

Addressing the public health impacts of Climate Change

September 2005

Presidents' Statement

Climate change caused by the release of greenhouse pollution will affect human health on a scale not previously encountered by human society. Greenhouse pollution caused by the world's use of fossil fuels is already changing our climate. Per person, Australians are the greatest greenhouse polluters in the industrialised world giving us a special responsibility to examine the health and environmental consequences of our actions.

Thousands of Australians may prematurely die every year due to air pollution. The World Health Organisation estimates that internationally tens of thousands of people are dying every year due to the modest climate change we have witnessed over the last two decades. Recent devastating impacts from Hurricane Katrina in the United States of America, remind us that even

wealthy countries remain vulnerable to climate disasters.

Coordinated action from all levels of government, business and the community to reduce greenhouse gas and air pollution would have major health benefits. Such action would also minimise the rate of future climate change and assist communities in effectively responding to the climate change that is now unavoidable. Collectively these efforts could save thousands of lives in Australia and reduce the death and suffering of millions of people across the globe, particularly our near neighbours.

By factoring in the health and environmental costs of greenhouse pollution, we can encourage business to reduce emissions and invest in clean energy. By harnessing the power of the wind, the sun and the earth we can

meet our future energy needs by using renewable energy sources such as wind power, solar electricity and geothermal stations. By mandating the use of world's best practice in energy-saving technology we can reduce energy consumption in our homes, offices and industries by up to 70%. By active planning and policy making we can help protect our communities from heat waves and outbreaks of infectious diseases such as dengue.

Our health ultimately depends on having a healthy environment to sustain us. Climate change is arguably one of the largest environmental and health equity challenges of our time. Failure to reduce greenhouse pollution today will come at an enormous environmental and health cost. Fundamental reform of our energy system is required to create a clean energy future and we need to start today.



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Climate Change is a Reality

The world's leading scientists have concluded that climate change caused by human activities has begun and will continue in the future.¹ These human activities predominantly involve the burning of oil, coal and gas and result in greenhouse gas emissions (primarily carbon dioxide) and climate change. Observed climate change includes increasing global temperatures, changing rainfall patterns and rising sea levels.

Projected increases in greenhouse emissions will lead to climate changes far greater than any natural change since the advent of agriculture 10,000 years ago.² The science academies of the G8 nations recently stated, "The scientific understanding of climate change is now sufficiently clear to justify nations taking prompt action."³

Climatic conditions have and will continue to have direct measurable consequences on human health. The Australian Medical Association and the Australian Conservation Foundation have commissioned Australia's leading climate change and human health researchers at the National Centre for Epidemiology and Population Health, ANU, to examine the effects that dramatic and rapid reductions in greenhouse gas emissions could have on health impacts from climate change in Australia.⁴ This research adds a valuable local dimension to many overseas studies. This detailed modelling examines potential effects of climate change on deaths due to high temperatures and the transmission of dengue in Australia.

Climate Change is already a health issue

Climatic conditions have wide-ranging effects on human health. Heat stroke and the spread of diseases like dengue and Ross River fever are all closely linked to climatic conditions such as temperature, humidity and rainfall. For example, around 1,100 people are estimated to die each year due to high temperatures in Australian capital cities.⁵ This compares to the 1,600 people killed in road crashes in 2004 or the 900-2,000 early deaths caused by air pollution in the year 2000.

On a global level, the modest climate change experienced between the mid '70s and the year 2000 is estimated to have caused 150,000 deaths per year.⁶ Future climate change, as projected by climatologists, will have an impact on human health on a scale not previously encountered by human society.⁷

The Australian Government's most recent report on climate change envisages average temperature increases of between 0.4° and 2°C by 2030 and between 1° and 6°C by 2070.⁸ Rainfall patterns will continue to

change with possible reductions in average rainfall in southern and eastern Australia and increases across the tropical north. More heatwaves and severe storms and floods, stronger cyclonic winds, increased bushfire risk and prolonged drought are expected. Projected health impacts include:⁹

- If we don't adapt, temperature-related deaths could more than double by 2020 to 2,500 deaths per year.
- Flood-related deaths and injuries may increase by 240% in some regions.
- Warmer temperatures and more variable rainfall will increase the intensity and frequency of food-borne and water-borne disease.

Some Australians – for example, remote Aboriginal communities, people on low incomes and the elderly – will be ill-equipped to respond to these changes.

