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Item Type	Preprint
Authors	Brindal, Emma;Flannery, Wendy;Elvery, Hannah;Kelly, Lana
Publisher	Friends of the Earth Australia
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Download date	2026-07-13 09:15:50
Link to Item	http://hdl.handle.net/20.500.12424/175614



CLIMATE JUSTICE

A Fair Share of the Atmosphere



Contents

Produced by:

Friends of the Earth Australia

2006

PO Box 222 Fitzroy VIC 3065

Climate Justice Guide team and contributors

Emma Brindal, Wendy Flannery, Lana Kelly, Hannah Elvery, Stephanie Long, Cam Walker, Josie Lee, Polly Buchhorn, Pip Starr, Wendy Baxter and various others—thank you.

Coordination by Polly Buchhorn, Public Advocacy and Action Program, Victoria University

Design and Layout by Eirian Chapman and Gemma Field, The Works Design Consultancy, RMIT, Melbourne www.theworksdesign.com.au

Photos

Thanks to Pip Starr (<http://www.starr.tv/>) and Wendy Flannery for Pacific Island photos.

Also Friends of the Earth International (<http://www.foei.org>), Greenpeace Australia (www.greenpeace.org.au), International Federation of Red Cross and Red Crescent Societies (www.ifrc.org) and The Borneo Project (www.borneoproject.org).

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Climate Justice Guide

This guide to Climate Justice is a product of the Climate Justice Campaign of Friends of the Earth Australia and aims to give the Australian public an in depth and up-to-date introduction to the human dimension of climate change.

The Climate Justice Campaign is one of the many national campaigns of Friends of the Earth Australia. Friends of the Earth members from local groups around Australia work locally and nationally on the Campaign as a collective.

To find out more visit the Campaign website http://www.foe.org.au/nc/nc_climate.htm and for breaking information <http://groups.yahoo.com/group/climatejusticetalk>. This Climate Justice Guide can be downloaded from the Climate Justice Campaign website.

Friends of the Earth Australia works towards an environmentally sustainable and socially equitable future using a combination of research, community outreach, direct action, and lobbying, offering positive alternatives and alliances with other like minded groups. It is a federation of local autonomous grassroots groups, and is part of Friends of the Earth International, a federation of such groups in 70 countries.

Friends of the Earth Australia is a signatory to the ACFID Code of Conduct, which sets standards for organizational management, financial management and communication with the public.

Visit the Friends of the Earth Australia website <http://www.foe.org.au>

and Friends of the Earth International <http://www.foei.org>

Or contact

Friends of the Earth Australia
PO Box 222 Fitzroy VIC 3065

Ph: (03) 9419 8700
Fax: (03) 9416 2081
foe@foe.org.au

For more information on the Climate Justice Campaign, contact the Brisbane and Melbourne contacts listed, Friends of the Earth Australia or your local Friends of the Earth group.

National Climate Justice Coordinator.

Emma Brindal
Friends of the Earth Brisbane
294 Montague Rd
West End,
Ph. (07) 3846 5793 / 0411 084 727
emma.brindal@foe.org.au
<http://www.brisbane.foe.org.au>

Climate Justice Campaign
Josie Lee or Cam Walker
Friends of the Earth Melbourne
312 Smith St, Collingwood
Ph. (03) 9419 8700
foe@melbourne.foe.org.au
<http://www.melbourne.foe.org.au>

Local Groups

Adelaide
office@adelaide.foe.org.au
<http://www.geocities.com/olympicdam>

Blue Mountains (NSW)
Ph. (02) 4782 1181

Bridgetown Greenbushes Friends of the Forest (WA)
Ph. (08) 9761 1176

Central Victoria
Ph (03) 5444 4595

Kuranda (QLD)
Ph. (02) 4093 8901
<http://www.foekuranda.org>

Maryborough (QLD)
Ph. (07) 4123 1895

Stawell (VIC)
Ph. (03) 5358 1125

Tasmania
Ph. (03) 6363 5171



INTRODUCTION

More Trouble For The Poor

Climate change is one of the key social justice issues to arise from the consumption and exploitation of the world's resources by rich nations. For the past 150 years industrialised nations have grossly over-consumed fossil fuels, and subsequently produced the majority of the world's greenhouse gases. Currently Australians are consuming carbon resources at a rate approximately 18 times greater than is our fair share. In fact, Australians release greenhouse gases into the earth's atmosphere at one of the highest rates per capita amongst all industrialised countries.

