



Future Justice – Issue Paper

WARMING TO A GLOBAL CHALLENGE

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This article draws on part of the authors' new book, *Climate Change and Australia: Warming to the Global Challenge* (The Federation Press, Sydney, 2012)

Climate change is one of the most hotly debated issues of this century. Politicians have risen and fallen on its wake, elections have been fought around it, and international leaders have come under unprecedented scrutiny by civil society for their action – or inaction – in addressing it. As Australia is battered by hotter summers, more frequent and severe floods, devastating bushfires, water shortages in capital cities, and coastal erosion on its beaches, the question 'is climate change the cause?' is being asked more and more frequently.

The media is full of worrying projections. We are told that planned global emissions cuts will fall far short of the level necessary to cap temperature rises at 2°C (the so-called 'safe' level). We hear that the acidity of the world's oceans is increasing at the fastest rate in the last 55 million years, threatening disaster for marine life and food supplies around the world. Crop production and clean water may rapidly diminish and animal and plant species become extinct. Some reports boldly predict that up to a billion people will be homeless by 2050.

On the one hand, stories like these can encourage people to lobby for reductions in greenhouse gas emissions and do all they can to reduce their own carbon footprint. On the other hand, they can be so overwhelming that they create a paralysing fear, which can lead to a sense of fatalism and inaction. Climate change 'sceptics' create further confusion by suggesting that climate change is a hoax or conspiracy and that there is nothing to worry about. Occasional inaccuracies in some scientific studies have fuelled climate change 'denial', as though a handful of mistakes negates the thousands of studies which confirm the reality of climate change. Unfortunately, sceptics have succeeded in seriously misleading the public. According to a large public opinion poll of 5,000 Australians in 2011, while 83 per cent of people agreed that climate change was happening, only about 50 per cent believed it was caused by humans.¹

There is a stark gap between public opinion and scientific reality. The Intergovernmental Panel on Climate Change (IPCC), the largest group of the world's leading scientists ever assembled – thousands of them – agree that climate change is happening and that

it is attributable to greenhouse gas emissions caused by humans. Independent studies have also estimated that 97 per cent of scientific experts agree that humans are responsible for global warming,² corroborating the consensus in the peer-reviewed literature (that is, scholarly research papers which have been accepted by publication after being reviewed by experts).³

Anyone who doubts that profound consensus would need to have a great deal of confidence in their own scientific ability, or be recklessly willing to gamble with the future of coming generations. Even if there is a remote chance that the scientific consensus is wrong, the likely serious impacts of climate change call for a 'precautionary' approach to contain the risks – rather than polluting as usual and hoping for the best.

The gap between public opinion and scientific reality is disturbing, particularly in a developed country like Australia which boasts high levels of literacy and education, a vibrant media, and easy access to information via the internet. It is difficult for governments to make good public policy to address a serious problem like climate change if a large section of voters has been misinformed – whether by climate sceptics, lobbyists, some academics, media propagandists, polluting companies, or political leaders who peddle misinformation for votes.

While there are indeed some uncertainties in some aspects of the science, we pay no serious attention to 'sceptics' who deny that global warming is real, or that it is caused by humans. Given the near-universal scientific consensus to the contrary, those propositions are like believing that the world is flat, not round; or that gravity does not exist; or that the Sun orbits the Earth, not vice versa. It is a fact that average global temperature has increased by 0.74 per cent over the last century. Historical greenhouse gas emissions will involve further warming of 0.6 per cent by 2100 even if emissions remain the same as in 2000.⁴ If emissions continue to increase however, global temperatures could rise by up to 4°C by 2100 – with severe effects which would change life as we know it. There is less certainty about *how fast the climate will change* (because it is difficult to predict the amount of future emissions and the scale of human efforts to mitigate them), *the impact of it on the planet's ecosystems and human societies* (taking into account natural resilience and human adaptation), and *what can be done to respond most effectively and efficiently*.

In 2009, in the lead-up to the intense global climate change negotiations at Copenhagen, the world watched to see whether its leaders could put their own political, economic and cultural differences aside to act in the interests of the planet, and the well-being of future generations, by curbing global greenhouse gas emissions. International negotiations are, by their nature, forums for compromise, yet the achievements at Copenhagen were modest indeed – and a source of great disappointment for many. In Australia, too, attempts to introduce a national emissions trading scheme between 2007 and 2010 were unsuccessful, despite widespread popular support for action against climate change. The Gillard government's announcement of a 'carbon price' in 2011 was met with fierce controversy and sorely tested the government's resolve, before legislation was finally passed in late 2011.

As political momentum for action stalls internationally and in many countries, we have written a book called *Climate Change and Australia: Warming to the Global Challenge* (The Federation Press, Sydney, 2012). It aims to provide a clear, readable account of what climate change means for the future of Australia, its region, and the world. Many books and articles about climate change take polarized positions, which can lead to uncertainty about what it is and what it means. Instead, we take a sober look at the science of climate change to explain how climate change is already affecting our planet and continent, what its likely future impacts are, and what policy options are available to Australia and the world to respond to it. We try to give a balanced and rational account of the diverse ways in which climate change impacts on society, drawing on our collective expertise in the disciplines of science, economics, geography and law.

