/glasgows-2030-credibility-gap-net-zeros-lip-service-to-climate-action/>

therefore will be affected by climate change. From more dramatic scenarios where homes are lost to flooding or encroaching seas, to more subtle situations where gardens wilt from a lack of water year after year, the effects on health and well-being are undeniable. We are also likely to see worsening mental health through the anxieties of dealing with issues such as insurance, local councils, banks and costs related to home alterations/repairs and the innumerable related health issues arising out of stress. There are multiple other contexts also where human health will be affected (Royal Society, 2017). Centring *oranga* means considering health and wellbeing holistically in all adaptation processes.

Principle 2: Ki Uta ki Tai

Ki uta ki tai refers to connectedness: between inland and coastal areas, between freshwater and sea water, between people and waterways, between an ancestral past and a descendant present and generations yet to come. This connectedness is also tied to the health of people. For example, if waterways are not healthy, then people can be at risk from already-degraded water being further degraded by increased flooding or droughts. These create further pressures to already vulnerable ecosystems. *Ki uta ki tai* is a fundamental planning principle that draws attention to environmental, cultural, ecological, and economic interconnections.

Principle 3: Mana

Mana, meaning here authority, power, stance, or positioning, can be broadly applied to communities as agents of change (Kawharu and Tapsell, 2019). As policies, plans and actions start taking shape to support communities to adapt to the challenges of climate change, it is important to recognise and provide for their *mana* throughout these processes. This means identifying the social (including cultural and political) source(s) of *mana*, considering capacity and representation issues or limitations, and designing engagement processes accordingly.

Principle 4: Kaitiakitanga

Kaitiakitanga, meaning custodianship, trusteeship, or guardianship, can guide all towards achieving resilience in the face of climate change challenges. It accentuates the importance of learning from (ancestral) past precedents of how to live well in balance with the life-giving attributes of ecosystems and environments. Applying *kaitiakitanga* also means seeking modern ideas and technologies in developing solutions to climate change problems. It reminds us that a reciprocal relationship with our environment is important to sustainable resource use. Our environments and all living things – the world around us – have their own *mana* or integrity and function within a system. Communities are caretakers of these systems for following generations.

Building resilience and safeguarding future generations will involve much more than just adapting – significant behavioural changes will be needed to address the cause of the climate crisis, which ultimately stems from a capitalist colonial system that has disrupted the natural systems of our world through commodification and the over-exploitation of resources, people, and wider environments. *Kaitiakitanga* is a foundational principle to guide this comprehensive transition whilst recognising the life-giving and healing attributes of environmental systems (Kawharu, 2020).

Principle 5: Tailored responses

The impacts of climate change will be very different depending on the locality. From a purely physical perspective it will depend on factors such as the coastal geomorphology, degree of sea-level rise, exposure to storm events, flooding from inland, or increasing marine heat waves. From a built perspective it will depend on the location of infrastructure, housing, commercial operations, and social facilities. From a human perspective, impacts will depend on *kāinga* and wider community engagement, who lives where and how people are affected. All of these factors mean that each place, and the people of the place, will be uniquely impacted and differently affected even within those places.

This means that responses must be tailored to place and people. At a national level, new laws, policies and institutional arrangements need to be robust and equitable. At a local level, adaptation responses must be locally responsive. Local authorities have a particular responsibility in this respect.

Principle 6: Long-term relationships

To help forge a path into an uncertain future, local authorities will need to develop long-term relationships with *mana whenua* (inclusive of *marae to iwi*) and other communities. For *mana whenua*, this is about providing for the expression of *mana/rangatiratanga*, that is, the right to self-determination as promised by *Te Tiriti o Waitangi* (Ihirangi, 2021). This may take many forms depending on people and place and is covered more fully in other articles in this publication.