In Australia we tend to take our affluence for granted and seldom stop to think about its price. Its cost though, is falling on the earth's climate; and the consequences are a burden shared by all nations. The impacts are already being felt, including by many of the world's poorest people—those who are least responsible for it. Yet for these people climate change is more likely to be a matter of homelessness, food on the table, sickness and the loss of their livelihoods, land and cultures. Small island nations are some of the first to start paying dearly for our way of life.

Rising sea levels caused by climate change are already creating some of the world's first 'climate refugees' in the Pacific. Currently there is no legal recognition in Australia nor internationally for these people—an issue which must be addressed.

Climate change is also undermining the achievement of the Millennium Development Goals and if serious action is not taken, it threatens to reverse 'development' work done in recent years.¹ The poor in Southern² nations are particularly vulnerable to the impacts of climate change as they live with a close reliance on climate-sensitive natural resources. In addition the capacity to cope with damage to infrastructure by extreme weather events in these developing countries is much lower than in richer nations, with those known as the 'Least Developed Countries' and 'Small Island Developing States' being especially vulnerable. Rapid exploitation and

degradation of natural resources due to rapid urbanization and economic development is also reducing the resilience of many countries to the impacts of climate change.

Meanwhile, as Northern countries move slowly towards renewable technologies, international financial institutions continue to push fossil fuel exports and technology upon Southern countries. This locks them into dependence on polluting technologies, limiting the uptake of clean energies, increasing greenhouse emissions and furthering inequities.

To achieve climate justice, Australians, as some of the world's greatest per capita emitters, must make deep cuts in our emissions by changing our polluting way of life and our nation's greenhouse-intensive economy. We must also assist countries of the South to find low-carbon paths to development, fund adaptation programs, recognise and accept climate refugees and repay carbon debt.

Climate justice ultimately means that all people have the right to an equitable share of the world's natural resources within ecological limits. It is about redressing inequalities of wealth, power and access to the earth's resources.

FOOTNOTES

1. Simms, A., J. Magrath and H. Reid (2004) 'Up in Smoke: Threats From, and Responses to, the Impact of Global Warming on Human Development'. New Economics Foundation, London.

2. 'Southern' or the 'South', and 'Northern' or the 'North', will be used to distinguish generally between impoverished and rich nations of the world. The alternative terms 'Developed' and 'Developing' will be avoided since we challenge the assumption that 'development' is both achievable and desirable.



FoE corporate giant installation
at World Summit on Sustainable
Development, South Africa, 2002.
Image: FoE International

Changing Climate

The earth's atmosphere is a thin and fragile skin of gases that screens out harmful radiation and moderates temperature. Nearly all of the gases are concentrated in the bottom tenth, the troposphere, and is where the weather and earth's climate happen. Making up less than 0.05% of the troposphere are critical protective gases—greenhouse gases, such as carbon dioxide (CO₂), methane and ozone.¹

It is little wonder that today climate change is such a worry. We and other life on earth can not live without this delicately balanced trace of greenhouse gases. Yet over the last 200 years coal, petroleum and natural gas have been the 'fossil fuels' of the industrial and technological age—each year unleashing into the atmosphere carbon that took hundreds of prehistoric years to accumulate. Two hundred years ago the key greenhouse gas CO₂ was present as less than 300 gas

molecules per million (ppm); now it's close to 400 ppm, and rising.² At these higher concentrations CO₂ and other greenhouse gases reflect more and more heat back under the blanket, warming the Earth's surface, seas and atmosphere and altering not only the weather and climate, but also things like the chemistry of the oceans, ice caps, soil reserves of carbon, habitats and lifecycles.

Five years ago the Intergovernmental Panel on Climate Change (IPCC) found greenhouse gas emissions created by humans had already locked us in to global warming which they projected would from 1990 to 2100 cause sea levels to rise by 0.09 to 0.88m and surface air temperature by 1.4 to 5.8°C. This would lead to significant climate change and impacts for the environment, people and their economic systems.³ They warned that impacts increase significantly beyond a global temperature rise of 2°C—impacts including droughts and desertification



South Australia.
Image: Natalie Lowrey

that would threaten global food supplies, forest and habitat dieback, species extinctions, and significant sea-level rise which would damage or destroy the homes of much of the world's population.⁴

Since then scientific research has confirmed climate change as a reality that is observable and of urgent concern.⁵ Rises in temperatures are being confirmed as human induced and increasingly likely to cause dangerous climate change. Ice cores from Antarctica covering past ice ages show we have, since the Industrial Revolution, imposed on the atmosphere greenhouse gas conditions it has not seen in the last 650,000 years. Ocean currents are changing; tropical storms are becoming increasingly intense; ice sheets, glaciers and snow cover are all in unprecedented retreat, exacerbating the sun's heating of the earth's surface and sea-level rise. River flows and rainfall are being affected, drought and flooding are increasing and whole ecosystems are being destabilised on a heating planet.

