

How to Live Well with a Price on Carbon: The Big Picture

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10 August 2011

Hawthorn Town Hall



The Big Picture: Outline

- Context: Resurgent skepticism. Why?
- The stakes: Projections and likely impacts
- Australia's contribution to the problem
- What's needed?
- Who are the extremists?

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1990 Liberal Campaign Pledge

Millennium Milestones

The specific goals and targets of a Liberal Government to the year 2001 include:

- The area of land to be rehabilitated under our Soil Conservation Strategy
- Plants and animals to be safeguarded until they can be taken off the Endangered Species List
- The amount of new forest lands and land for Priority and National Parks
- A date for uniform national standards on air and water pollution
- A complete phase out of CFCs and halons by 1995, and a ban on their export
- An achievable level of energy use from 'alternate' fuel sources
- A tax review to promote sound environmental practices in industry
- A reduction in 'greenhouse gas' emissions of at least 20% by the year 2000
- Reduced salinity in the Murray Darling River Basin
- A goal of 20% reduction in energy use by government authorities
- A set date for a national facility for the disposal of intractable wastes
- Specific reductions in vehicle and power station 'greenhouse gas' emissions
- Tax rewards for industries that take steps to protect the environment, and
- History of rivers and waterways in need of rehabilitation, including urban waterways
- A Recycling Programme to identify amounts of paper, oil and other products that can be recovered on a national scale



SENATOR CHRIS PUPLOCK
Shadow Minister for the Environment and the Arts

"We embrace the philosophy of sustainable development – we reject the false dichotomy of jobs versus the environment. We can have both, at the same time pursuing strategies of ecologically responsible development which improves our standards of living while promoting responsible conservation policies which improve our quality of life.

We will work with all Australians to achieve these goals and with the States, the conservation movement, industry, scientists and all concerned citizens. We seek a co-operative federalist approach to the solution of environmental problems but we will never renege from a willingness to act in the genuine national interest wherever that is required."



ANDREW PEACOCK

A reduction in 'greenhouse gas' emissions of at least 20% by the year 2000

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A fair go for the environment



➤ Liberal leader John Hewson took the same policy to the 1993 election

Incentives for disproving link between greenhouse gases and climate change

Climate scientists:

- Nobel Prize
- Lasting fame
- Thanks of a grateful world
- Huge research grants



Source: http://nobelprize.org/educational/nobelprize_info/

Fossil-fuel intensive industries:

- Hundreds of billions of \$ in future revenues
- Higher asset values & stock prices
- Increased ability to attract talented staff
- Improved brand image

Conclusion?

- VERY strong incentives for climate scientists to disprove link. **Hasn't happened.**
- VERY strong incentives for fossil-fuel intensive industries to try to disprove or create doubt about link.

What happened since 1990? Backlash

- Since 1990, strong, industry-funded, well-documented campaign of disinformation on environmental issues generally and climate change in particular. (Rerun of 1960s-1970s on tobacco smoke & cancer link - including some of the *same people* – see Oreskes, *Merchants of Doubt*)
- Libertarian, free-market think tanks viewed climate science as carrying a threat of more government regulation – so sided with those denying link between greenhouse gas emissions and climate change.
- A major strategic error – setting political libertarianism against sound science. Liberty \neq total absence of regulation (road rules? consumer protection laws? contract enforcement?)

Documenting the backlash



Example 1 :

CO₂ is natural - how can it be a pollutant?

“Carbon-dioxide: They call it pollution. We call it life.”

- Competitive Enterprise Institute TV ad.

<http://www.youtube.com/watch?v=7sGKvDNdJNA>



➤ A: Whether something is natural or not is irrelevant. It all depends on its *concentration* and *effects* on the system

- Manure is natural. Some on your fields is good. Neck deep isn't.
- A fraction of a drop of nerve agent VX (less than 10 milligrams) will kill you stone dead. (0.000014% of 70kg body weight, compared with atmospheric CO₂ concentration 392 parts per million or 0.0392%)
- CO₂ is only one (the most important) of around 60 greenhouse gases

Example 2:

