



Doctors for the Environment Australia

Promoting health through care of the Environment

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Submission to the Inquiry into the Sustainability Charter by the House of Representatives Standing Committee on Environment and Heritage

There can be no more important issue for the House of Representatives Standing Committee to consider, for it will determine the well-being and survival of humanity over the next century. The issues are global as well as national, for all humanity is linked through the commons of the atmosphere, water resources, natural sources of energy, sustenance from the sea and land and the ecological services that underpin these needs. In these matters we can no longer do what we want for it affects all others and vice versa.

Doctors for the Environment is concerned with the relationships between the state of the environment and human health for the WHO indicates the some 40 per cent of all human ill-health has an environmental basis. The five elements for enquiry, water, energy etc all have a significant health component. Indeed if we look at Sweden's Environmental Objectives detailed in the discussion paper, these are underpinned by 5 fundamental principles, the first of which is "promoting human health". However the other four are also vital for human health. They are 'safeguarding biological diversity; protecting cultural heritage; preserving long-term productivity capacity of the ecosystem; ensuring that natural resources are properly managed.'

Clearly the Swedish thinkers continue to recognize the wide definition of health and well-being as the prime need of humanity, a need that has been replaced in most countries by economic success as the handmaiden of wellbeing. We remind the Committee that the WHO definition of human health forged in 1948 stated health to be 'a state of complete physical, mental and social well being, not merely the absence of disease or infirmity.' Now in 1948, in a world shattered by war, there is good reason to believe that wellbeing meant food, shelter, employment, peace and freedom. But later clarification by H Mahler Director General of WHO indicated "We are now witnessing that the term physical well-being means much more than the biology of the human body; it includes a safe environment and the responsibility for our physical surroundings on the planet as a

whole.” For these reasons we regard the Sustainability Charter to be a health issue as important to the community as other major concerns in human health.

We would be keen to assist the committee with detailed submissions on the health aspects of some of the five—and to suggest targets, but we saw the closing date for submissions only two weeks ago and we would need much longer time to prepare our case. Meanwhile we remind the Committee that each of the five items for discussion have simple health related targets that have benefits that are economic, health related and have true sustainability outcomes. A simple example would be a programmed, progressive move (with targets) to effective city cycle ways—relevant to reducing fossil fuel usage and road expenditure, relevant to reducing the costs of obesity, relevant to respiratory health by reducing particulate and ozone pollution in cities. It is a relevant target under the transport item and highly relevant to an effective footprint. Let us make footprints relevant to the public in this way. For example, maintenance of biodiversity is essential to an ecological footprint. The health relevance is made clear in our educational material displayed in doctors’ surgeries (see www.healthyplanet.info)

As indicated in the first paragraph of this preamble, it would be inappropriate to consider targets without understanding sustainability in a world context. We have therefore asked our Doctors for the Environment Committee Member, Dr Colin Butler, a world authority on these issues, to contribute the following paper. We hope that we will have the opportunity to contribute further.

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Submission to
Inquiry into a Sustainability Charter
by the
House of Representative Standing Committee on Environment & Heritage

*Submission prepared by
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May 2006*

Background

The task of achieving “sustainability” of human societies and the environmental base on which they depend is urgent. Doctors for the Environment Australia congratulate the House of Representatives for holding an inquiry into this vital topic.

Much mystique and controversy surrounds the term “sustainability”. Yet it can hardly be doubted that a primary aim of good governance, whether defined in our modern sense, or through indigenous institutions, has been the maintenance and if possible the improvement of living standards, not only for one’s term of office, but for one’s inheritors and descendants.

At the same time, it is unarguable that governance is primarily concerned with the people represented by that government, even if at the expense of humans who are not similarly represented. For millennia, this strategy has seen the evolution of organized, more or less co-operative human groups, in competition (and sometimes in coalition) with similarly constituted groups, themselves similarly organized in co-operative and competitive groups. Evolutionary forces have seen winners and losers, but overall the trajectory of global wealth has clearly been increasing.