In just five years it has become more widely accepted by communities, governments and industry that human induced climate change is happening. Science is confirming too the consequences for food, agriculture and health, the risks from natural disasters as well as the possibilities of alternative energy technologies.

It is time to move the debate on.

Historically industrialised countries can be identified as the biggest contributors to the unnatural build up of greenhouse gases.⁶ There is a demonstrable causal link between emissions and economic growth; due to the high rates of production and consumption associated with the latter which involve processes that generate greenhouse gases.⁷ Some governments in Northern nations often attempt to divert attention from this reality and thus diminish their responsibility by pointing to the role of population in explaining recent rises in emissions of some of the large greenhouse gas emitting nations. The realisation that the planet's climate simply cannot handle a universal spread of Northern consumption

patterns or the model of fossil-fuelled economic growth, does not allow industrialised nations to deny their disproportionate responsibility. Rather, it points to the need for more just and equitable grounds for sharing global rights to the atmosphere.

While the atmosphere is universally shared like no other part of the Earth, human induced climate change is attributable to the few who have already 'developed' so far.

FOOTNOTES

1. Flannery, T. (2005). *The Weather Makers - The History and Future Impact of Climate Change*. Melbourne, Text Publishing.
2. Ibid.
3. Intergovernmental Panel on Climate Change (Working Group I). (2001). "Summary for Policymakers (Scientific Basis), A Report of Working Group I of the Intergovernmental Panel on Climate Change." Third Assessment Report. Retrieved 3 December, 2001, from http://www.grida.no/climate/ipcc_tar/wg2/pdf/wg2TARspm.pdf.
4. Flannery, T. (2005). *The Weather Makers - The History and Future Impact of Climate Change*. Melbourne, Text Publishing.
5. Levin, K. and J. Pershing. (2006). "Climate Science 2005 — Major New Discoveries." WRI Issue Brief. Retrieved 22 August, 2006, from http://climate.wri.org/pubs_description.cfm?PubID=4175.
6. Baumert, K., T. Herzog, et al. (2005). "Navigating the Numbers: Greenhouse Gas Data and Climate Policy." Retrieved 1 September, 2006 from http://climate.wri.org/pubs_pdf.cfm?PubID=4093.
7. Baumert, K. and J. Pershing. (2004). "Climate Data: Insights and Observations." Advancing the International Effort Against Climate Change. Retrieved 29 August, 2006, from www.pewclimate.org.



IMPACT

Weathering The Storm

According to the IPCC, the people most at risk from climate change live right on Australia's doorstep, on the small island states of the Pacific Islands—nations such as Tuvalu, Federated States of Micronesia, Samoa, and Kiribati. Despite their rate of greenhouse gas emissions being only one quarter of the global average per person¹ our Pacific Island neighbours are six to eight times more likely to be affected by coastal flooding than us.²

However, climate change will bring many more problems for Pacific Islanders than just coastal flooding. They are already being affected by extreme weather events and broad shifts in climatic conditions that threaten their land and seas, health, food and water supply, infrastructure and economy. These are not simply environmental problems; climate is crucial to social, cultural and economic wellbeing.

Food

As sea levels rise the highest of high tides are increasingly washing over their previous peak heights to flood low-lying coastal villages and the gardens that sustain people with crops of fruit and vegetables. In Tuvalu increased salinity is forcing families to grow their root crops in metal buckets instead of in the ground.³ On the Cateret Islands garden crops were destroyed after tidal waves struck and left pools of salty water inland in 1995⁴ and again in 2003, when the Islanders called for emergency aid.⁵ The salt left behind in the soil makes vegetable gardens infertile—forcing some of the Cateret Islanders to be completely dependent on coconut and fish as food sources. The ocean is the other vital food provider for Pacific Islanders, but by often living close to the shore they are exposed to these flooding tides and stormy seas.