Rising sea-levels: *The Australian* vs. the CSIRO

THE AUSTRALIAN

Penny Wong signals doom for iconic beaches

Lanai Vasek and Matthew Franklin | The Australian | February 19, 2010 12:00AM

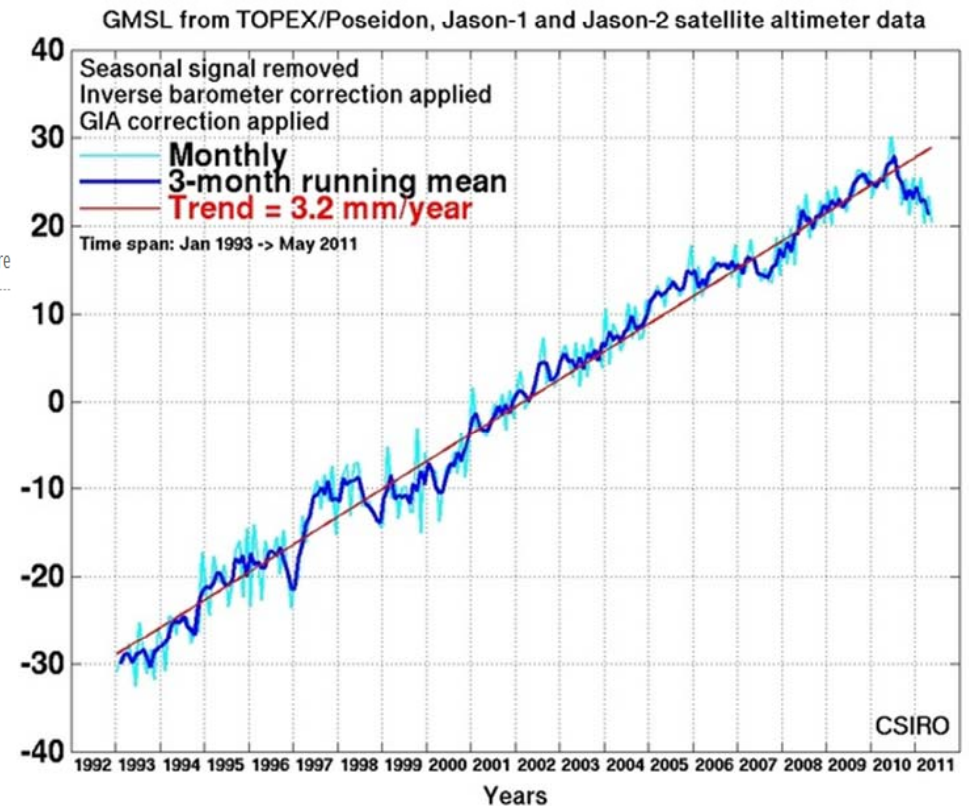
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AUSTRALIA'S most iconic beaches, including Bondi, Bells and those on the Sunshine Coast, could erode away or recede by hundreds of metres over the coming century, according to Climate Change Minister Penny Wong.

But locals aren't so sure.

Bondi veteran Lee Boman has swum at the beach for more than 30 years and was adamant he had seen "no change" to the coastline over that period. "Nothing too drastic that indicates it is going to be changed in the future," said Mr Boman, 53.



Source: http://www.cmar.csiro.au/sealevel/sl_hist_last_15.html

Results?

- Right-wings of conservative parties & some media in Australia & US sided with those denying link – See eg: http://scienceblogs.com/deltoid/the_war_on_science/
- The field of constructive engagement on *solutions* has been vacated to the centre & the left of politics.
- A time bomb of opposition to good science was smuggled into conservative / libertarian politics. At some point it will blow up in their faces. Should be of major concern to thoughtful conservatives.
- Now too: Opposition to sound economics! Virtually ALL economists say market-based approach is best. ALP trying to introduce market-based mechanism while Coalition proposes government regulated, expensive, bureaucratic ‘direct action’. Bizarre situation.
- Conservatives are in the process of losing entire generations of potential supporters: as they face the consequences of climate change in future, they will remember.

Who will you trust?

➤ Strong statements affirming the reality of human contribution to climate change have been released by the **National Academies of Science** of: Australia, Belgium, Brazil, Canada, the Caribbean, China, France, Germany, India, Indonesia, Ireland, Italy, Japan, Malaysia, Mexico, New Zealand, Russia, South Africa, Sweden, the US and UK.

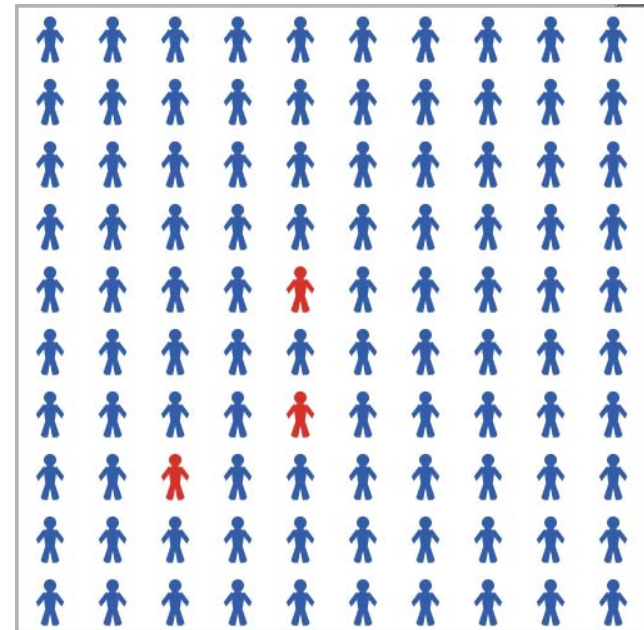
➤ There's 'scientists' & scientists. Would you ask a plumber to build your kitchen cabinets? Would you ask a GP to do your heart surgery?