In the first chapter, we examine the science of climate change. The chapter explains the processes of global warming, including the problem of human carbon or greenhouse gas emissions. It explores which aspects of climate science that most scientists agree upon, and acknowledges areas where there is real (not fabricated) disagreement. It demonstrates that global warming is unequivocally real, serious, and rapidly getting worse. It then explains the key impacts of climate change on the planet, including the atmosphere, oceans, polar regions, plants, animals and humans. It analyses the assessments of the IPCC as well as more recent scientific reports which indicate that climate change impacts are happening even faster than predicted.⁵

The second chapter explores the physical and economic impacts of climate change on Australia and its region. In particular, it examines the special impacts of climate change on the diverse and vulnerable environments and ecology of Australia, as well as its likely effects on agriculture, industry, water resources and the livelihoods and prosperity of Australians. It also seeks to understand the possible economic consequences of such effects, and the extent to which they are offset by any positive impacts of climate change.

The third chapter explains how the international community has struggled to construct an adequate international response to climate change. It looks at the key international treaties, such as the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol, analysing their success and what is needed in a post-Kyoto world. In particular, it evaluates the outcomes of the Copenhagen (2009), Cancún (2010) and Durban (2011) negotiations, and charts possible future directions for global cooperation.

The next chapter moves from the global to the local by exploring Australia's response to climate change. It examines Australia's mixed record in international climate negotiations and evaluates various domestic policy choices of successive Australian governments. It shows that Australia has many options open to it for reducing its own carbon emissions, but has been relatively slow in taking them up. We consider why Australia should reduce its emissions in the light of global efforts, the nature of the Australian economy, and Australia's responsibility for a high level of per capita emissions and a relatively 'dirty' economy. We look at the costs and benefits of 'emissions trading' (compared to other options, such as a carbon tax, or direct action), and explores the hard issues about its design. It also shows how many of the criticisms of carbon pricing have been misleading or exaggerated.

The final two chapters of the book examine particularly complex challenges presented by climate change. The first of these confronts alarmist predictions that hundreds of millions of people – many in the Asia-Pacific region – may be displaced by the effects of climate change by 2050. The chapter queries the extent to which empirical evidence supports such claims, and whether climate change can be isolated as a cause of such movement. It looks at whether existing international refugee and human rights law would protect these so-called ‘climate refugees’, and where the legal gaps exist. In particular, it considers the ways that planned migration may help to avert crises, and assist people to re-establish their lives with dignity. It looks at the role Australia might play in assisting people in its region, such as Pacific islanders, whose homes may be rendered uninhabitable as a result of interlinked factors including drought, water shortages, king tides and eventual sea-level rise.

The final chapter considers predictions that climate change will lead to conflict, violence, and even ‘climate wars’. There we argue that although no war is likely to occur on account of climate change alone, its cumulative effects may aggravate existing causes of violence, worsening existing political, social or economic vulnerabilities and undermining human security. Already, declines in global food production, partly because of climate change harming agriculture, have triggered food riots and social conflict in developing countries and destabilized governments. Water scarcity, public health problems, human displacement, and resource competition over land and maritime and polar areas, will all present special challenges. The chapter examines the extent of these risks and considers how the international community – including Australia – can best respond to avert conflict or tensions stemming from the impacts of climate change.

The global economy of the future will look nothing like the carbon-intensive economy of today on which Australia so heavily relies. There are certainly adjustment costs in moving from a ‘dirty’, carbon-polluting economy to a ‘cleaner’, more modern one, and there are reasonable concerns about Australia sharing a fair burden of reducing global emissions. Some clearly have vested interests in maintaining the status quo and preserving their freedom to pollute – a bad habit from an era where those who caused environmental damage were never asked to pay for it. Political leaders face acute difficulties in planning for a problem as long-term as climate change, when electoral cycles are so short, voters are so cynical, and opposition parties are so rapacious.

But there are great rewards available to countries that are bold enough to make the transition. Countries which lag behind will be less able to reap the benefits of new employment, exports, and investment in new technologies and industries. Even if Australia did more than other countries to reduce its emissions, that would not necessarily be a bad thing. In addition to showing moral courage and leadership, it could also aggressively position Australia’s economy for future success. Dealing with climate change is not just a narrow environmental problem, but challenges the way we think about our economy, security, and way of life. Responding to it should not be feared, but rather embraced as an exciting and productive opportunity for renewed global cooperation, and good Australian policy to secure our future.

Notes

¹ CSIRO, *Baseline Survey of Australian Attitudes to Climate Change: Preliminary Report*, January 2011.

² Doran, PT and Kendall Zimmerman, M, 2009, "Examining the Scientific Consensus on Climate Change" 90 *Eos, Transactions, American Geophysical Union* 22; Anderegg, WRL, Prall, JW, Harold, J and Schneider, SH, 2010, "Expert Credibility in Climate Change" 107 *Proceedings of the National Academy of Sciences* 12107.

³ Oreskes, N, 2004, "Beyond the Ivory Tower: The Scientific Consensus on Climate Change" 306 *Science* 1686.

⁴ UN Secretary General, 'Climate Change and Its Possible Security Implications', Report to the UN General Assembly, 11 September 2009, UN Doc A/64/350, para. 23.

⁵ See, eg, Steffen, W, *Climate Change 2009: Faster Change and More Serious Risks* (Australian Government, Department of Climate Change, 2009).

Further details about *Climate Change and Australia: Warming to the Global Challenge* available at:
<http://www.federationpress.com.au/bookstore/book.asp?isbn=9781862878723>