The Research: Climate Change Health Impacts in Australia

The AMA/ACF-commissioned study examines three possible future scenarios relating to health impacts in Australia from climate change and policy action. The impact of climate change in Australia will depend on the rate and extent of warming, as well as the capacity of our society to adapt. The scenarios are modelled for the year 2100 and focus specifically on the impact of heat and dengue disease under three different climate change and policy conditions:

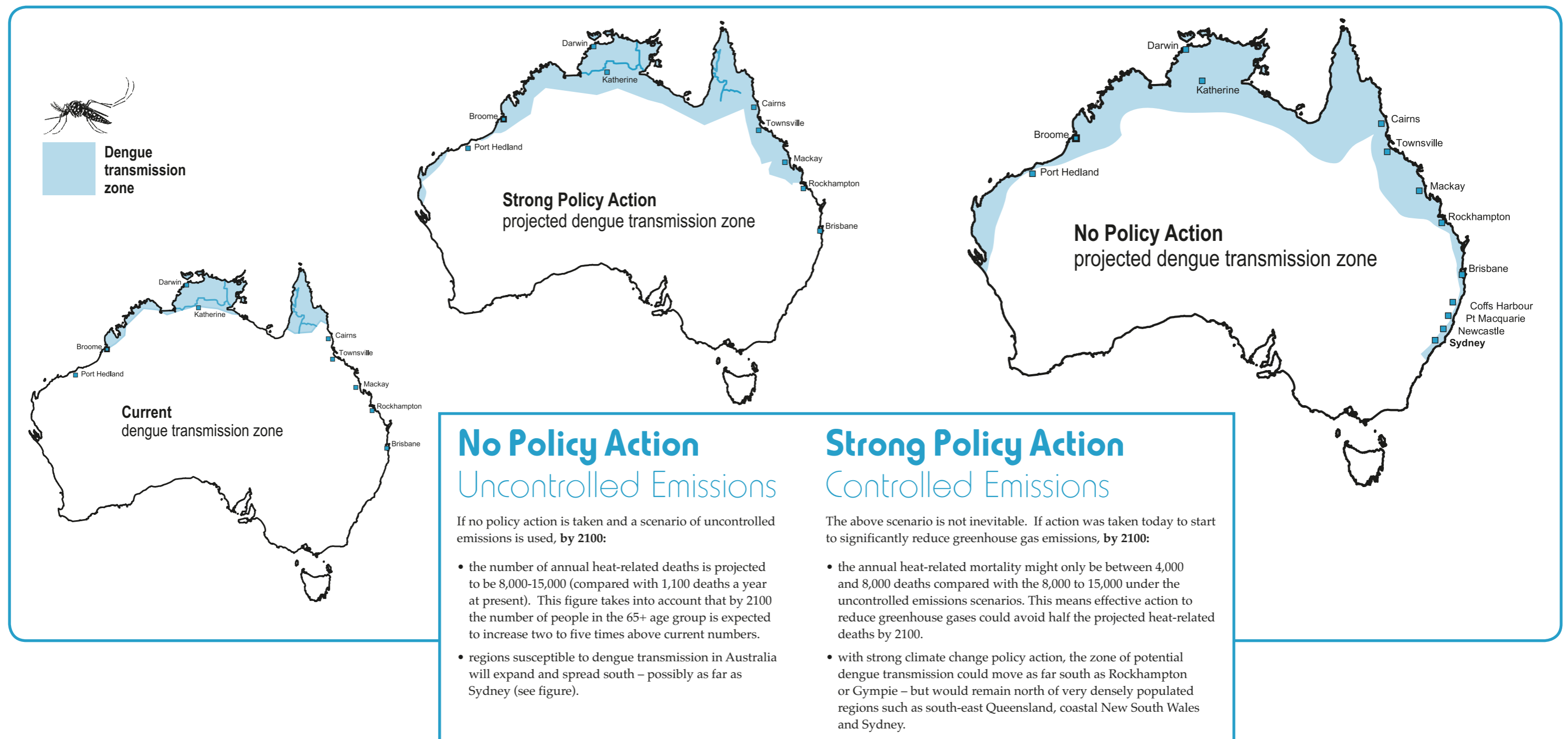
- Strong policy action – assumes substantial efforts across governments, business and communities are made now to reduce greenhouse gas emissions.

- No policy action – two plausible uncontrolled emissions scenarios.

However there are a number of other climate change factors that these scenarios do not include but which will affect the health of Australians. For example, it does not address the direct loss of life from increases in the number of extreme events such as flooding, drought and cyclones or the indirect or 'secondary' health impacts from events such as drought in Australia. This encompasses the flow-on effects from drought such as food- and water-borne diseases and increased incidence of depression and suicide as seen in rural and remote Australia during the present drought.

The research also does not include the health impacts from what could be termed 'tertiary' health issues from catastrophic global events such as the climate change induced destruction of the Amazon rainforest, the disintegration of the Earth's great Ice Sheets in Greenland and west Antarctica, and rapid changes in the El Niño and monsoon systems.^{10, 11, 12, 13} In 2003, the German Advisory Council on Global Change characterised these events as "a devastating risk to humankind."¹⁴ In addition, the work focuses on mortality rather than morbidity (eg disease and disability). The inclusion of morbidity would add significant additional human and economic costs to the scenarios.