➤ When asked "Do you think human activity is a significant contributing factor in changing mean global temperatures?" 97% of scientists with more than 50% of published research papers on climate change said 'Yes'.

Doran, P.T. and Zimmerman, M.K., (2009) "Examining the Scientific Consensus on Climate Change", *EOS: Transactions of the American Geophysical Union*, Vol. 90, No. 3, 20 January, pp. 22-23.

http://tigger.uic.edu/~pdoran/012009_Doran_final.pdf

➤ Where are the published models that say 'No problem'?



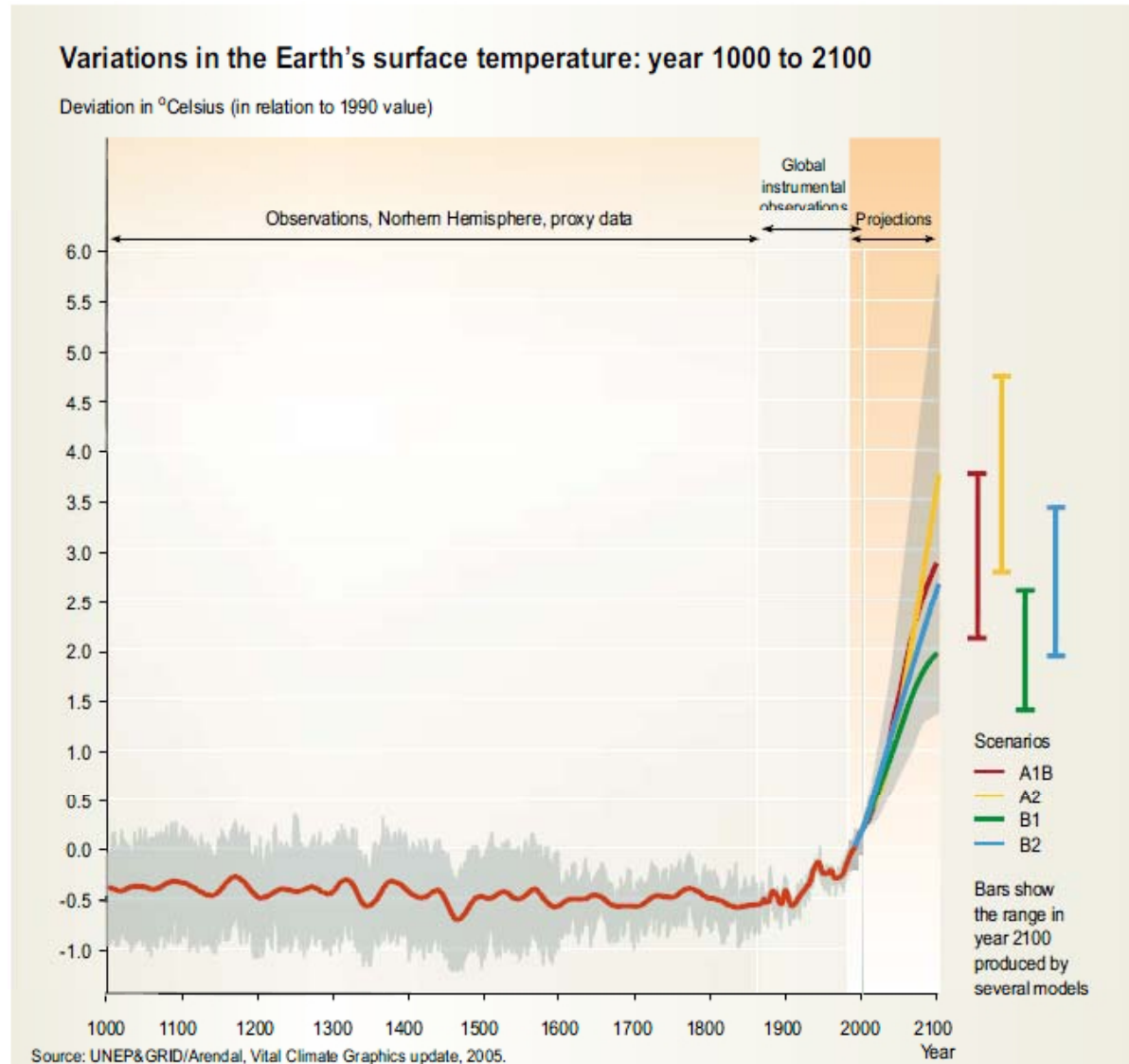
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Temperatures Projections 1000-2100