There is overwhelming evidence that many non-European societies found ways of self-organisation which more or less solved what Garret Hardin called “the tragedy of the commons”. Indeed, contrary to Hardin’s assertion, and despite a few well-known cases (such as the civilisation on Easter Island) in which common resources were critically depleted, many traditional societies evolved rules and cultural practices (often, and somewhat confusingly, called “institutions”) which acted to govern and limit free access to vital resources.

But societies are unlikely to be intrinsically prudent. It is more likely that commons-protecting institutions evolved because of scarcity than abundance. Modern civilisation, particularly that part derived from Europe and its offshoots (increasingly copied by people of Japanese, Chinese and Indian heritage) has for several centuries been experiencing a period of an unprecedented increase in material abundance. This abundance has arisen largely because of

- (i) the appropriation of resources from less powerful populations,
- (ii) the ongoing technological and scientific revolution, and
- (iii) the appropriation of resources from the global commons, made possible by technology. No living people own exclusive title to these resources (such as the atmosphere, the deep sea fisheries, or reserves of non-renewable fossil fuels). However, in a very real sense the squandering and pollution of these common goods is at the expense of future generations, of all races.

The velocity and scope of this material bonanza has been of such magnitude that successful governments and societies have made scarcely any progress¹ in evolving the institutions necessary to slow the depletion, let alone the preservation of these scarce resources. This failure is shared by many academic disciplines, which have either ignored these issues (which can, for simplicity, be termed “sustainability”) or have been entranced by elaborate theories which have effectively proclaimed the success of a form of alchemy. Some disciplines have even contributed to the concoction of these theories, such as the economic conceit that different forms of capital are fully substitutable. That is to say, with only slight exaggeration, there are theorists who will argue that humanity has lost nothing if the natural capital of billions of barrels of oil is converted to billions of dollars recorded in an electronic form on a computer.

Described this way, the conceit is obvious. The economists among you may find protest that a sea of counter-examples exist. But humans cannot eat money. Of course, ingenuity has time and again found forms of natural capital which have replaced those which have become scarce, such as paraffin candles rather than whale oil for lighting. This shows that limits can be postponed, rather than removed. All previous societies have reached limits. I have already argued that those societies which were most successful devised cultural and legal means to prevent overshoot i.e. the consumption of natural resources that cannot be sustained in the future. For example, if they did not run out of shellfish, this was not because shellfish were infinite, but that limits were placed on the harvest of shellfish (including by limits to population, which precede modern forms of contraception by millennia).

To argue that our current civilisation will be the one exception to this iron rule is as irrational and deluded as claiming that a bull run will never end, or that the fountain of eternal youth will save us from death. The central argument is not that limits can be evaded, but their proximity will soon confront humanity(2)

¹ Of course I am simplifying. Societies, including Australia, have made some progress, such as the protection of some ecosystems, the banning of most ozone depleting substances and the partial protection of Antarctica. My point is that these efforts are far too small for the scale of our crisis.

This debate would be arcane but for two crucial factors. These are:

- (i) the scale of human action is now global. The depletion of resources is global. This discussion is thus not restricted to a small isolated population living on Easter Island, whose demise will barely impact we observers in the wider global civilisation. We are rapidly depleting the number of vulnerable populations and ecosystems we can exploit in the whole world. This issue affects you, I and (especially) your grandchildren.
- (ii) the traditional strategy of fortification against threat is breaking down. Until recently, privileged populations have practiced (whether deliberately or inadvertently because of geography) defensive strategies which have more or less successfully insulated them from chaos in external populations. For example, the suffering caused by the mid 19th century Irish famine was largely sequestered within Ireland. In that case, the Irish Sea, combined with discriminatory economic practices, was sufficient to prevent the worst harm contaminating the more affluent population of Britain.

Today, it is obvious that populations that are materially, technologically and militarily poor will suffer the most from the scarcity of renewable and non-renewable resources which we face.² However, unlike many situations in the past, it is not clear that modern variations of the fortress (such as the Australian immigration laws or its alliance with the United States) will provide sufficient protection. While such practices may buy some time (perhaps even a generation) they could well worsen the long term prognosis for both rich and poor populations. Not least this is because disadvantaged populations will increasingly (indeed they already have some access) have the means to harm us, cowering behind our walls. If this scenario occurs

(i.e. an increasingly fortified, policed and divided world) then poor populations will also have an increased motivation to strike at us.

