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Committee Secretary  
Senate Foreign Affairs, Defence and Trade References Committee  
Parliament House  
Canberra ACT 2600  
By email: [fadt.sen@aph.gov.au](mailto:fadt.sen@aph.gov.au)

Dear Committee Secretary,

### **Implications of climate change for Australia's national security**

Thank you for the opportunity to make a submission to the Committee in this important inquiry.

I teach and research in international law at the Sydney Law School at the University of Sydney. I hold postgraduate qualifications in geography (from the University of Cambridge) and international law (from the University of Sydney).

A focus of my research is the international legal and policy framework for addressing climate change and its impacts and implications, including for global and national security.

### **Climate change and national security**

Climate change is the most serious threat to Australia's national security this century. The safety, security and well-being of Australians is directly affected by the physical changes resulting from global warming and associated economic, social, political and strategic impacts in Australia and our region.

Across much of Australia's mainland we can expect significantly higher temperatures, more frequent heat waves, more intense storms and floods, extended dry periods and drought, more intense bushfires, and rising sea levels, stronger storms, storm surges and flooding.<sup>1</sup>

As a technologically advanced, economically developed, and politically stable nation with strong legal institutions, Australia is reasonably well-placed to adapt to climate change and its impacts, at least for some decades. Australia has a relatively small population compared with the large Australian continent and



expansive maritime estate, and Australia's environment stretches across a range of climatic regions which will facilitate adaptation to address climate impacts, including food insecurity.

### **Australia is situated a climate vulnerable region**

However, when it comes to the regional and global security implications of climate change, no country is an island.

Climate change may set off a compounding set of regional and global crises which will have major impacts upon Australia.<sup>2</sup> While Australia shares no land, and few maritime, boundaries with other states, we are situated on the periphery of the densely populated and politically complex Asian region. Here, many states are assessed to be highly vulnerable to climate hazards.<sup>3</sup>

Australia's future is inevitably tied to the way these nations and Australia itself responds to the security challenges posed by climate change.

At least initially Australia's attention may need to be focused on the Pacific. Climate change threatens already struggling Pacific microstates.<sup>4</sup> Australia is likely to be drawn into situations similar to those encountered in the Solomon Islands in 2003, where the institutions of government crumbled and the country was on the verge of becoming a failed state.

However, the main game in terms of security challenges over the longer term will be played out in the more populous Asian continent.

As the *2016 Defence White Paper* noted:

Climate change will be a major challenge for countries in Australia's immediate region. Climate change will see higher temperatures, increased sea-level rise and will increase the frequency and intensity of extreme weather events. These effects will exacerbate the challenges of population growth and environmental degradation, and will contribute to food shortages and undermine economic development.<sup>5</sup>

Under most scenarios for rising temperatures, agricultural production in Asia will decline substantially.<sup>6</sup> This decline will be driven by several factors, including steep reductions in water availability as temperatures rise and glaciers melt, cutting off a major source of water after initial flooding.<sup>7</sup>

Alan Dupont has noted that China's response to this challenge illustrates how climate change within an individual nation may have regional security implications.<sup>8</sup>



To safeguard its water supplies, China is damming the Mekong. This is reducing the amount of water available to downstream states: Burma, Thailand, Laos and Cambodia. China also has diversion designs over another major transboundary river, the Brahmaputra, with major implications for the other major player in the Asian century, India.

Climate change is having a litany of impacts across the Asian continent. These include declining food security, water shortages, heat stress in major population centres, increased prevalence and geographical reach of disease, and more extreme weather events including floods and cyclones.

These impacts obviously carry major and cascading social, economic, human security and national security implications. There is the prospect for food riots, internal instability, civil disorder, and internal and transboundary migration.

Such mass population movements are inevitable when regions, such as those in tropical areas of South East Asia, face increasing extreme heat stress that will reduce labour productivity<sup>9</sup> and will eventually lead to areas becoming uninhabitable.<sup>10</sup>

For instance, under a high emissions scenario (on which the world is currently racking), Jakarta will experience deadly heat conditions year-round by 2100.<sup>11</sup> Parts of southwest Asia will also likely experience temperatures beyond the threshold for human adaptability this century.<sup>12</sup> In such circumstances large scale migration North and South toward mid-latitude areas is inevitable.

In the immediate term climate change is a “threat multiplier” that exacerbates underlying problems. But this century the prospects of major disruption and destabilisation leading to “failed states” and mass migration is a virtual certainty unless there is aggressive mitigation of greenhouse gas emissions.

As the US Department of Defense put it in its *2010 Quadrennial Defense Review*, “while climate change alone does not cause conflict, it may accelerate instability or conflict, placing a burden to respond on civilian institutions and militaries around the world”.<sup>13</sup>

Climate change also poses a direct threat to military operations. The *2016 Defence White Paper* noted that:

Climate change will also place pressure on the Defence estate, with sea level rises having implications for Navy bases and more extreme weather events more frequently putting facilities at risk of damage.<sup>14</sup>

Earlier this month the United States House of Representatives in passing a new defence spending bill described global warming as “a direct threat to national



security” and instructed the Pentagon to report on the ways in which climate change will impact on military operations.<sup>15</sup>

### **Australia’s greenhouse gas emissions and national security**

Some strategic analysts consider climate change to be a threat as serious as nuclear conflict.<sup>16</sup>

There has been growing attention by governments, researchers and think tanks to the security dimensions of climate change. The United Nations Security Council, which has the task of maintaining international peace and security, has discussed climate change twice, in 2007 and 2011.