Two separate considerations for risk management:

1. **Scale** of the threat
2. **Urgency** of the threat

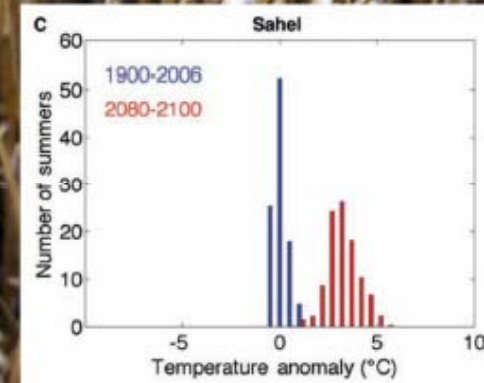
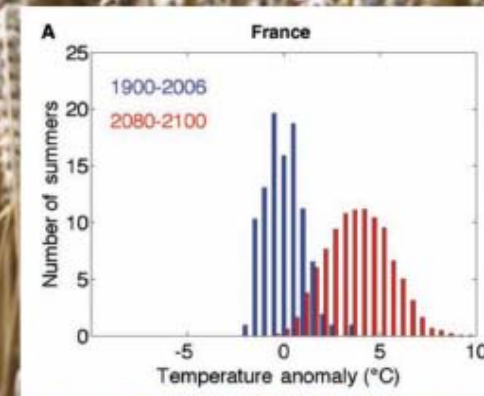
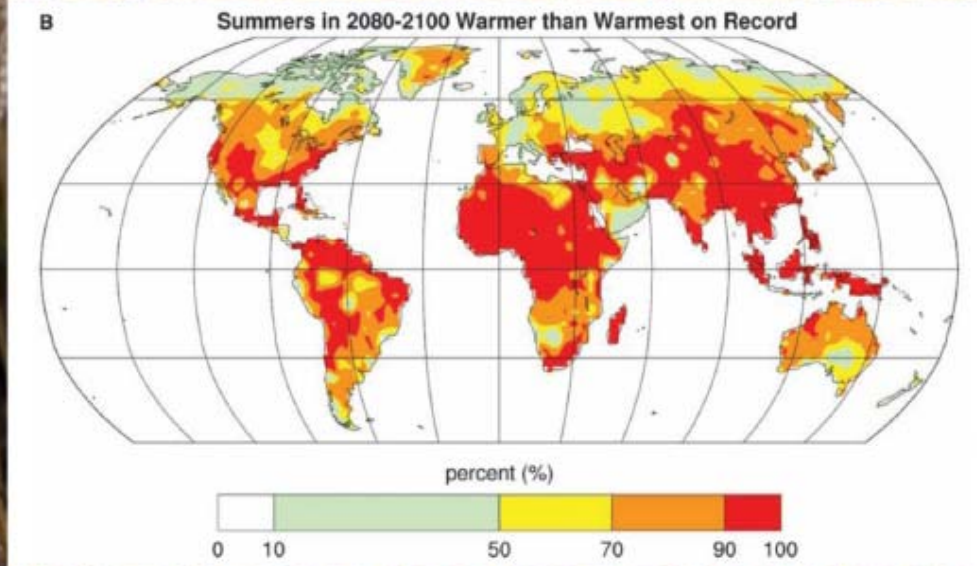


Source: UNEP, (2009) *Climate in Peril: A Popular Guide to the Latest IPCC Reports*, GRID-Arendal & SMI Books: Arendal, Norway & United Nations Environment Program: Nairobi, Kenya, p. 26.

