



## Fact Sheet 20

# Climate change and rural Australia

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**The people most exposed to the economic and health effects of climate change are the world's poor. In Australia, those who live in rural and remote areas are more exposed than those in major cities.**

A recent Commission<sup>1</sup> between The Lancet and University College London Institute for Global Health concluded that climate change "is the biggest global health threat of the 21st century".

The disciplined evaluation of data and interpretation of the findings, followed by peer review and vigorous critical debate, are at the core of the scientific method. Based on such rigorous method, it can now be said that the overwhelming majority of the world's independent scientific institutions are agreed about the reality of human-induced climate change. For example, the CSIRO<sup>2</sup>, the Royal Society<sup>3</sup>, the (US) National Academy of Sciences<sup>4</sup>, the Scientific Academies of the G8+5 nations, the Australian Academy of Science<sup>5</sup>, the Bureau of Meteorology<sup>6</sup> and the (US) National Oceanic and Atmospheric Administration<sup>7</sup> have all issued strong statements on the reality of climate change.

Climate change presents both dangers and opportunities for people who live in rural and remote parts of Australia.

## How will climate change affect rural and remote Australia?

Although the general effects of ongoing climate change are relatively clear, the same cannot be said about its exact and localised effects in the future.

The following physical effects appear likely:

- rainfall over southern Australia will decrease while rainfall over northern Australia will tend to increase;
- both drought and flood will become more frequent;
- bushfires will be more frequent and severe;
- river flows and water availability will decline in southern Australia;
- temperatures will increase by between 2 and 6 degrees in the next 100 years;
- evaporation from soil and dams will increase with temperature; and
- sea levels will rise by about a metre (possibly several metres) in the next 100 years.

1 [http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(09\)60922-3/fulltext](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(09)60922-3/fulltext)

2 <http://www.csiro.au/science/Climate-Change.html>

3 <http://royalsociety.org/landing.asp?id=1278>

4 <http://www.nationalacademies.org/includes/G8+5energy-climate09.pdf>

5 <http://www.science.org.au/policy/climatechange-g8+5.htm>

6 <http://www.bom.gov.au/climate/change/>

7 <http://www.ncdc.noaa.gov/oa/climate/globalwarming.html>

## How will climate change affect the health and welfare of people in rural and remote Australia?

The seven million people living in rural and remote Australia are on the frontline of climate change in Australia. Their livelihoods are more exposed to the potential damage from climate change than those of their city cousins.



The final report of the Garnaut Review<sup>8</sup> suggests that a wide range of agricultural industries are vulnerable or highly vulnerable, including those related to irrigation, grain and livestock. Australian fisheries are also likely to be affected<sup>9</sup>, as is tourism, for example as a result of the effects on the Great Barrier Reef and Australia's snowfields. Forestry may benefit from increased CO<sub>2</sub> concentrations, but will also suffer from reduced rainfall and increased risk from bushfire.

Infrastructure damage resulting from flood, bushfire and rising sea levels, and global tensions (eg related to environmental refugees) may require the diversion of funds from other areas such as health, education and welfare.

## The negatives

Climate change is likely to negatively affect people in rural and remote Australia through:

- effects on primary production and tourism (and consequently on farm and non-farm incomes and mental health);
- direct health effects such as greater exposure to ambient heat (eg heat stroke and related death), vector borne

8 <http://www.garnautreview.org.au/index.htm>

9 <http://www.climatechange.gov.au/impacts/publications/pubs/fisheries.pdf>

diseases (eg Ross River virus and Dengue), food and water borne illnesses (eg gastroenteritis), bushfire (injury and death due to burns and smoke inhalation), and mental illness;

- reduced opportunities for lifestyle activities in general, especially water-based forms of recreation and physical activity (eg fishing, water skiing, gardening);
- lower access to health services as a result of reduced economic viability of towns in rural and remote areas;
- reduced access to services as a result of the need to divert funds to deal with the effects of climate change; and
- increased food prices and reduced access to healthy food choices as a result of reduced agricultural production and increased global demand.