There appears to be an increased appreciation of this possibility³ within the Australian parliament, as evidenced by the bilateral (and wide community) support for intervention in the Solomon Islands, East Timor, and perhaps elsewhere in our neighbourhood. However, the committee will surely appreciate that such interventions are already stretching the Australian military resources. Any substantial spread of instability in our near region (e.g. to Indonesia, Papua, the Philippines and Bangladesh) are likely to be extremely problematic.⁴

In short, sustainable governance must embrace populations far broader than those which have presently evolved. Australian sustainability depends on East and South Asian sustainability; that depends on global sustainability. This is an immense challenge, but the alternative is a likely deterioration in global living standards, and an uncomfortable possibility of a new Dark Age for civilisation.

² I am not a total pessimist. It is conceivable that new technologies and means of social relations could again defer our apparently gathering crisis, but I refuse to believe such postponement can be infinite. Indeed, I have become increasingly concerned that partial and then global collapse may occur in my lifetime (I was born in 1955); perhaps within three decades

³ I use these terms broadly, including the composition of the atmosphere as a natural resource. It is ever more apparent that the main greenhouse gas, carbon dioxide, once though totally benign, is an extremely serious and tenacious pollutant.

⁴

Not necessarily by terrorism, but also through other forms of criminalisation, such as money laundering, people smuggling and drug trafficking.

⁵ I would argue that the current regional examples of quasi-state failure are symptomatic of localized unsustainability, and that there are more distant examples (such as Zimbabwe and Nepal). For example, East Timor has an extraordinarily high birth rate, far beyond its economy's capacity to absorb). Epidemic disease, including HIV/AIDS can be conceptualised as an ingredient and consequence of this breakdown – relevant in Zimbabwe and perhaps in the future in PNG.

Conclusion

I hope that the Charter of Sustainability successfully grapples with these issues. Advancing sustainability appears immensely painful because we, as a society, have become addicted to easy consumption. Yet, some steps towards sustainability (such as installing solar hot water, bicycling to the shops and meeting our neighbours in a communal vegetable garden) are fairly straightforward and enjoyable. However, changing course to one that is more sustainable will require immense courage and truly enlightened leadership. Our leaders will have to admit that our 500 year old party is closing. This will involve a substantial loss of face and swallowing of pride. Yet, with luck and hard work such a dramatic policy reversal could see Australia again occupy a position of visionary international leadership.

Rather than list a series of minor targets (such as cleaner air, or even a substantial and concrete reduction in emissions of greenhouse gases) Doctors for the Environment calls upon this charter to call for a radical change in the Australian lifestyle, and for a radical and positive engagement with our neighbouring countries. We must urgently and genuinely strive to develop the technologies and strategies which can lift people from poverty. These cannot rely on market economics, as practiced. Those strategies were developed at a time when natural limits were generations away; there stubborn persistence is rapidly driving civilization to the precipice. At the same time such strategies must be designed to facilitate enduring health and well-being. For more information I refer to various articles I have published or contributed to which outline these strategies and mechanisms in more detail (see below).

Selected bibliography: Publications, presentations and media presentations by the author, relevant to sustainability. Those that are starred * are particularly relevant.