Food Security Outlook

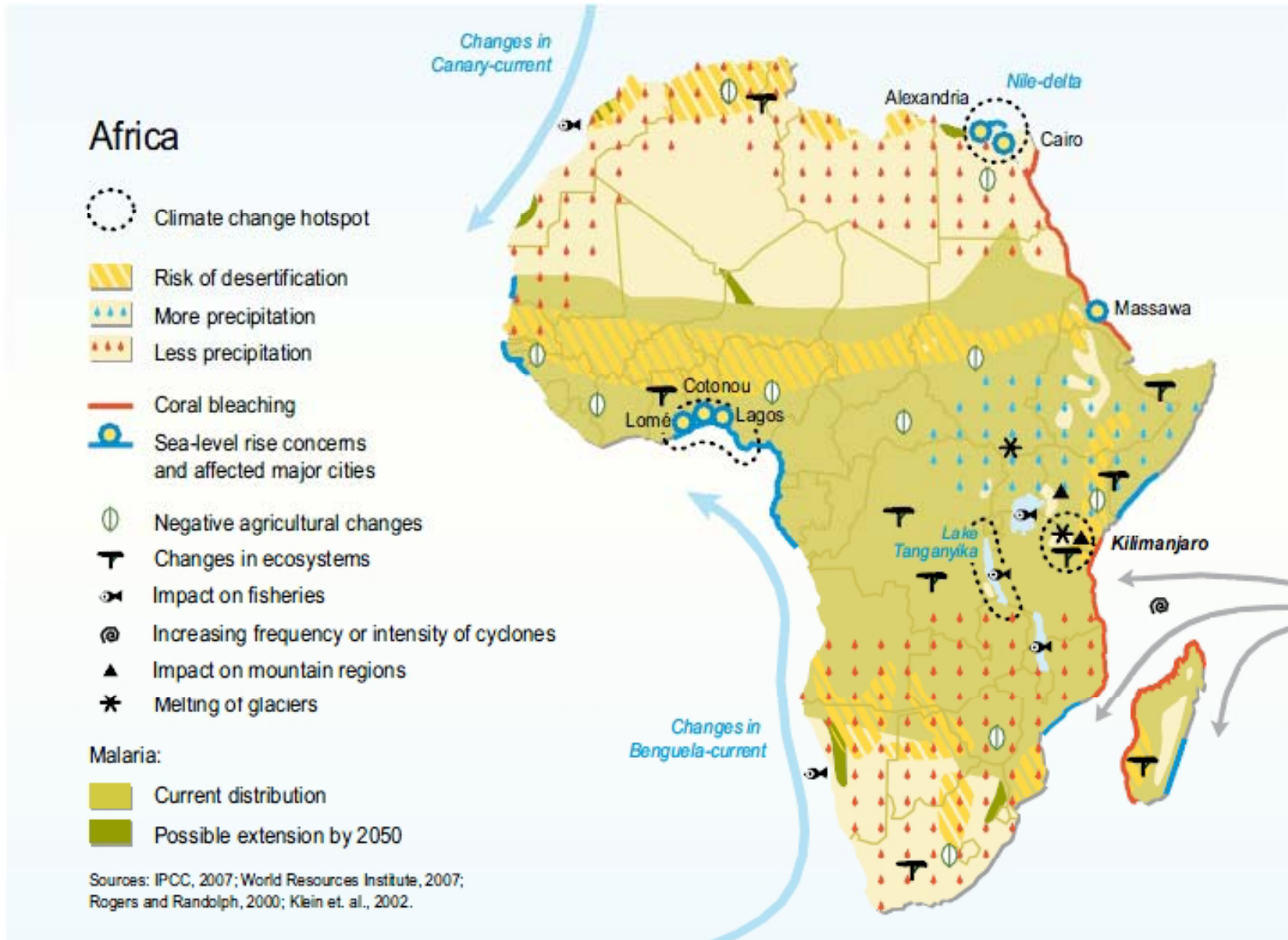
Historical Warnings of Future Food Insecurity with Unprecedented Seasonal Heat

David. S. Battisti¹ and Rosamond L. Naylor²



9 JANUARY 2009 VOL 323 SCIENCE

Projections for Africa



Source: UNEP, (2009) *Climate in Peril: A Popular Guide to the Latest IPCC Reports*, GRID-Arendal & SMI Books: Arendal, Norway & United Nations Environment Program: Nairobi, Kenya, p. 32.

Projections for Asia



Source: UNEP, (2009)
Climate in Peril: A Popular Guide to the Latest IPCC Reports, GRID-Arendal & SMI Books: Arendal, Norway & United Nations Environment Program: Nairobi, Kenya, p. 34.

Adaptation in Bangladesh: Manikganj District, Harirampur Upazila

➤ Ramakrishnapur village



The greatest wholesale violation of child rights in human history?

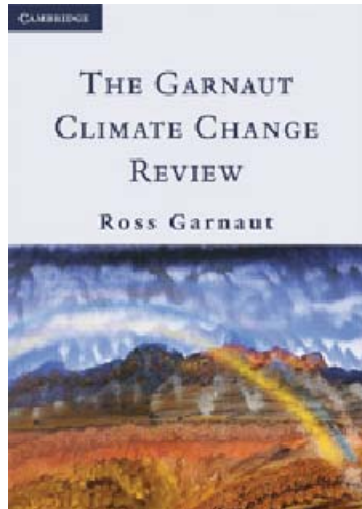
➤ Projections for 5°C

- Chronic droughts in mid latitudes & semi-arid low latitudes
- Hundreds of millions with insufficient, polluted or salty water
- Significant numbers of species extinctions around the world
- Terrestrial biosphere a net source of carbon (warming self-reinforcing)
- Cereal productivity further decreasing at low latitudes
- Greatly increased damage from floods and storms
- Hundreds of millions experiencing coastal flooding each year
- Dramatically increased mortality from malnutrition, diarrhea, tropical diseases, heat waves, floods & droughts
- Likely to trigger irreversible melting of Greenland ice sheet (+ 7 m sea level rise), West Antarctic ice sheet (+ 5 m SLR) & collapse of Atlantic Thermohaline Circulation (Gulf Stream etc)

Australia's Garnaut Report



“On a balance of probabilities, the failure of our generation on climate change mitigation would lead to consequences that would haunt humanity until the end of time.”