Some people (eg the poor) and some populations (eg some Indigenous populations and some populations reliant on irrigation) are more exposed than others.

## The opportunities

Climate change also presents a range of opportunities for rural and remote Australia.

- Rainfall in northern Australia will increase. This may present an opportunity for enhanced agriculture and food production. However, development of northern agriculture may first need to overcome a number of substantial obstacles. Alternative uses for that water, for example, its diversion southwards, are likely to be problematic.
- Atmospheric carbon will need to be sequestered in vegetation and in soil, opening the possibility of additional substantial income streams for rural, remote and Indigenous communities.
- Renewable energy production for the domestic and international markets can provide substantial new income streams for rural communities, particularly if supported by investment incentives as is the case in Denmark.
- Additionally, the 'greening' of rural and remote urban spaces and infrastructure offers major potential health benefits, specifically reducing obesity, heart and lung disease, diabetes and stress.<sup>10</sup>

This range of opportunities has the potential not only to offset some of the negatives of climate change for people in Australia's front line, but also to enhance rural health and welfare by strengthening rural and remote economies, while also contributing to a global response on behalf of the planet's most exposed people: the poor.

## What can rural Australians do about climate change?

Every small personal response to climate change is useful, but it is in concert that people can respond most effectively. An effective response needs to start now. It needs to be long-term and it needs to be made by national and international entities as well as by individuals and their families.

Broadly, the response to man-made climate change can take two forms – mitigation (reducing our greenhouse gas emissions and sequestering carbon from the atmosphere) and adaptation (protecting ourselves from the effects of climate change). Whole populations can demand changes to national and international policies affecting mitigation and adaptation through policies and programs on relative prices of energy, tax systems, patterns of consumption and production, infrastructure development, trade, and international agreements.

Adaptation by Australian society is already occurring through actions such as the construction of desalination plants in some capital cities, augmenting bush fire preparedness, government buy-back of water allocations, town water restrictions, and government assistance for farmers and small rural businesses, for example the Climate Change Adjustment Program. At an individual level, people can prepare to protect themselves from the effects of climate change by such means as ensuring they have effective cooling systems in their homes, insect screens are present and intact, and by changing gardening practices and household appliances so as to consume less water and energy.

Mitigation has already begun with the trend towards more fuel-efficient cars, incentives to install solar hot water systems and ceiling insulation, expansion of the renewable energy industry, and an attempt by government to impose a price on carbon 'pollution'. Much more needs to be done, but it is clear that change needs to be managed carefully so as to avoid political backlash: change has to be palatable to the electorate whose individuals still need to get to work, eat, house themselves, retain a job and have 'an enjoyable life'.

Reducing greenhouse gas emissions will rely on society's decisions more than on those of individuals, in a similar way to society's approach to reducing the prevalence of tobacco smoking. Efforts to reduce the prevalence of smoking in society rely on accurate information about risk and health effects (and a reduction in the prevalence of mis-information), legislation to assist people to quit (prohibiting smoking in government buildings, restrictions on advertising), government incentives (excise on tobacco), and technology (nicotine patches) – not just on the will-power of individual smokers.

As individuals, we can contribute to a response to climate change by becoming conversant with the science, lobbying politicians and voting to effect a change in climate change policies. We can take advantage of government incentives to install solar hot water systems and ceiling insulation. We can alter our mode of transport: make fuel efficiency one of the priorities when we buy a new car, or consider using public transport or a bicycle more often. When possible, we can choose to buy electricity generated from renewable energy.

Individuals and families are more likely to make such discretionary decisions once exposed to 'climate change literacy'. Regrettably low income and poor education mitigate against such literacy. Which brings us back to equity and equality in Australian society: we should all be concerned for those with fewer choices and of lower means. Work on the health effects of climate change should accommodate the notion of social justice, not only within Australia but globally.

10 [http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(09\)60922-3/fulltext](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(09)60922-3/fulltext)