1. Butler, C.D. 1994: Overpopulation, overconsumption and economics. *Lancet* **343**: 582-584. *
2. _____ 1997: The consumption bomb. *Medicine, Conflict and Survival* **13**: 209-218.
3. _____ 1998: Climate change, population health and the general practitioner. *British Journal of General Practice* **48**: 1806-1807.
4. _____ 2000: Inequality, global change and the sustainability of civilisation. *Global Change and Human Health* **1**(2): 156-172. *
5. _____ 2000: Mbeki, HIV and poverty. *British Journal of General Practice* **50**, 844.
6. _____ 2000: Entrapment: global ecological and/or local demographic? Reflections upon reading the BMJ's "six billion day" special issue. *Ecosystem Health* **6**, 171-180. *
7. Lee, K., Bradley, D., Ahern, M.J., McMichael, A.J. and Butler, C.D. 2002: Globalisation and health. Informed and open debate on globalisation and health is needed. *Global Change and Human Health* **3**(2), 16-19.
8. _____ 2003: The environment always matters. *Development Bulletin* Vol **62**: 51-55.
9. _____ 2003: Conflict, resources, water and entrapment. *Development Bulletin* Vol **63**: 103-105.
10. McMichael A.J., Butler C.D., Folke C: 2003: New visions for addressing sustainability, *Science* **302**: 1919-1920.*
11. Hales S., Butler C.D., Corvalan C.F., and Woodward A. 2004: Health aspects of the Millennium Ecosystem Assessment *EcoHealth* **1**(2) 124-128.
12. McMichael A.J., and Butler C.D. 2004: Climate change, health, and development goals: needs and dilemmas (commentary). *Lancet* **364**: 2004-2006. *
13. Butler, C.D. 2004: Human carrying capacity and human health. *Public Library of Science Medicine* **1**(3)e55: 192-194. *
14. McMichael A.J., and Butler C.D. 2005: The effect of environmental change on food production, human nutrition, and health. *Asia Pacific Journal of Clinical Nutrition* Vol **14** (Suppl) S39-47.
15. Butler C.D. 2005: Peering into the fog: ecologic change, human affairs and the future (commentary)

EcoHealth 2: 17-21. *

16. Butler C.D., Corvalan, C.F., and Koren, H.S. 2005: Human health and well-being in global ecological scenarios. *Ecosystems* 8(2): 153-164. *
17. McMichael A.J., and Butler C.D. 2005: Fish, health, and sustainability (commentary) *American Journal of Preventive Medicine* 29(4): 322-323. *
18. Nicholls N., Butler C.D., and Hanigan I. (2006): Interannual rainfall variations and suicide in New South Wales, Australia, 1964-2001. *International Journal of Biometeorology* 50: 139-143.

In press

19. McMichael A.J., and Butler C.D. Emerging health issues Emerging health issues. The widening challenge for population health promotion. *Health Promotion International* (submitted September 29, 2005) (accepted February 6, 2006). *
20. Butler C.D., and Oluoch-Kosura W. Linking ecosystem services and human well-being *Ecology and Society* (accepted January 12, 2006) *
21. Butler C.D. and Friel S. Time to regenerate: Ecosystems and Health Promotion *Public Library of Science Medicine* (accepted March 7, 2006) *

Papers under review

22. Woodruff R, McMichael AJ, Butler CD, Hales S. Action on climate change: the health risks of procrastinating Australia and New Zealand. *Journal of Public Health*. (submitted February 15, 2006). *
23. Butler C.D. Overpopulation, sustainability and the failure of demographers. *Science* (submitted April 30, 2006). *

Book chapters

24. Butler C.D., Douglas, R.M., and McMichael, A.J. (2001): Globalisation and environmental change: implications for health and health inequalities. In: *The Social Origins of Health and Well-being* (eds: R. Eckersley, J. Dixon and B. Douglas) Cambridge University Press, Cambridge, UK, pp. 34-50.
25. _____ (2002): Global nutritional inequalities. In: *Good Grub. Food for Healthy People and a Healthy Planet* (ed: Furnass, B.) Nature and Society Forum, Canberra, pp 37-40.
26. _____ (2003): Environmental challenges. In: *The Food Atlas* (E. Millstone and T. Lang), Earthscan, London, UK., pp. 16-17.
27. _____ (2003): Water pressure. In: *The Food Atlas* (E. Millstone and T. Lang), Earthscan, London, UK., pp. 18-19.
28. McMichael, A.J., Butler, C.D., and Ahern, M.J. (2003): The environment. In: *Global Public Goods for Health* (eds R.Smith, R. Beaglehole, D Woodward, N Drager), Oxford University Press, Oxford, UK, pp 94-116. *
29. Butler C.D., Chambers, R., Chopra, K., Dasgupta, P., Duraiappah, A., Kumar, P., McMichael, A.J., and Niu, W-Y. (2003): Ecosystems and human well-being. In: *Ecosystems and Human Well-being*, Island Press, Washington DC, (co-ordinating lead author, one of six) order of authors alphabetical), pp 71-84. *
30. Grootjans J., Townsend M., Butler C.D. and Heyworth J., (2004): Listening. In: *Sustainability and Health: Working Together* (eds: Brown V.A., Grootjans J., Ritchie J., Townsend M., and Verrinder G.) Sydney: Allen and Unwin., pp 39-79.
31. Butler C.D., (2005): Inequality and conflict. In: *In Search of Sustainability* (eds: Goldie J, Douglas, R.M., and Furnass, B.) Melbourne: CSIRO., pp 33-48. *