Whilst it is not possible to model all scenarios, this remains an important report as it quantifies the size of the health impact of heat and dengue disease that was previously only suspected. In addition the Federal Government released a report in March 2005 on *Climate Change Risk and Vulnerability: Promoting an efficient adaptation response in Australia*. The AMA/ACF-commissioned research quantifies aspects of this work by providing comprehensive detail to two of the six health impact areas identified in the government's report.



Mitigating the effects of Climate Change we can't avoid

Experts agree that human activity has already done damage through increased concentrations of greenhouse gases in the atmosphere and therefore there will be some health effects due to climate change that we cannot now avoid. Mitigating efforts against these health effects includes governments working with health professions and the community to identify and support high risk groups, improve awareness and disease monitoring and surveillance, and extend public health services to prevent climate-related illness. It could also include enhancing national capacity to be able to rapidly identify a disease outbreak or health emergency.

Specific steps could include:

IMPACT	MITIGATION
Heat	<ul style="list-style-type: none">• Infrastructure adaptation such as passive solar building design and use of ventilation and insulation, heat-reducing urban planning.• Increased intake of fluids.• Changed work hours.
Dengue	<ul style="list-style-type: none">• The extent to which the public health burden of dengue remains relatively low in future will depend on continuing the adequate financing of public health infrastructure in currently and newly affected populations.• Good mosquito control programs will be required to keep disease outbreaks at a lower level.

Immediate health benefits of reducing greenhouse gases

Reducing greenhouse gas emissions would result in other immediate health benefits as the burning of fossil fuels that produces greenhouse gases also produces health damaging particles and other air pollutants. Air pollution from motor vehicles caused an estimated 900-2,000 early deaths in Australia in the year 2000, entailing direct costs of between \$1.1 and \$2.6 billion.¹⁵ Research indicates that a coincidental reduction in air pollution following a 50% reduction in greenhouse gas emissions from road transport could avert around 300-500 premature deaths per year in the combined Sydney and Melbourne regions.¹⁶

Actions to reduce greenhouse gases that reduce personal car use would also have the effect of encouraging more walking and cycling which would have beneficial effects on exercise rates and obesity. These effects in turn would impact on the 'lifestyle' diseases (such as diabetes and cardiovascular diseases) that are amongst the greatest contributors to mortality and morbidity in Australia.

Impact beyond our shores

The health impact of climate change in neighbouring nations is likely to be much more severe than in Australia. This relates to Australia's pre-existing higher health status, economic wealth, and public health infrastructure, and its ability to divert resources from elsewhere in the economy towards climate change adaptation. Many neighbouring nations – not only in the Pacific, but in many parts of Asia – are more susceptible than Australia to the adverse impacts of climate change. Projected climate change, combined with population growth and other environmental change, is expected to place serious stresses on many countries.

A substantial decline in agricultural productivity and other climate change impacts throughout the Asia-Pacific could lead to the large-scale population displacement of hundreds of millions of people.¹⁷ Environmental refugees may turn out to be the biggest global health challenge presented by climate change.¹⁸

Action is needed today for a healthy future

This report provides valuable information for governments and policy makers. It quantifies several health impacts of climate change to the Australian experience. However more research is needed on the other areas of health impact (e.g. food- and water-borne diseases, exposure to other extreme climate events and respiratory diseases). In addition, further work on the economic and other costs of these now quantified health impacts will assist in a more informed public debate about our response to climate change.

In terms of climate change and human health the precautionary principle acknowledges that when an activity raises a threat of serious or irreversible harm to the environment or human health, precautionary measures should be taken even if

some cause and effect relationships are not fully established scientifically. However, we already know enough about the risks of climate change and how to reduce the impacts on human health for governments, business and the community to take action without delay.

Climate change is a global problem that requires a global solution. Greenhouse gas emissions have the same impact on the atmosphere regardless of their origin. Australia, as a major emitter, has an obligation to significantly reduce its greenhouse gas emissions. Decisive and collaborative action from all levels of government, business and the community can reduce greenhouse pollution. This can be achieved by actions including:

ACTIONS NEEDED

GOVERNMENTS

- A National Greenhouse Policy that immediately and dramatically cuts our greenhouse emissions. To avoid dangerous levels of climate change Australia needs to reduce greenhouse emissions by around 60-90% by 2050.¹⁹
- Regulatory measures to ensure 10% of Australia's electricity comes from renewable energy sources by the year 2010 (and further measures to ensure this figure grows).
- Taking a leadership role internationally to ensure a global approach that aims to avert an increase in global temperatures of 2°C above pre-industrial levels.
- Make building resilience to climate change in developing countries an Australian aid priority.

BUSINESS

- When making investment decisions, factor in the environmental and health costs of fuels to represent a true cost.
- Invest in the development of renewable energy sources.
- Improve energy efficiency.

COMMUNITIES

- Give preference to using renewable sources of energy.
- Take responsibility to conserve energy use.

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The research report

**Climate Change Health Impacts in Australia:
Effects of dramatic CO₂ emission reductions**

is available at www.acfonline.org.au and www.ama.com.au