



Helping New Zealand Prepare for and Adapt to the Impacts of Climate Change

Our climate is changing and in ways which affect all of us with warmer temperatures, rising sea levels, more floods and droughts, and stronger winds. If we start adapting now to the change, and respond with flexibility and foresight, we will not only reduce the risk, but also benefit from the opportunities offered by a changing climate.

WHAT DOES CLIMATE CHANGE MEAN FOR US?

Most scientists believe that because of emissions already in the atmosphere, climate change is inevitable, irrespective of future greenhouse gas emissions. The impacts of that climate change in New Zealand will vary across the country and include:

- more frequent and intense weather events. Heavy rainfall is expected to become more intense in many regions, along with more frequent flooding
- droughts which are expected to become more frequent in eastern areas of the country
- the likelihood of stronger westerly winds and more severe wind events
- increasing temperatures over the whole country. Average temperatures may increase by 1°C by the 2030s and 2 to 3°C by the 2080s. New Zealand's temperature has already increased by 0.7°C over the past 100 years
- rising sea levels (30 to 50cm expected by 2100) and more severe storms, which may cause greater coastal erosion, inundation and saltwater intrusion into freshwater aquifers. Sea levels around New Zealand have already shown a 14 to 17cm rise over the past 100 years.

Further information on the expected impacts of climate change is available from www.climatechange.govt.nz

HOW WILL THESE IMPACTS AFFECT US?

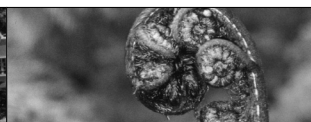
Changes to our climate will have a negative impact but there will also be advantages. For example:

- Warmer winters may reduce electricity demand during winter but more electricity may be needed for air conditioning during summer when water levels in hydro lakes are low and water supplies are most needed.
- We may enjoy the benefits of warmer winters but hotter summers may increase the risk of heat stress, particularly in northern, inland and urban areas. Sub-tropical diseases may also become a problem if carrier insects – such as mosquitoes carrying the Ross River virus – become established.
- Current land-use practices in rural drought prone areas may need to be revised to ensure they are more sustainable and economically viable. There may be the opportunity for the establishment of new crops in areas which currently have unsuitable climates for such crops.
- Erosion caused by more frequent and intense rainfall and flood events may increase road maintenance costs in some areas. Less snowfall in the lower lying alpine areas of the country could save road maintenance costs in those locations.

WHY ADAPT NOW?

Adapting to climate change means preparing our communities, industries and infrastructure for the effects of these changes. Acting now will help ensure our economy remains viable and that we are less vulnerable to the costs and adverse impacts of a changing climate.

Our economy is based on primary industries such as agriculture and forestry which depend on international trade and a stable climate. More frequent and severe weather events, such as floods, storms and drought, could affect our global competitiveness and ability to trade.



Preparing for climate change now is more effective and less costly than reacting to events when, or even after, they occur. There will also be opportunities arising from climate change such as developing world class technology to help reduce our emissions.

While we cannot be certain about the timing and exact scale of climate change impacts, we know that many of the costs associated with these impacts can be avoided or reduced with proper planning. For example, infrastructure networks such as roads, sewerage, electricity transmission, water reticulation, and telecommunications have useful lives measured in decades and should be routinely replaced or upgraded.

WHAT IS THE GOVERNMENT DOING?

The Government supports and encourages industries and communities in vulnerable sectors and regions to engage in early planning. It is building partnerships with local government, professional bodies, the insurance industry and the agriculture sector to ensure we work together to adapt to climate change. The immediate focus will be on water and coastal issues, infrastructure investment and maintenance, primary industry, biosecurity and biodiversity.

Action now to address climate change will support long term future prosperity and is less costly than dealing with damage from adverse climate impacts. Planning for the impacts of climate change can also motivate action that is cheaper to do now rather than later (eg, modifying the design of long-lived structures such as bridges) and encourage investigation of potential opportunities such as growth of different crops commercially and development of new ways to produce renewable energy.

WHAT CAN WE DO TO ADAPT TO CLIMATE CHANGE?

Our response to climate change is two-fold: we must reduce our greenhouse gas emissions and we must adapt to the inevitable impacts of climate change we are already committed to because of the emissions we have already produced.

WHAT CAN YOU DO?

Societies already modify their actions to suit the climate: flood defenses, for instance, are designed to cope with a given flood risk; buildings are constructed to cope with the expected higher temperatures and storms. The question facing us now is, given that we expect the climate to change, how and when should we prepare?

Think about how the future climate will be in your region. Plan for and minimise any risks relevant to you and your family. For example, if you are buying or building a house, think about how climate change may affect your home over the next 50 years. Is flooding an issue now? How is it expected to change in the future? Is the site stable? Is erosion a concern?

You can help New Zealand adapt to climate change by living sustainably. This means buying appliances that use less electricity, for instance, insulating your house and running a fuel efficient car (see www.climatechange.govt.nz/take-action/index.html for further information).

Farmers may need to modify farming practices to reduce the potential impacts arising from climate change. For example, they could change land-use, introduce flexible stock management policies, and provide catchment protection to strengthen the resilience of their farms. More on this is available at: www.earthlimited.org

WHAT CAN YOUR COMMUNITY DO?

In many parts of the country communities are already making a difference through coastal restoration and care projects. For example, Coast Care Bay of Plenty volunteers have planted nearly 300,000 native dune plants on local beaches to restore and stabilise the dunes from the impact of storms and flooding.

Other positive initiatives include stormwater upgrade projects by Kapiti Coast District and North Shore City Councils, and coastal inundation research by Rodney District and Hawke's Bay Regional Councils to assess the potential effect of storm surge and rising sea levels on low-lying properties.

Under the Resource Management Act, councils are required to consider the effects of climate change. A number of local authorities are improving stormwater management, flood controls and coastal protection measures. Steps taken now to improve our resilience in the face of current climate variability and extremes will also help us to be more resilient in the face of future climate change.