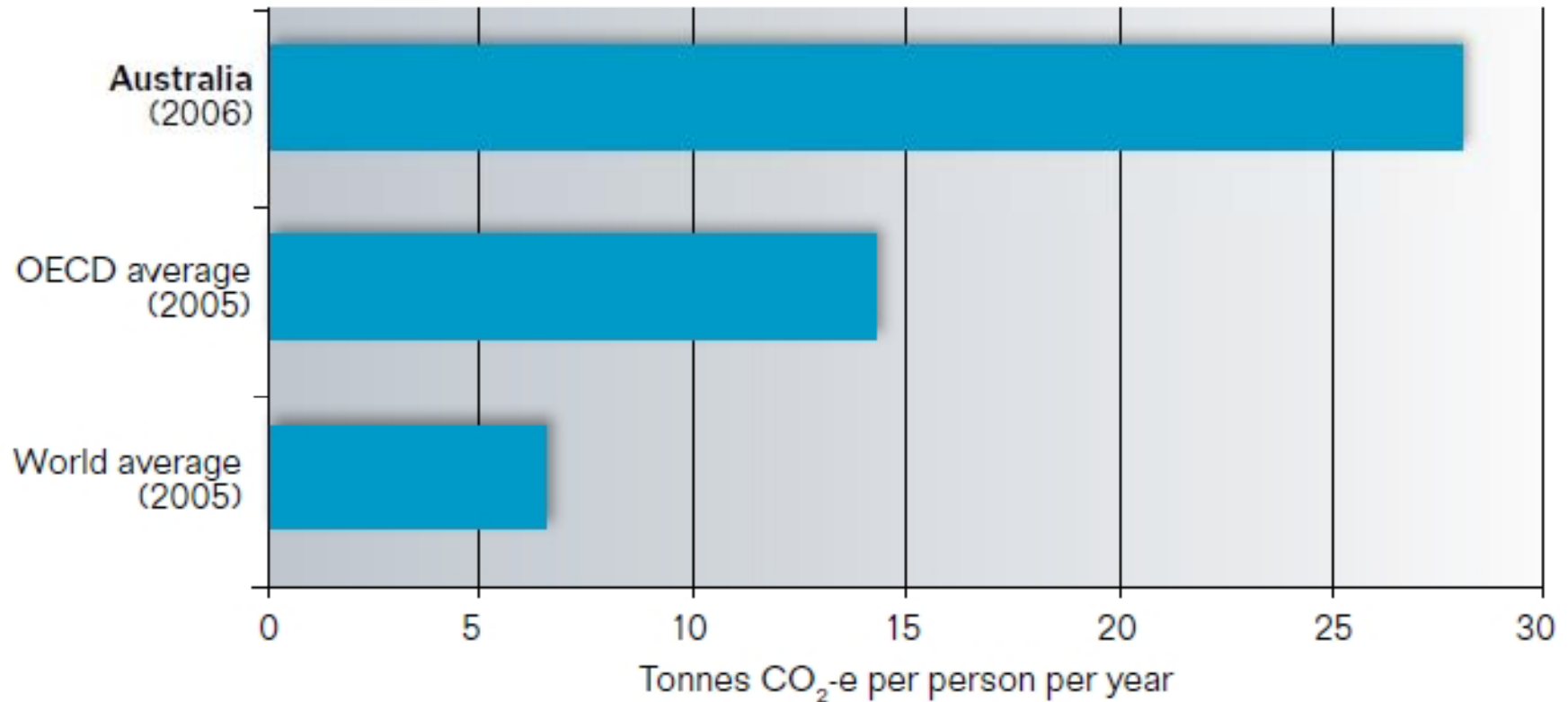


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Australia's emissions per person

Figure 7.1 Per capita greenhouse gas emissions



Source: DCC (2008c); IEA (2007a).

Source: Garnaut, R., (2008) *The Garnaut Climate Change Review: Final Report*, Cambridge University Press, Melbourne, p. 154.

Australia's total contributions

Total GHG Emissions in 2007 (excludes land use change)

CO2

CAIT GHG data are derived from CDIAC, EDGAR, EIA, EPA, Houghton, IEA, and WB.