It is also in the sea, in the lagoons, coral reefs and open ocean that global warming is impacting on food supply as sea temperatures rise. Coral reefs are on many islands the basis of subsistence fisheries that feed the people. Rising sea temperatures are blamed for increased incidence of coral bleaching across the Pacific and fishers in Samoa⁶ and elsewhere are noticing the loss of the habitats that support the fish.



Pacific Island women.
Image: Wendy Flannery

Water

Like Australia the Pacific Islands are also influenced by El Niño (or the Southern Oscillation (ENSO) phenomenon) and Papua New Guinea, the Federated States of Micronesia, Marshall Islands and Fiji have experienced droughts and water shortages as rainfall patterns have become more variable.⁷ Unreliable rainfall has become problematic for the small island states such as Tuvalu, Kiribati and the Cook Islands which tend to rely on rainwater for their supply of water. In many places, particularly low coral atoll islands, freshwater comes from a thin layer of fresh groundwater that floats atop a saltwater lens. Falling rates of rainfall, flooding high tides and rising sea levels all threaten such groundwater sources.⁸

Health

“Climate variability and climate change can harm human health both directly and indirectly.”⁹ An increased likelihood of extreme weather, such as cyclones and floods, will have direct impacts on Pacific Islanders lives. A more indirect effect of climate change is the spread and development of disease. Warmer temperatures lead to increased incidence of malaria and there have been reports of this disease in the highlands of Papua New Guinea and Solomon Islands, which previously were too cold for mosquitoes to survive. The incidence of diseases like cholera, dengue fever, water-borne giardia and toxic algal blooms, and salmonella and other food-borne diseases may also be increased.¹⁰

Women bearing the brunt of Climate Change

Women are more vulnerable to the impacts of climate change, partly because they comprise 70% of the 1.3 billion people living below the poverty line in Southern nations.¹¹ It is also due to women’s greater reliance on natural resources for their own livelihoods, and because their household roles often involve collecting firewood, forest products and water for their family. In addition, changes in climate frequently bring about migration, with males leaving their wives at home. These female-led households are often the poorest in their communities and the women left behind face significantly increased workloads.

Women often have less access to information and resources which increases their sensitivity to changes in climate and disasters. In Bangladesh in the floods of 1991, among women aged 20–44, 71 women per 1000 died compared to 15 men per 1000 in the same age group. This is because men had access to information in public spaces which was not transmitted to other family members and also because women were not allowed to leave the home without a male relative, resulting in many perishing while waiting for help.¹²

In the municipality of La Masica in Honduras, six months before Hurricane Mitch struck in 1998, gender-sensitive community education had been carried out by a disaster agency. The community decided to involve women and men equally in all hazard management activities. As a result, the community was able to evacuate the municipality quickly and unlike many other communities in Honduras, there were no reported deaths in La Masica.

To date, there has been very little consideration of gender issues in climate change discussion and projects, partly due to lack of participation of women in decision-making. Clearly this must be addressed so that women are better equipped to adapt to the impacts of climate change.

Infrastructure and Land

For island states coastal areas are a significant component of their land areas and a necessary location for settlements and productive land use. This makes their precious roads, ports, power and communications systems and buildings vulnerable to shoreline attack by an ocean responding to climate change. For example in Majuro, the capital of the Marshall Islands, sea walls have been constructed to try to protect existing infrastructure and halt the impact of erosion.¹³

Previously attributed to coastal development, coastal erosion is now increasingly exacerbated by storm and wave action and means the islands themselves may shrink or disappear. Moreover, coral reefs provide natural protection from storm surges and king tides, but are threatened with coral bleaching due to rising sea temperatures. There have been reported losses of sandbanks and shorelines in Tuvalu (the motu of Tepuka Savilivili), and in the Carteret Islands since the 1960s. Some islands in Fiji have retreated 30 metres in the past 70 years¹⁴ and, the motu of Tebua Tarawa in Kiribati, once a landmark for fishermen, is under water.

Economic Impacts

Changing rainfall patterns and an increased frequency and intensity of extreme weather expected with global warming will affect agriculture, forests and fisheries for a prolonged period. Droughts, linked to El Nino, have hit important export crops in the Federated States

of Micronesia, Fiji, the Marshall Islands, Papua New Guinea, Samoa and Tonga. As the contributions of primary production and subsistence production are undermined secondary and service industries will suffer.

Tourism is one important sector of Pacific Island economies that benefits many visiting Australians too, but will also suffer if coral reefs are bleached dead, tropical disease risks rise and coastlines disappear.

