

## **Submission to the Productivity Commission on the “Climate Change Adaptation Draft Report, 2012”**

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The report wisely adopts a ‘real options’ approach, appropriate for the uncertainties we are already facing at national, regional and local scales. It also makes many sound recommendations. I suggest it could be improved in these ways:

1. Providing a global context, and discussing global scenarios of the consequences of climatic change. The impacts of climatic change will coincide with population increase, widespread displacement of people by sea level rise, scarcities of land and water, continuing depletion of biodiversity, ocean acidification and pollution<sup>1</sup>. They are also likely to coincide with the growing military and economic strengths of China and India, shifts in geopolitical influences and probably threats to peace. Deep within the report the authors also refer to the possibility of catastrophic climatic change. Even without this, the most likely scenario for the global future is unprecedented turbulence and extreme uncertainties, against which the tone of the Draft Report seems bland and parochial. This could be redressed to an extent by: 1) mentioning the possibility of catastrophic change near the front of the report; 2) recommending that Australia works pro-actively on strategies for coping with sea level rise with our Asian-Pacific neighbours, where dense populations live or grow food on low-lying land. Such countries are likely sources of climatic change refugees.
2. The authors could be criticised for approaching the ‘wicked problem’ of climatic change with an out-dated linear mindset that promotes marginal change, underplaying irreducible uncertainties, thresholds, path dependency and irreversible changes. Balancing this is the good discussion of uncertainty in the main body of the report. I suggest: 1) the

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<sup>1</sup> Rockström, J., W. Steffen, K. Noone, Å. Persson, F. S. Chapin, III, E. Lambin, T. M. Lenton, M. Scheffer, C. Folke, H. Schellnhuber, B. Nykvist, C. A. De Wit, T. Hughes, S. van der Leeuw, H. Rodhe, S. Sörlin, P. K. Snyder, R. Costanza, U. Svedin, M. Falkenmark, L. Karlberg, R. W. Corell, V. J. Fabry, J. Hansen, B. Walker, D. Liverman, K. Richardson, P. Crutzen, and J. Foley. 2009. Planetary boundaries: exploring the safe operating space for humanity. *Ecology and Society* 14(2): 32. [online] URL: <http://www.ecologyandsociety.org/vol14/iss2/art32/>

authors address uncertainty more fully near the front of the report where busy people will read it 2) replace the lax and interchangeable use of 'risk' and 'uncertainty' near the front of the report with the clear definitions and rigorous application of the terms that occur in the body of the report 3) where the Report explains and discusses real options, include discussion of threshold changes, path dependency, irreversibility, and in some cases the need for transformational change<sup>2</sup>.

3. The useful, if brief discussion of equity neglects equity across generations. Is this neglect another reason for the emphasis on marginal at the expense of transformational changes? I suggest 1) a full discussion of the ethics of intergenerational equity 2) that the authors relate this to a fuller discussion of the choice and consequences of the level of discount rate selected for the cost-benefit analyses.
4. The discussion of cognitive barriers would benefit from a discussion of the phenomenon of denial, of which there are many current examples<sup>3</sup>. It is a major barrier to adaptation but can be addressed through participative social processes, and this ought to be discussed in the information section. Denial is independent of the quality and quantity of the information; it is a part of our human cognitive processes.
5. The authors discuss the limitations of the economic models in the economic appendix. I suggest they add the limitation that the prices in the models are highly likely to change, possibly by orders of magnitude as a consequence of global turbulence.

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<sup>2</sup> Nick Abel, Russell Gorrdard, Ben Harman, Anne Leitch, Jennifer Langridge, Anthony Ryan, Sonja Heyenga, 2011. Sea level rise, coastal development and planned retreat: analytical framework, governance principles and an Australian case study. *Environmental Science and Policy* 14: 279-288

<sup>3</sup> Kahan D M, Jenkins-Smith H, Braman D, 2011, "Cultural cognitions of scientific consensus" *Journal of Risk Research* 14 147-174