Country	MtCO2e	Rank	% of World Total	Metric tons CO2e Per Person	Rank
China	6,702.6	(1)	22.70%	5.1	(66)
United States of America	5,826.7	(2)	19.73%	19.3	(7)
European Union (27)	4,064.5	(3)	13.76%	8.2	(39)
Russian Federation	1,626.3	(4)	5.51%	11.4	(18)
India	1,410.4	(5)	4.78%	1.3	(122)
Japan	1,270.1	(6)	4.30%	9.9	(25)
Germany	817.2	(7)	2.77%	9.9	(26)
Canada	583.9	(8)	1.98%	17.7	(9)
United Kingdom	530.2	(9)	1.80%	8.7	(34)
Korea (South)	517.1	(10)	1.75%	10.7	(21)
Iran	512.1	(11)	1.73%	7.2	(47)
Mexico	467.3	(12)	1.58%	4.4	(73)
Italy	461.3	(13)	1.56%	7.8	(43)
Australia	401.1	(14)	1.36%	19.0	(8)
Indonesia	400.4	(15)	1.36%	1.8	(107)

Australia's coal exports in 2007-08: 252 million tonnes (Mt), which produce about 740 Mt CO₂
 Australia's total contribution: 401 + 740 = 1115 Mt (approximately)

FY2009-10: 292 Mt black coal
 = about 858 Mt CO₂

Sources: Climate Analysis Indicators Tool, <http://cait.wri.org/>
 ABARES, http://adl.brs.gov.au/data/warehouse/pe_abares99001762/ACS_2010_part2.pdf

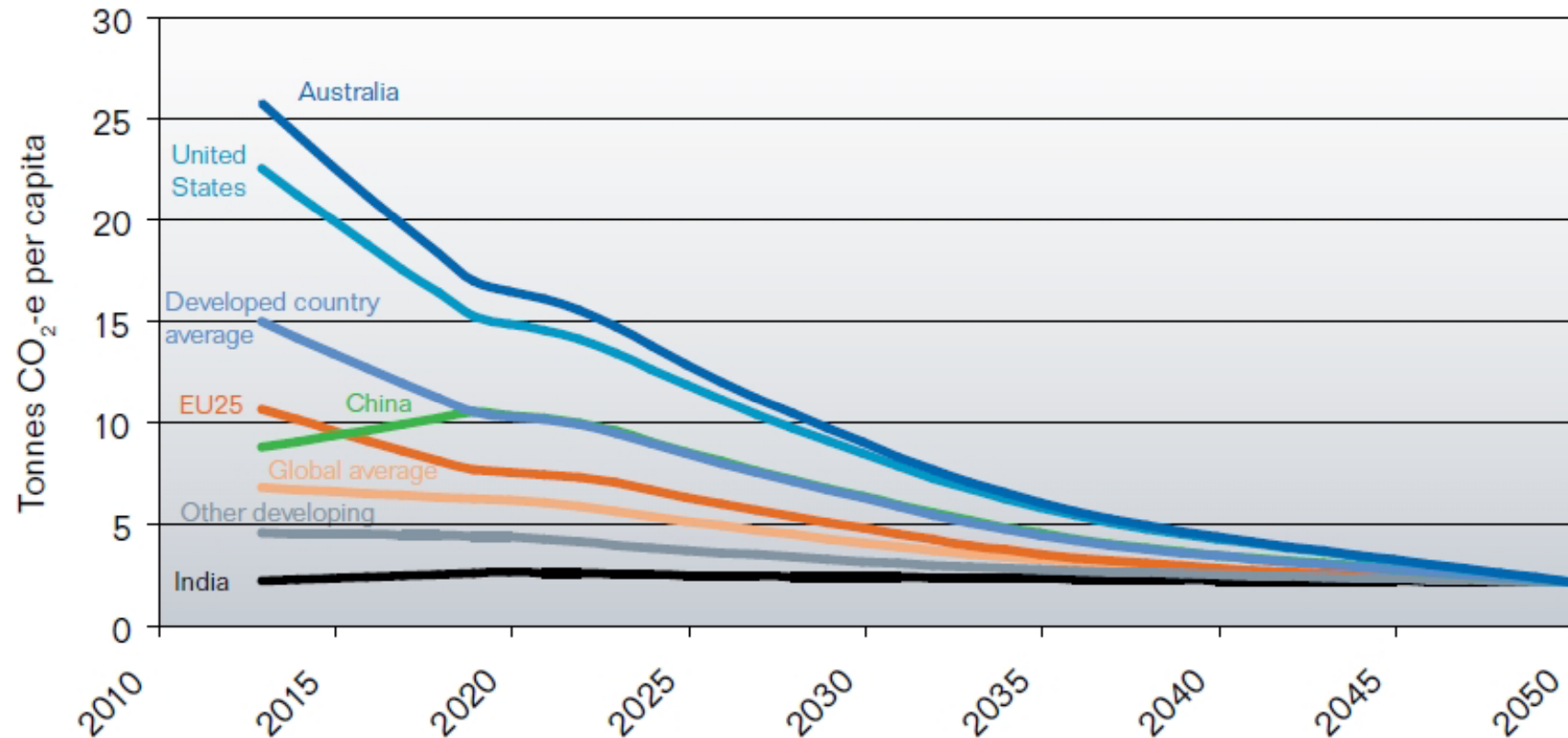
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Preventing very dangerous climate change