The economies of small island states will also struggle with the cost of climate change adaptation and mitigation and the repair of damaged infrastructure. For instance, atolls in the Marshall Islands are facing coastal erosion, but the costs of preparing sea walls and preventative measures are enormous—over US\$100 million for Majuro alone, which is one of 22 inhabited atolls.

Positive Future

While being low and surrounded by a rising ocean makes the future of Pacific Island states seem bleak, many communities are however hopeful that they can adapt to climate change and its effects without losing their cultural and national identities. In Tuvalu a renewable energy program using biofuels, wind, sun and seas, is being developed.¹⁵ The Assistant Minister for the Environment, Paani Laupepa says “We want to put our money where our mouth is—when we say renewable energy, climate change, we’re serious about it, and we want to demonstrate our seriousness by removing diesel completely.”



FOOTNOTES

1. Lefale, Penhuro. 2002. 'Impacts of Climate Change on Pacific Islands' in Pacific Ecologist 1
2. Friends of the Earth. 2005. A Citizen's Guide to Climate Refugees.
3. The Canary is Drowning Tom Price 11/12/02, <http://www.guerillanews.com/globalization/doc891.html>
4. Climate Change in the Pacific. Talk by Nic Maclellan at Climate Justice forum in Melbourne, Australia 21 March 2001
5. See media posting on CANA website June 2003 <http://www.cana.net.au/canarycalls/issue1.html>
6. "Rising Waters" video www.itvs.org
7. Pers com Jim Salinger, Senior Climate Scientist for National Institute of Water & Atmosphere Research Ltd (NIWA)
8. Jon Barnett and Neil Adger, Climate Dangers and Atoll Countries, Tyndall Centre for Climate Change Research, October 2001, Working Paper 9
9. Commonwealth Scientific and Industrial Research Organisation (CSIRO). (2001). "Climate Change Impacts for Australia." Retrieved 13 April, 2001, from <http://www.dar.csiro.au/publications/impacts2001.pdf>.
10. AMA 2005. [http://www.ama.com.au/web.nsf/doc/WEEN-6HA6MS/\\$file/Climate_Change_Impacts_Health_Report.pdf](http://www.ama.com.au/web.nsf/doc/WEEN-6HA6MS/$file/Climate_Change_Impacts_Health_Report.pdf)
11. Simms, A., J. Magrath and H. Reid (2004) 'Up in Smoke: Threats From, and Responses to, the Impact of Global Warming on Human Development'. New Economics Foundation, London. http://www.foei.org/publications/pdfs/up_smoke.pdf
12. Aguilar, L. (2004) 'Climate change and Disaster Mitigation'. The World Conservation Union (IUCN), Gland, <http://www.iucn.org/congress/women/Climate.pdf>
13. "Climate Dangers and Atoll Countries" Jon Barnett and Neil Adger, Tyndall Centre for Climate Change Research, October 2001, Working Paper 9.
14. "The Canary is Drowning" Tom Price 11/12/02, <http://www.guerillanews.com/globalization/doc891.html>
15. Micro Model Renewable Energy project in Tuvalu http://www.alofatuvalu.tv/US/o6_micromodele/page_o6_us.html

Garden site lost to flooding high tides.
Image: Pip Starr



Climate Justice in Australia

Climate change presents an opportunity for Australians to recognise some of the political, economic and resource inequities within our borders and proudly participate in creating a fair and sustainable Australia.

On a planet where climate change is now hard to ignore the important questions turn to those suffering most and likely to suffer in the future. How and why are these people at risk and what can we do about it?

Friends of the Earth Australia is concerned that Australia's low-income earning and marginalised communities are expected to be most affected by climate change. Limited capacity and resources in these communities will make it hard for them to cope with and adapt to climate change. Amongst these are the Aboriginal and Torres Strait Islander peoples who are marginalised and have disproportionate economic, health and other problems.

In addition our farming and rural communities are vulnerable; our cost of living, health, employment and housing are threatened and insurance, tourism and many other industries are in jeopardy. Furthermore, the extremes and uncertainties of climate change will make it hard to plan a secure future for our communities.