32. _____ (2005): Free trade in food: moral and physical hazards. In: *Sustainability in Agriculture Issues in Environmental Science and Technology* (Vol 21) (Eds: Hester, R.E., Harrison R.M.), Cambridge: Royal Society of Chemistry, pp 103-125.
33. _____, Oluoch-Kosura, W., Corvalan C.F., Fobil J., Koren H., Pingali P., Tancredi E., and Hales S., (2005): Human well-being across the scenarios. In: *Ecosystems and Human Well-Being: Scenarios Vol 2*, Eds: S.R. Carpenter, P. L. Pingali, E. M. Bennett, M. B. Zurek, Island Press, Washington DC. (Co-ordinating lead author; one of two; also corresponding author). pp 409-429. *
34. Kareiva P., Agard, J.B.R., Alder, J., Bennett E., Butler C., Carpenter, S., Cheung, W.W., Cumming, G.S., Defries, R., de Vries, B., Dickinson, R.E., Dobson, A., Foley, J.E., Geoghegan, J., Holland, B., Kabat, P., Keymer, J., Kleidon, A., Lodge, D., Manson, S.M., McGlade, J., Mooney, H., Parma, A.M., Pascual, M.A., Pereira, H.M., Rosegrant, M., Ringler, C., Sala, O.E., Turner II, B.L., van Vuuren, D., Wall, D.H., Wilkinson, P., Wolters V., (*Review Editors*: Reid, R., Scheffer, M., Alonso, A.) (2005): State of the art in describing future changes in ecosystem services In: *Ecosystems and Human Well-Being: Scenarios Vol 2*, Eds: S.R. Carpenter, P. L. Pingali, E. M. Bennett, M. B. Zurek, Island Press, Washington DC (lead author). pp 71-115.
35. Cork S., Peterson G., Petschel-Held G., Alcamo, J., Alder, J., Bennett, E., Carr, ER., Deane, D., Nelson, GC., Ribeiro T., Butler C.D., Mendiondo E., Oluoch-Kosura W., and Zurek M. (contributing author) (2005): Four scenarios In: *Ecosystems and Human Well-Being: Scenarios Vol 2*, Eds: S.R. Carpenter, P. L. Pingali, E. M. Bennett, M. B. Zurek, Island Press, Washington DC, Island Press, Washington DC. pp 223-294.
36. Corvalan C.F., Hales S., Woodward A., Campbell-Lendrum D., Ebi K., Pires F.A., Soskolne C.L., Butler C.D., Githeko A., Lindgren E., and Parkes M. (contributing author) (2005): Consequences and options for human health. In: *Policy Responses Findings of the Responses Working Group*, Eds: Kanchan Chopra K., Leemans R., Kumar P., Simons, H., Island Press, Washington DC. pp 467-486.
37. Koren H.S., and Butler C.D. (2005) The interconnection between the built environment ecology and health. In: *Environmental Security and Environmental Management: The Role of Risk Assessment. Proceedings of the NATO Advanced Research Workshop on The Role of Risk Assessment in Environmental Security and Emergency Preparedness in the Mediterranean Region, held in Eilat, Israel, April 15-18, 2004*, Springer, NATO series (Eds: Morel B., Linkov, I.) pp 111-125.
38. Butler C.D. and McMichael A.J. (2006): Environmental health. In: *Social Injustice and Public Health* (Eds: Levy B.S., Sidel, V.W.), Oxford: Oxford University Press, pp 318-336.