However, the discussion of climate change and security has not permeated public debate in a significant way. Mainstream discussion of climate change has tended to focus on immediate political issues – such as the modest economic impact of a carbon price – rather than higher order questions including the very capacity of Australia to survive into the next century as a nation state.

In a major report for the Lowy Institute in 2006, Alan Dupont and Graeme Pearman identified some of the main security implications for Australia from climate change.<sup>17</sup> Their analysis has become more pertinent as the rate and severity of current and projected climate change has worsened.

Dupont and Pearman made several recommendations that remain relevant, and which have only been partially heeded by government. The recommendation that the intelligence community undertake a review of the climate risk to national security was taken up in a classified Office of National Assessment review in 2008. (This was not the first time the ONA had looked at the issue: it reported on the matter back in 1981.<sup>18</sup>) Yet only limited progress has been made on their other recommendations.

There is still a limited capacity in our institutions to communicate actionable strategic assessments about the impact of climate change in Australia and the Asia Pacific Region. This is evidenced by the failure of assessments to influence the Australian government’s emissions reduction policy.

Australia is a party to the 2015 Paris Agreement on Climate Change but has adopted weak emissions reduction targets that are inconsistent with the Paris Agreement’s 1.5/2°C temperature goal. Moreover, there is no effective policy to reduce emissions. Since the repeal of the Clean Energy Future legislation Australia’s emissions have been increasing, putting even Australia’s weak goals out of reach.

A necessary (although not sufficient) element of a comprehensive response to the security threat of climate change is an effective emissions reduction policy.



Coordinated, global, action to reduce emissions under the Paris Agreement is the only real option for avoiding the most severe national threats from climate change. Last week new research suggested that there was only a 5 per cent chance of meeting the Paris Agreement's 2°C temperature limit.<sup>19</sup> This should further focus the attention of government on the necessity of pursuing aggressive mitigation efforts.

It is very unlikely that if global temperatures rise by 4°C or more, as they are set to do without rapid reduction in emissions, that Australia will be able to manage the multiple internal and external threats to national security this century.

Yours sincerely,

Tim Stephens

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## References

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- <sup>3</sup> Verisk Maplecroft, Climate Change Vulnerability Index, <https://maplecroft.com/about/news/ccvi.html>
- <sup>4</sup> See Australian Government, Pacific Climate Change Science, <http://www.pacificclimatechangescience.org/>
- <sup>5</sup> Australian Government, Department of Defence, *2016 Defence White Paper* (2016), 55-56.
- <sup>6</sup> J R Porter et al, 'Food security and food production systems' in C B Field et al, *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (2014) 485.
- <sup>7</sup> Jane Qiu, 'Thawing Permafrost Reduces River Runoff', *Nature News*, 6 January 2012, <http://www.nature.com/news/thawing-permafrost-reduces-river-runoff-1.9749>
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<sup>10</sup> Steven C Sherwood and Matthew Huber, 'An adaptability limit to climate change due to heat stress' (2010) 207 *PNAS* 9552.

<sup>11</sup> Camilo Mora et al, 'Global risk of deadly heat' (2017) 7 *Nature Climate Change* 501, 504.

<sup>12</sup> Jeremy S Pal and Elfraith A B Etahir, 'Future temperature in southwest Asia projected to exceed a threshold for human adaptability' (2016) 6 *Nature Climate Change* 197.

<sup>13</sup> US Department of Defense, *Quadrennial Defense Review Report* (2010), 85, [https://www.defense.gov/Portals/1/features/defenseReviews/QDR/QDR\\_as\\_of\\_29JAN10\\_1600.pdf](https://www.defense.gov/Portals/1/features/defenseReviews/QDR/QDR_as_of_29JAN10_1600.pdf)

<sup>14</sup> *2016 Defence White Paper*, above n 5, 102.

<sup>15</sup> Greg Price, 'Climate Change a "National Security Threat," Republican-Led House Declares in Defense Bill Vote', *Newsweek*, 14 July 2017, <http://www.newsweek.com/climate-change-national-security-republicans-637174>

<sup>16</sup> Dupont, above n 8.

<sup>17</sup> Alan Dupont and Graeme Pearman, *Heating up the Planet: Climate Change and Security* (2006).

<sup>18</sup> Clive Hamilton, 'ONA Report Sheds New Light on Climate Change', *Crikey*, 30 July 2009.

<sup>19</sup> Adrian E Raftery et al, 'Less than 2°C warming by 2100 unlikely' (2017) *Nature Climate Change*, doi:10.1038/nclimate3352, <https://www.nature.com/nclimate/journal/vaop/ncurrent/full/nclimate3352.html>