(About a 1 in 2 chance of keeping warming under 2°C above pre-industrial levels)

Figure 9.5 Per capita emissions entitlements for the 450 scenario, 2012–2050



Note: The graph starts in 2012. Australia's 2012 starting value assumes Kyoto compliance, as do those for the EU25. Other countries start at their emissions level given by the reference case (the no-mitigation scenario) in 2012.

Q. Wouldn't strong cuts would kill our economy?

Table 1: Australia's emissions and economy

	Reference	CPRS -5	CPRS -15	Garnaut -10	Garnaut -25
Greenhouse gas stabilisation goal, ppm CO ₂ -e	n/a	550(a)	510(a)	550	450
Current levels – at 2008					
GNP per capita, \$'000/person	50.4	50.4	50.4	50.4	50.4
Start of scheme - at 2010 or 2013(b)					
Emission price, nominal, \$/tCO ₂ -e	n/a	23	32	30	52
Medium term – at 2020					
Emission allocation, change from 2000 level, per cent	+40	-5	-15	-10	-25
GNP per capita, \$'000/person	55.9	55.2	54.9	55.0	54.7
Long term – at 2050					
Emission allocation, change from 2000 level, per cent	+88	-60	-60	-80	-90
GNP per capita, \$'000/person	83.7	79.4	78.7	79.1	78.0
Overall mitigation cost, 2010-2050					
Real GNP per capita, average annual growth, per cent	1.2	1.1	1.1	1.1	1.1
Real GDP per capita, average annual growth, per cent	1.4	1.3	1.3	1.3	1.2

Note: Units are in Australian dollars 2005 prices. Emissions in the reference scenario are actual emissions from GTEM.

(a) Assuming comparable global mitigation effort is sustained after 2050.

(b) Emission pricing commences in 2010 in the CPRS scenarios, and in 2013 in the Garnaut scenarios.

Note: Units are in Australian dollars 2005 prices. Emissions in the reference scenario are actual emissions from GTEM.

Source: Treasury estimates from MMRF and MAGICC.

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Who are the extremists?

- Can't say whether a response is 'responsible' & 'measured' as opposed to 'extreme' & 'reckless' without considering **scale** and **urgency** of the threat.
 - Eg. Response to invasion fleet? Is failure to mobilise 'measured & responsible' or reckless?
- Who are the 'extremists'?
 - Those arguing we should consider making a fraction of the effort of the WWII generation to avert a likely irreversible global catastrophe? OR
 - Those content to flip a coin to see how we go with more than 2°C warming? (450 parts per million CO₂-eq path gives about 50% chance of staying under 2°C) OR
 - Those happy to do nothing and chance the luck of their grandchildren with whatever the opposite of an ice-age looks like, with a 4 to 7°C rise?
(5% below 2000 levels by 2020 is on path likely to give 3-4+ °C warming by 2100.
Much more expensive for next generation to rein it in.)

Conclusion: How will we be remembered?

- Under **strongest** government target (24% below 1990 by 2020):
 - “Cost”: 1.1% annual real per capita GNP growth to 2050 instead of 1.2%. So we wait until 2054 to be as rich as we would have been in 2050.
 - Australians on average \$27,600 (or 55%) **richer** than 2008 by 2050



- In 1942-43, a previous generation was spending equivalent to 40% of national income fighting World War II.
- Our leaders are still treating climate change like a moderately significant economic reform, not a national and global emergency.
- Our children and the poor will pay the price.
- Surely we can do better.

Resources

Intergovernmental Panel on Climate Change <http://www.ipcc.ch>

Real Climate <http://www.realclimate.org>

Climate Denial Crock of the Week <http://www.youtube.com/user/greenman3610>

Skeptical science <http://www.skepticalscience.com>

Q&As on climate change <http://tinyurl.com/BPClimateFAQ>

Ian Enting on Plimer <http://tinyurl.com/PlimerErrors>

Climate Action Network Australia <http://www.cana.net.au>

My pages: <http://www.brettparris.com/climate-change/>

<http://www.brettparris.com/climate-faqs.htm>