In press

39. McMichael A.J., Butler C.D., and Folke C. (2006): New visions for addressing sustainability. In: *State of the Planet* (editors D. Kennedy) Island Press, Washington DC. (solicited March 30, 2005, submitted June 17, 2005). *

Book chapters under review

40. Human health and forests: an overview. In *People, Health and Forests*. (Editors: Colfer, Carol, Kleianu, Eckhard). London Earthscan, Bogor, Indonesia, CIFOR. (chapter solicited February, 2006, submitted April 19, 2006)

Work under preparation for peer review (journal articles and chapters)

41. Butler C.D. Integrating the links between agriculture, health and environment. *Food and Nutrition Bulletin* (solicited April, 2006; estimated publication June 2007)
42. Colin L. Soskolne, CL., London L., Ijsselmuiden CI., Butler CD., von Schirnding Y., Bertollini R. Toward a New Global Agenda for Research in Environmental Epidemiology. *Epidemiology* *
43. Butler C.D. Demography, carrying capacity and entrapment. *Population Review*

44. Butler C.D. Global income inequality 1964-2004 *New Political Economy*
45. Butler C.D. Poverty, inequality, future food security and conflict. *Social Science and Medicine*
46. McMichael A.J., and Butler C.D. Global health trends: Evidence for and against sustainable progress, *Demographic Research*
47. Butler C.D. Unsustainability in the 21st century: causes, indicators, pathways and remedies, *EcoHealth*
48. Butler C.D. *The Human Titanic* (book – adaptation of my PhD thesis)

Reports

49. Butler C.D. 2003 Population and environment in Australia. A report for the Australian Academy of Science, 46 pp. <http://www.conference.science.org.au/> last accessed December 17, 2004 *
50. W.H.O. 2003 Meeting of institutions in the process of becoming WHO collaborating centres on global environmental change and human health. World Health Organization, Geneva. (rapporteur), 29 pp. WHO/SDE/PHE/03.01
51. Woodruff R, Hales S, Butler CD, McMichael AJ. 2005. Climate Change Health Impacts in Australia. Effects of dramatic CO₂ emission reductions. Report for the Australian Conservation Foundation and the Australian Medical Association. Canberra: National Centre for Epidemiology and Population Health, 44 pp., released September 22, 2005. http://www.acfonline.org.au/uploads/res_AMA_ACF_Full_Report.pdf 28.9.05 *
52. Corvalan C.F., Hales S., McMichael A.J., Butler C.D., Campbell-Lendrum D., Confalonieri U., Leitner K., Lewis, N., Patz J., Polson K., Scheraga J., Woodward A., and Younes, M. (December 2005) Health Synthesis Report, Millennium Ecosystem Assessment., Geneva: WHO.
53. Butler, CD. 2006. Population growth, migration and four Millennium Development Goals. Submission to the UK All Party Parliamentary Group on Population, Development and Reproductive Health on the impact of population growth on the Millennium Development Goals, May 2006. *

Theses

54. ____ 2002 Ph.D. *Inequality and Sustainability*, Australian National University, Canberra, ACT, Australia. <http://thesis.anu.edu.au/public/adt-ANU20030324.171924/> *