Agriculture, Food and Water

Farmers and rural communities are directly dependent on the climate for their livelihoods and security—it is no wonder they will be some of the most affected by climate change. In Australia climate change is projected to cause overall lower rainfall and higher temperatures. This is likely to lead to further water restrictions and drought, particularly in southern parts of Australia. Such conditions will cause a reduction in food production in many areas, with flow on effects of farm-failure and decline in rural communities. Since the remoteness of rural communities in Australia already creates problems in relation to access to services and adequate employment, the financial and social resilience of these communities could experience compounding strain.

Additionally, prices of food and fresh water are likely to increase due to global food and water insecurity and declines and uncertainties in crop and cattle production. Low-income earners would least be able to withstand the financial pressures and be first to suffer nutritional problems from food scarcity and cheap low-quality, processed options.

Disease and Health Problems

Predicted temperature rises due to climate change over the coming years will result in the increased spread of water-borne, food-borne and insect-borne diseases in Australia. Increases in salmonella, ciguatera and dengue fever are some of the diseases projected to spread and affect mostly northern regions of Australia and many Australians, particularly Indigenous people in tropical and sub-tropical areas. However, increases in vector-borne diseases are expected in southern regions too; dengue fever for instance is projected to spread as far south as Sydney by 2100.¹

The tropical storm zone of Australia is also projected to spread southward, bringing climate chaos as projected increases in the intensity and number of severe storms causes injury, death, and destruction of homes and livelihoods. As tropical cyclone Larry recently demonstrates the brunt of these impacts would be felt in northern parts of Australia, particularly amongst farmers, rural and indigenous communities.

Increasing temperatures will also increase heat stress and, as demonstrated by the high fatalities and hospitalisations during the European heatwaves of 2003, the elderly and young are most at risk during weather extremes, due to physical inability to regulate body temperature.

Housing and getting by

Greater risk from bushfires, high winds, heavy rainfall, sustained heat waves, sea-level rise and storms will cause significant damage to housing and infrastructure. People who rent or who live in impermanent, insecure, inadequate housing or are homeless and who are on average to low incomes will feel colder in winter and hotter in summer without the money to insulate, heat, cool and repair their homes. In some Aboriginal and Torres Strait Islander

communities, 31% of their dwellings were found to be in need of major repair or replacement.² This, along with higher rates of poverty, means they are more likely than other Australians to find it hard to deal with storms and heatwaves.

In a compounding of the problem, damage to our towns and settlements will erode electricity, petrol, food, transport, water, communications and other services. Rising prices will increase the cost of living and with local business and industry also hit, jobs and income will suffer, making it even harder to endure the impacts of climate change.

Where to from here?

Our actions today are what will determine the future. There can be no alternative to dealing with the threat of global catastrophe. We already have the capacity and many options for reducing greenhouse gas emissions and adapting to the consequences of climate change, but few are being pursued by government.

We have a voice to express our values and we can organise. We can reclaim the value of mateship as our own again, by dealing authentically with the inequities that exist in Australia, inequities that are likely to be deepened by climate change if we don't take adequate action.

It is those who have contributed least to greenhouse gas emissions who tend to be most vulnerable to its consequences. For those who will suffer most—the poor and vulnerable in all countries—justice demands we take action now.

FOOTNOTES

1. The Allen Consulting Group (2005), Climate Change: Risk and Vulnerability - Promoting an Efficient Adaptation Response in Australia - Final Report, March 2005, Report to the Australian Greenhouse Office, Department of the Environment and Heritage, Available from: <http://www.greenhouse.gov.au/impacts/publications/risk-vulnerability.html>

2. Australian Bureau of Statistics, (2001), 4710.0 - Housing and Infrastructure in Aboriginal and Torres Strait Islander Communities, Australia, 2001. Available from: <http://www.abs.gov.au/Ausstats/abs%40.nsf/e8ae5488b598839cca25682000131612/075a7d64c769ee67ca2568ce00037c69!OpenDocument>

Islanders Under Threat

Tuvalu is one nation that is likely to be submerged completely, possibly within the next fifty years. With an area of 26 square kilometres and standing on average just 2.5 metres above sea level, its 11,810 people¹ are extremely vulnerable to the effects of climate change. Some of these changes are already being felt in the communities.

In 2004, Stephanie Long interviewed Annie Homasi, the Coordinator of the Tuvalu Association of Non-Government Organisations (TANGO), about climate change and what it is like to live on a small island:

Stephanie: Can you see any evidence of global warming occurring around you?

Annie: Over the past ten years people have noticed that it has become very, very hot in Tuvalu; this needs to be clarified by science as to whether it is a result of climate change. There have also been changes in weather patterns – at this time of year there are generally strong winds, but they are not now. These changes are surprising to most people.

