

# The climate change challenge for Māori

Māori groups (Whānau, Hāpu, Iwi, communities and business entities) have unique economic, social and cultural systems that are strongly tied to the natural environment. Almost 50% of the total Māori asset base is invested in “climate sensitive” primary industries (forestry, agriculture, fishing and tourism).

This means a large part of the Māori business economy is vulnerable to climate-induced impacts. The broader social, economic and cultural impacts of climate change on Māori communities are also expected to be disproportionate, due to the remote location and the low economic status of many communities.



Due to the socio-economic disparities of many Māori groups and the collective ownership model most Māori businesses operate under, the key differences or complications in relation to preparing for climate change are:

- Additional compliance required under legislation such as the Treaty of Waitangi (Fisheries claims) Settlement Act (1992).
- Governance and management activities are restricted by Te Ture Whenua Māori Act/The Māori land Act (1993).
- The role of the Māori Land Court, and associated statutory sales restrictions related to land tenure, rules out options such as sale, relocation, or borrowing of capital to cover investment in adaptation options or development to manage climate change impact, which are more commonplace for mainstream businesses.
- A disproportionate amount of Māori land is remote and marginal.

These factors impact on the ability and speed at which Māori businesses and their communities are able to make strategic decisions regarding adaptation to climate change.

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## Climate change in New Zealand

Predictions of climate change effects by mid- late-21<sup>st</sup> century include:

- Northern and eastern areas of NZ will be warmer and drier (i.e. prolonged and increased solar intensity in these areas).
- East-west coast rain gradients are predicted to become more pronounced (i.e. wetter in the west and drier in the east).
- Increased demand on surface and ground water resources; water-stress is likely to increase during hot dry summers.
- Increased frequency of extreme weather events and climate related hazards such as drought, storms, heavy rainfall and floods.
- Changes in regional ocean temperatures, currents, winds, nutrient supply, and ocean chemistry.
- Rise in sea level and a compounding effect of storm surges and high tides on coastal communities and infrastructure.



## Climate change impacts on the Māori asset base

### Agriculture



Warmer, drier and water-stressed areas will experience a reduction in pasture quality and persistence; increased soil microbial activity and therefore, more demand for soil nutrients; reductions in frost frequency, required for bud burst in some horticultural species; changes to pest and disease occurrence in animals, pastures and crops; and

increased heat stress days for animals. Reduced soil moisture and groundwater supplies and river flows will also further aggravate existing water management challenges, both water quantity and quality, for farm operations reliant on irrigation.

### Fishing

Changes climate change will likely impact regional fisheries productivity and operations, fishing incomes and, therefore, ocean-based investment patterns. Changes in productivity and stocks of warm and cold water fish and shellfish species (e.g. snapper, crayfish and paua, kina and mullet), will also impact on commercial and customary fishing activities.



## Forestry



Changes in climate will likely impact on tree growth in drier hotter regions and impact on land stability and erosion for plantation access and establishment in wetter regions.

## Tourism

There is likely to be habitat loss and/or species migration as climatic and ecosystem conditions change. Extinction of iconic endemic species as evolutionary processes, may fail to keep up with the anticipated rate of climate change.

There is an urgent need for more information about how climate change will impact many of the Māori businesses and communities that rely on our land and water resources. What is known is that those at most risk from climate change will be:

- Those operating in remote and isolated areas, and vulnerable to loss of infrastructure, such as power and roading, as a result of weather extremes.
- Businesses and communities already operating at the edge of climate tolerance.
- Businesses and communities already under financial, social and biophysical stress.
- Businesses and communities where long-term investments have been made, thereby limiting the capacity to respond to change e.g. in slow growing forest species.

Other impacts on all Māori businesses involve climate change mitigation policies such as increased fuel costs and taxes related to greenhouse gas emissions. The lack of clarity around carbon policies (e.g. carbon credits for the creation of 'carbon forests') has caused many Māori businesses to delay making appropriate investment strategy decisions. This lack of clarity is limiting their options for the future. There is an increasingly complex range of production factors to take into account and there will also be indirect impacts on international export markets and policies, which Māori businesses will also have to navigate.

A changing climate may also provide opportunities to establish markets for novel crops and animal species in the primary sector. Many successful adaptations have already been demonstrated, particularly in the fisheries industry, and the southward movement of wild fisheries may create new opportunities. However, some of these benefits are expected to be short-term and are likely to diminish if current greenhouse gas emissions are not reduced or capped.

## Broader impacts on Māori communities

As extreme weather events increase in frequency, there will be increased risk of damage to life line services such as roads, buildings, utilities and flood and fire protection structures, especially in isolated areas. Many coastal Māori communities will be vulnerable to sea-level rise, high tides and widespread coastal inundation. These changes will result in the erosion of coastal infrastructure (e.g. roads, homes, and utilities) and the loss of inter-tidal food gathering areas and sacred places (e.g. urupa and marae situated close to the coast). There will also be major issues in localities and communities where reticulated water supply systems are poorly developed or do not currently exist.



The major obstacles for all Māori groups will be to gain access and to implement technical information within their businesses and communities in order to respond to climate change. It is therefore critical for Māori groups to develop their own internal climate change capability and become actively involved in the governing and planning processes around climate change adaptation strategies, so that their unique systems and circumstances are accommodated for in future planning.

## Further Information

The full technical report is: *The climate change matrix facing Māori society*. In: Climate change adaptation in New Zealand: Future scenarios and some sectoral perspectives. Nottage, R.A.C., Wratt, D.S., Bornman, J.F., Jones, K. (eds). New Zealand Climate Change Centre, Wellington, pp 100 – 111.

This can be freely downloaded from:

[www.climatecloud.co.nz/CloudLibrary/Climate%20change%20adaptation%20in%20New%20Zealand%20\(NZCCC\)%20\(A4%20low\).pdf](http://www.climatecloud.co.nz/CloudLibrary/Climate%20change%20adaptation%20in%20New%20Zealand%20(NZCCC)%20(A4%20low).pdf)

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