Other articles

55. ____ 1997: Population, health and the environment in the 21st century. (Report of Bangladeshi Sociological Association conference, Dhaka, Bangladesh.
56. ____ 1997: The future of epidemiology: an occupation ending? *Snow's Field* 7 (2): 1-3.
57. Hart, B and Butler, C.D 1997: Global ecohealth network launched at site of the Broad St pump. *Snow's Field* 7 (2): 5-7.
58. ____ 1998: Causal criteria, inequality and sustainability. *Australasian Epidemiologist* 5 (3): 11.
59. ____ 1990: Overpopulation and overconsumption: *Global Health and Mental Peace Conference*, Tibetan health department (in exile), Dharamsala, HP, India, Nov.
60. ____ 1994: Overpopulation, overconsumption and economics: *Australian Public Health Association annual meeting*, Adelaide, SA, Sept.
61. ____ 1994: Overpopulation, overconsumption and economics: *Menzies Foundation for Population Health*, Hobart, Tas
62. ____ 1994: Overpopulation, overconsumption and economics: *Royal Society of Tasmania*, annual members' night, Launceston Tas, Nov.
63. ____ 1995: Overpopulation, overconsumption and Economics: *Rural Doctors' Association of Tasmania*, biannual meeting, Bronte Park, Tas, Feb.

64. ____ 1995: Sustainable primary health care in developing countries: *Medical Association for the Prevention of War, national conference*, Sydney, NSW, Sept.
65. ____ 1995: The consumption bomb: *Medical Association for the Prevention of War, national conference*, Sydney, NSW, Sept.
66. ____ 1995: The consumption bomb: *Australian Tropical Health and Nutrition; annual conference*, Brisbane, Qld, Sept.
67. ____ 1996: The consumption bomb: *Tasmanian Haematology, Immunology and Neoplasia Group*, 20th weekend scientific meeting, Poatina, Tas, March.
68. ____ 1997: Power and the public health agenda: The hidden hand in public health: *Environmental Rights Group*, LSH&TM, Jan.
69. ____ 1998: Inequality, ecology and revolution: *Nature and Society Forum*, Canberra, ACT, April 15
70. ____ 1998: Causal criteria, and sustainability. *Developing Health, NCEPH 10th anniversary conference*, Canberra, ACT, Nov.
71. ____ 1998: Population health, inequality and causal criteria: *Australasian Epidemiological Association*, Hobart, Tas, Sept.
72. ____ 1999: The rich and the poor. Surviving the third millennium. *XIIIth Horizons of Science Forum*, University of Technology, Sydney, Feb 24.
73. ____ 1999: Is exchange-adjusted income a surrogate for global entitlement? *Public Health Association Expo*, ANU, Canberra, ACT, August.
74. ____, and Smith, L. 1999: Changes in global exchange adjusted income inequality from 1990-97. *Economics Society of Australia*, annual meeting, La Trobe University, Melbourne, Vic.
75. ____ 1999: Environmental and other forms of entitlement. *Alterity Conference*, ANU, Canberra, ACT, Oct.
76. ____ 2000: Towards a theory for a Global Environmental Kuznets Curve. *International Society for Ecological Economics 5th international meeting*, Canberra, ACT, July. *
77. ____, Douglas, RM., and McMichael, A.J. 2000: Globalisation and environmental change: implications for health and health inequalities. *The Social Origins of Health and Well Being-From the Planetary to the Molecular. Health Inequalities Research Collaboration* Canberra, ACT, July.
78. ____ 2000: An Index of Global Environmental Change: an index of global ecosystem health? *International Society for Ecosystem Health symposium*, Brisbane, Qld, 12-14 July.
79. ____ 2000: Securing a global environmental future. *Public Health Association of Australia, annual meeting*, Canberra, ACT, Dec.
80. McMichael A.J., and Butler C.D. 2002: Global health trends: Evidence for and against sustainable progress, *International Union for the Scientific Study of Population, Committee on Emerging Health Threats*, Rostock, Germany, June, 2002.
81. ____ 2002: Population health and the environmental war. *Healthy Ecosystems, Healthy People. International Society for Ecosystem Health*, Washington DC, USA, June.
82. ____, Corvalan, C.F. and Koren H.S. Human health and ecosystem services. Internal Millennium Assessment Presentation, Scenarios Working Group, Bangkok, Thailand, October, 2002
83. ____ 2002: Global social capital, sustainability, and hope. *Indo-Pacific Ecosystem Health Conference* Edith Cowan University, Perth WA, 24-27 November.
http://www.chs.ecu.edu.au/research/ceh/conference_2002/index.html 13.2.03
84. ____ 2003: The Australian dilemma. *Airs, Waters, Places Conference*, University of Newcastle, NSW, Australia. April 14-15.