Stephanie: What are the impacts of climate change that are affecting people in Tuvalu?

Annie: It is believed through anecdotal evidence as observed by the community that the sea-level has risen about one centimetre over the past decade. Others say the sea-level has risen as much as ten centimetres in the past ten years. My own experience is that during spring tides in March, my house foundation is now half in the water. This is what I have seen and based on my own markings of the water level at my house.²

The people of Tuvalu have a little time left before they are forced to move, leaving behind the land their ancestors have lived with and on, for 2000 years. For other people in the Pacific however forced relocation is arriving much sooner.

The inhabitants of the Carteret Islands in Papua New Guinea are already in the process of being relocated as salt water intrusion and increasing erosion have made the islands uninhabitable. In 2002, Joseph Molocai commented on life in the Carteret Islands:

“The wild taros, the greens, the breadfruit, they don’t grow anymore. We just got coconuts and, when we can catch them, fish. All the gardens are spoilt. When the high tide comes in, all the saltwater goes in the gardens.”³

Irrespective of other possible factors in the Islands plight, climate change caused by others looks to be the last straw. Two of the Carteret’s uninhabited islands disappeared in 1999 and with the entire group of islands predicted to be submerged by 2015, residents are being moved to Bougainville as they watch the Pacific Ocean reclaim their land.⁴



Pacific Island jetty.
Image: Wendy Flannery



Carteret Islands village.
Image: Pip Starr

The increasing intensity of tidal events, storm surges and other extreme weather patterns are also affecting the lives of people in the Torres Strait.⁵

Those on Masig Island had waves surge fifty metres past the beach in 2006, the most recent of a two year long period of repeated flooding. This has resulted in some families deciding to move to the hills further inland, a move no longer just precautionary, but necessary. Residents of Saibai, another low-lying island in the Torres Strait are also experiencing increased flooding, with streets flooding more often despite a long sea wall designed to prevent them. This sign hammered into a palm tree on the island sums up the locals' fears⁶

"Urgent. To the leaders of this community, please HELP ME, I'M SINKING
To the community, please PRAY FOR ME"

For mainland Australians, how we respond to the troubles of Torres Strait Islanders raises an equity dilemma, since their fellow islanders further out in the Pacific are facing the same threats.

Evacuation begins Next Year ⁷

Climate change is already affecting the Carteret Islands, six small islands of sand 1 metre above high tide 120 km north east of mainland Bougainville. Pip Starr recently visited to investigate.

“When I was a small boy this island was big”, explains Jacob Tsomi, chief of the Dog Clan, whose land includes Huene.

“As I grew older the Island was getting smaller, and as you can see now the island is broken and is now in two pieces. The sea is eating the island away, and you can see how the beach is littered with fallen coconut palms. The sea has eaten the land out from under them and the land is getting smaller.”

“The sea rise is causing a lot of inconvenience on the island. The island’s getting smaller, and very soon it’s completely going to go. In 30 years time these islands may not be here.”

All six islands have been damaged. Iagain island (pron. young-ine) has been completely inundated to a depth of about half a metre every second year. There are no crops grown at all here anymore, but there is plenty of brackish water that settles in permanent swamps. Fresh water is collected from rain, since the wells have become saline. Several times I saw men lying sleepy and inert outside houses in the village on Iagain. At first I thought they were drunk, until someone explained that it was malaria. It was once a seasonal affliction, but since the swamps became permanent, so do the mosquitoes.

The people of the Carterets don’t drive cars. Even if they could afford them there wouldn’t be much point. With the possible exception of Han, all the islands can all be crossed in the time it takes to make a cup of tea. Between the islands they mainly use dugout canoes.



There is no electricity on the islands, except for the generator that fires up the DVD player a couple of times a week to show Hong Kong action films. There are no shops of any sort on the atoll. Fish and coconuts dominate their diet. Beyond some cooking pots and utensils, second hand clothes and the occasional cassette player there are few other signs of modern consumer society.

It would be a sad irony if these people, whose carbon footprint must be as low as any in the world, were to be the first to abandon their islands because of rising seas attributable to global warming.

The question of relocating to Bougainville Island has been a community issue since the 1980s when erosion of island shores was noticed. With the atoll not expected to exist much beyond 2015, much less support its inhabitants, the situation has become critical.

