

Heat building as governments ignore dangers

Alan Dupont
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It is time for climate-change agnostics to put aside their scepticism and acknowledge reality. The Earth is heating up at a rate never before experienced in human history and we are primarily responsible. To suggest otherwise denies what is scientifically irrefutable. Our warming planet is not the result of a naturally occurring cycle.

Centuries of fossil fuel use and deforestation are altering our climate, posing daunting challenges of adaptation and mitigation for all life forms on the planet.

Unless arrested, climate change threatens to push our fragile and already stretched ecosystem past an environmental tipping point from which there will be no winners.

Climate scientists overwhelmingly accept that the world's glaciers and northern ice cap are rapidly melting and that rising seas will inundate many coastal and low-lying areas. If present rates of melt continue, the arctic ice cap will disappear entirely by 2060. Should Greenland's large ice mass also melt, which the latest data suggests is a distinct possibility, the world's oceans could rise by 4m to 6m this century, far higher than scientists were forecasting even a few years ago.

The really bad news is that this century there will be a doubling of carbon dioxide concentrations over pre-industrial levels regardless of what we do to contain or reduce greenhouse-gas emissions. Consequently, the Earth's surface will warm by more than 2C and there will be more severe weather events. Desiccating droughts and cyclones of Katrina-like force will intensify.

Ironically, while a great deal of the data is no longer disputed, most people do not have a realistic sense of the magnitude of likely future climate change because scientists have largely failed to communicate the significance of their findings in a way the public can understand.

Simply citing mean temperature and sea-level increases does not give a true sense of their import. A change of even one degree this century would be highly significant, although it doesn't seem much because we routinely experience much greater temperature variations in our lives.

It has to be remembered, however, that average global temperatures normally vary by no more than a few tenths of a degree from year to year and decade to decade. More than 2C takes us into uncharted territory. The Earth was only 5C cooler during the most recent ice age, when icebergs were common off the Portuguese coast and much of Tasmania was covered in snow and ice.

Figures for average sea-level rise also understate the problem. A rise of a half-metre seems relatively inconsequential when measured against the large waves commonly seen on any popular surf beach. However, in conjunction with large storm surges and mega-cyclones, rising seas will lead to widespread and serious flooding. Most of Australia's and Asia's important cities are situated on the coast, along with much of the most productive land.

The central problem is the rate at which temperatures are increasing rather than the absolute size of differential warming. Spread through several centuries or even a millennium, temperature rises of several degrees could probably be managed without political instability or significant threats to commerce, agriculture and infrastructure. Compressed within the space of a single century, however, global warming represents a unique challenge to human survival and the stability of nations requiring judgments about political and strategic risk as well as economic cost.

Unfortunately, the wider security implications of climate change have been largely ignored or at least seriously underestimated by governments, academe and the media.

Climate change will complicate and threaten Australia's security environment in several interconnected ways. Weather extremes and greater fluctuations in rainfall and temperatures have the capacity to refashion the region's productive landscape and exacerbate food, water and energy scarcities.

Climate-induced water scarcity clearly has adverse implications for food production. The region can ill afford a substantial drop in rainfall or a shift in distribution away from where it is most needed: the wheat fields of Australia and rice paddies of Southeast Asia and China. Energy dilemmas will be compounded by the need to reduce greenhouse-gas emissions, placing added pressure on an already tight energy market and heightening existing anxieties about energy security.

More extreme weather patterns will result in greater death and destruction from natural disasters, adding to the burden on poorer countries, causing destabilising population movements and stretching the resources and coping ability of even the most developed nations, as Hurricane Katrina attests. Extreme weather will trigger short-term disease spikes, while temperature increases will help spread infectious diseases such as malaria and Ross River fever.

When climate instability coincides with other transnational challenges to security, such as terrorism and pandemic diseases, or adds to pre-existing ethnic and social tensions, the security impact will be magnified. For a handful of small, low-lying Pacific nations, climate change is the ultimate security threat, since rising sea levels will eventually make their countries uninhabitable.

Australia is better equipped than most nations to meet the challenge of climate change because of our wealth, knowledge edge, low population densities and abundant natural resources. But this should not be a cause for complacency.

Most of our neighbours are not as well endowed. With few exceptions, they are still developing states with far less capacity to mitigate or adapt to climate change. As the pace of Australia's integration with the region accelerates, the detrimental effects of climate change in Asia and the micro states of the southwest Pacific will be of direct consequence to our security interests.

Strategic doctrines and billion-dollar defence budgets are frequently justified on the basis of far less observable evidence than we have about the climate future that awaits us. Yet little has been done to research, address or even conceptualise the potential security implications of climate change.

Prudence and sensible risk management suggest governments need to take this issue far more seriously. For a start, our strategic planners ought to include worse-case climate-change scenarios in their contingency planning, as they do for terrorism, pandemic diseases and conventional military challenges to national security.

Alan Dupont is senior fellow for international security at the Lowy Institute. This draws on a Lowy report entitled *Warming Up the Planet: Climate Change and Security*, out today.