More generally, the conventional approach used by councils to interact with the public has traditionally involved inviting formal public responses to pre-planned options, such as through submissions or public meetings. This approach is not appropriate for adaptive processes. It limits who attends and participates, and misses large sectors of communities who have important contributions to make and a right to be involved in decisions that affect them. Some people and groups are well accustomed to ensuring their voices and values are represented in local, regional and even national decision-making processes, and may use costly legal avenues to ensure their views and values are considered by decision makers. Those who miss out could be hampered by having other more immediate concerns (like accessing suitable food or housing), or due to systemic and unequal access to resources (including education, time, and having the 'right' kind of knowledge). If this imbalance is not corrected it increases the risk of maladaptive decisions that only benefit the wealthy or privileged who are able to work within the typical practices of local government. It increases the risk of inequitable and short-term solutions that will exacerbate existing inequalities.

Instead, local authorities need to reach beyond those who can easily come to the table, and put a special focus on those who struggle to engage, who find local authorities convoluted, frightening, confusing, or inaccessible. They need to build trusting relationships with the communities they are responsible to, and these relationships need to be sustained over time, so that when hard adaptation decisions are made, there is understanding on both sides that enable a collective path forward to be planned. This may require thinking beyond the technical or engineering questions generally considered in 'coastal adaptation', to wider concerns like how communities make their livelihoods,

access critical services, grow and distribute food, care for one another, and meet other core human needs. In this sense, effective adaptation is effective community development, and may require new skills amongst council staff (Stephenson et al., 2020).

When a local authority has strong community relationships, they have an in-depth understanding of issues, concerns, values, and place attachments. They are culturally competent and responsive to kāinga, hapū and iwi needs and aspirations. The authority will know the most appropriate forms of engagement for different groups within that community, and will be able to work meaningfully with them to ensure there is a sense of self-determination including shared decision making that follows. They will be confident that the decisions are robust, fair, and inclusive.

Principle 7: Supporting self-determination

This final principle recognises the power of communities to drive their own transitions. This is an extension of the principle of mana discussed above. In our research with kāinga and wider communities we have seen many examples of how they are already taking action on their own initiative. Most are environmentally-focused; some are also social needs-focused (e.g., energy, housing). This includes developing their own climate change plans, developing community gardens, housing improvements, skill-sharing platforms, predator control, restoring wetlands and rivers, and coastal restoration. Some are already experiencing the early impacts of climate change and all are preparing for a challenging future. They are also reaching out to work with councils and other organisations, making submissions, and looking at how to collectivise and share their experiences. They see little distinction between mitigation and adaptation – it is about climate response, and more generally doing what they can to build resilience and sustainability at a local scale in ways that also have wider impacts.

These initiatives are not random and nor are they inconsequential. Kāinga and many place-based communities are not protected from the realities of climate change by wealth or the ability to relocate. They are at the frontline of impacts, so they observe changes, learn what they can, and kōrero (converse) amongst themselves about what they can do. Anyone working professionally in the adaptation



Oromahoe Marae, April 2020. Rereata Makiha speaking on maramataka, mātauranga, climate change and seasonal environmental indicators. Photo: Merata Kawharu.

space should be in awe of them, because this is what the future needs to look like.

But people in kāinga and communities more widely are often not resourced to do this work and instead undertake actions because they are deeply worried for current and future generations and for the health and wellbeing of all living things. This is what kaitiakitanga means. For kāinga leaders, these duties are inbuilt and ancestrally-framed. To achieve the kinds of transformative changes needed to respond to climate challenges, these currently dispersed bottom-up initiatives must become widespread and normalised. This won't happen without support. Communities need to be adequately supported and resourced to develop and undertake their own resilience strategies. From this they can build a body of knowledge and experience that can be shared with others to amplify the benefits.

Conclusion

If we had a single measure of success, it would be that kāinga and communities face this uncertain future with confidence. Effective adaptation processes will require a multitude of changes to regulations, funding arrangements, policies, and infrastructure investments. But unless local decisions are strongly shaped by those who are directly affected, there will be resistance, contestation, maladaptation and delays.

Successful adaptation means developing equitable, fair and inclusive processes which give proper recognition to the mana/rangatiranga of kāinga and engage meaningfully with affected communities. It means embedding ki uta ki tai, oranga, mana and kaitiakitanga into decision-making processes and actions at every level. Adaptation does not have a foreseeable end. The closest we can get to success is having communities that are prepared for, and empowered to respond to, an increasingly unpredictable future.

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