85. Van Kerkhoff L., Butler C.D., and Eckersley R. 2003: Sustainability and health. Internal NCEPH presentation April 30.
86. _____. 2003: The impact of population change: Key issues for future development policy. *Population Change And Population Futures In Asia-Pacific: Implications For Development Policy*, National Museum of Australia, Canberra, Australia 5 June.
87. _____. 2003 Global environmental change and human well-being. *Max Planck Institute for Chemistry, Atmospheric Chemistry Division*, Mainz, Germany June 27.
88. _____. 2003 Poverty, inequality, future food security and conflict. *Poverty, Food and Health in Welfare: Current Issues, Future Perspectives*. Lisbon, Portugal. July 1-4.
89. _____. 2003 Global environmental change and human well-being. *Nicholas School of the Environment, Duke University, North Carolina, USA*. July 10.
90. _____. 2003 Ecosystem services, human health and the future. *Environmental Protection Agency*, Chapel Hill, NC, USA July 10.
91. _____. 2003 Public health, human carrying capacity and the future. *School of Public Health, University of North Carolina*, Chapel Hill, NC, USA. July 11.
92. _____. and Corvalan, C.F. 2003. Ecosystem change and the future of civilisation. *Traversing Boundaries*. International Society for Environmental Epidemiology, 15th international meeting. Perth WA Australia September 24-26.
93. _____. 2003 Climate change and sustainable development. Climate change short course, NCEPH, ANU. October 2.
94. _____. 2003 Global health futures. The glass may be half full – but what does it taste like? NCEPH seminar October 3.
95. _____. 2003 Unexpected divergence in the global Kravis co-efficient. Another explanation for global inequality? *Institute for Economic Growth*, New Delhi, India October 23.
96. _____. 2003 Health. In Search of Sustainability Australia 21, Sustainable Population Australia and Nature and Society Forum, The Shine Dome, Canberra November 14.
97. _____. 2003 Equity and Peace. In Search of Sustainability Australia 21, Sustainable Population Australia and Nature and Society Forum, The Shine Dome, Canberra November 14.
98. _____. 2004. Population and Environment in Australia. An analytical critique of the online population and environment conference material highlighting the major points and issues raised, as part of the background document for the 2004 Fenner Conference on the Environment, called “Understanding the Population–Environment Debate: Bridging Disciplinary Divides”, Australian Academy of Science, 6 pp. *
99. _____. 2004. The Republic of the Discontented. Centre for Progressive Religious Thought. Canberra (September 2).
100. _____. 2004 Environmental change and food production: Consequences for human nutrition and health. Institute of Agro-environment and Sustainable Development, Chinese Academy of Agricultural Sciences (CAAS), Beijing, China (September 21).
101. _____. 2005 The relationship between agriculture and human health: an environmental perspective. Consultative Group on International Agricultural Research (CGIAR), International Food Policy Research Institute (IFPRI) Washington DC, USA June 23-24.
102. _____. 2005 Ecosocial systems and health promotion, Carlton, Melbourne. Health Promotion Innovations Unit, VicHealth, July 25.
103. _____. 2005 Emerging health issues 6th Global Conference on Health Promotion Bangkok,

Thailand. August 7.

- 104. _____ 2005 Ecology and vulnerability: using the poor to absorb the shock. International Network of Engaged Buddhists meeting, Buddhism and Social Equality, Nagpur, Maharashtra, India. October 14.
- 105. _____ 2005 Environmental Health: establishing the conceptual framework. Innovations workshop on Systemic environmental change and relationships to mental health. Burgmann College, Australian National University, Canberra. November 23

In preparation

- 106. _____ 2006 Ecology, justice and health. Global Ecological Integrity Group, Samos, Greece, July 4-9
- 107. _____ 2006 Health and development in scenarios. Energy Modelling Forum, Snowmass, CO, USA July 25-August 2.

Media contact

- 108. 2004 Australia's attitude to climate change - a new form of White Australia? *Radio National Perspective* (August 19, 2004) *