

# Adapting to Climate Change in Central Otago

The 2007 report by the United Nation's Intergovernmental Panel on Climate Change (IPCC) presents a scenario in which warming in the South Island in general and Central Otago in particular is likely to remain smaller than the global mean. Precipitation is likely to increase in the west of the South Island. Mean wind speed across the South Island, particularly in winter, is likely to increase. Marked decreases in average snow precipitation are likely. By later this century there may be significant increases in the frequency of drought. Increased windiness in winter is likely.

## What could happen

The IPCC report assumes that the climate changes in a smooth ('linear') fashion. A major concern is that the climate system contains 'tipping points', boundaries beyond which change is sudden and dramatic. Such events have happened with the earth's climate in the past, the last one being about 12,000 years ago. The consequences for our way of life of such a change could be traumatic.

## Impact on households

Over the next decade or so costs of a wide range of items will increase because of the Emissions Trading Scheme (ETS). The carbon emissions inherent in the goods we export may make some markets difficult to deal with. What will be the affect on our ETS if international climate talks fail?

## Impact on horticulture

With reduced winter chilling some crops may not remain viable, but there are alternatives that would make use of the longer growing season. Decreasing biodiversity is likely to be exacerbated by climate change. New pests and diseases may become established.

## The need for new technologies

As the major economic powers adopt low-carbon technologies such as electric cars these technologies will enter the mainstream here. However the time taken for the uptake of new technology means that there will be a significant time lag. For instance the average age of cars in New Zealand is 12 years. The widespread use of electric cars would require further power stations to be built. Although economists say that such measures will have a minor impact on GDP this masks the true nature of the changes required.

## The weather

In the longer term an increase in extreme weather events, especially heavy rain and droughts, will affect lifestyles and insurance premiums. Although forestation will mitigate the effects of severe weather in some parts of New Zealand this seems to be of limited relevance in Central Otago. Reduced snow falls may affect irrigation (snow acts as a storage mechanism until the water is required in summer).

## Population

With sea levels rising parts of New Zealand's coastal towns will need to be evacuated. Resultant resettlement in Central Otago may stress the district's infrastructure. If the worst climate scenarios are realised then New Zealand will come under international pressure to grow food for countries that are suffering desertification and to settle 'climate refugees'. Central Otago could see a very rapid expansion in population. The world's population is expected to increase by between 30% and 40% before stabilising at around 9 billion. Is this number sustainable in the long term? Some estimates put the earth's carrying capacity at no more than one billion.

## Intergenerational equity

Our generation of New Zealanders has benefited from easy access to hydrocarbons, especially petroleum. It seems likely that future generations will pay dearly for what they may come to regard as our excesses. This raises issues of intergenerational equity.