“I’m looking at a time sooner rather than later,” Minister Taehu Keali Pais from the Autonomous Bougainville Government says.

“The situation now is getting worse than people thought it would be. I’d like to see some families relocated by January. This will help us to minimize what it is costing us,” he said, referring to the emergency relief.

Not everyone is prepared to abandon their island homes. Bernard Galie who lives on Piul (rhymes with fuel) is one; when we spoke, his anger was palpable.

“We are frustrated, and we are angry at the same time. We are victims of something that we are not responsible for. We believe that these islands are ours, and that our future generations should not go away from these islands. I think it’s about time these industrialized countries

realized that these island countries in the Pacific are taking the toll. We are bearing the brunt of all these gas emissions. Millions and millions of dollars are spent on wars all over the world. Can they save people like ourselves?”

Bernard believes they should not be expected to move, but should be compensated for the damage done, and he doubts that a relocation would succeed.

In a tense situation, the Carteret Islanders fear a still unstable political situation on the mainland of Bougainville, while the people of mainland Bougainville fear they will take their land when relocated.

The Carteret Islands are making history as some of the first Pacific atolls made uninhabitable by global warming. If predicted impacts of climate change by the mid century

alone come true, then climate refugees will become a widespread global phenomenon, not just in the small numbers on the Carterets, but in their millions, as other islands, river deltas and low lying coastal regions become inundated. At that scale the problem will be felt well beyond the borders of the disappearing homelands of the climate refugees.

“We live in a most difficult situation,” says Bernard Galie. “We are taking the brunt. We are victims of these greenhouse gas emissions, of the pollution made by industrial countries. We are victims of something we are not responsible for.”

Pip Starr



Huene Island cut in two.
Image: Pip Starr



Coconuts succumb to the sea,
Carteret Islands.
Image: Pip Starr

Climate Refugees

Climate change may be a distant threat for some, but for people of the Pacific Islands and the Torres Strait, it is a harsh and immediate reality.

Unprecedented and widespread changes are already being felt and reported from islands around the world by next year, but king tides that surge fifty metres past the beach are just a taste of the weather changes and impacts to come for inhabitants of the Pacific Islands and Torres Strait. As traditional lands change and disappear forever, the social fabric of communities and cultures are also at risk. The cultures of the Pacific Islanders are some of the most diverse and rich in the world. It will be an uphill battle for Islanders to survive if communities are scattered via resettlement to other countries or islands less vulnerable to climate change.

Unfortunately this is a likely scenario. Many more islanders are facing a similar situation to the Carteret Islanders and Tuvaluans as climate change becomes too much for both environmental and social systems to cope with. It seems inevitable we will see these people become climate refugees because of climate changes we are much more responsible for than them.

At present there is no international recognition for climate refugees, nor is there recognition for them within Australia. In fact, when in 2001 the Tuvaluan government appealed to the Australian government to accept half of its population in the event that evacuation would be essential, it cold-heartedly refused, stating that climate change science was too uncertain to warrant a change in our

migration policy. The New Zealand government, on the other hand, accepted and following Australia's refusal agreed to take the whole population of approximately 11,000 people. Senior Tuvalu official, Mr Paani Laupepa expressed that while New Zealand is helping out their neighbours, "Australia on the other hand has slammed the door in our face".⁸

In 2001 an immigration deal between the governments of Tuvalu, Fiji, Kiribati, Tonga and New Zealand was created.⁹ This Pacific Access Category (PAC) allows a quota of 75 residents each year from Tuvalu and Kiribati, while Tonga and Fiji have a quota of 250. However, Pacific Islanders still face a number of impediments to reaching safer ground.

Principal applicants must meet set requirements before being eligible to enter the PAC ballot. These requirements exclude parts of the population by stipulating that they: are aged between 18 and 45; have an acceptable offer of employment in New Zealand; have a minimum level of skills in English language; and have a minimum income requirement if the applicant has a dependant.¹⁰ In short, this means that the elderly and the poor—those most vulnerable—are likely to have difficulty being accepted as principal applicants.

Australia still refuses to recognise climate refugees.¹¹ The Climate Change and Development Roundtable group recently recommended it would be prudent regionally for Australia to act urgently on climate change. This conclusion followed findings of the CSIRO, in a recent report the group commissioned, that suggest the consequences of climate change for populous and small island nations in our region pose a threat to our own economic and social security.¹²

Friends of the Earth is a member of the Climate Change and Development Roundtable group, and believes that beyond a self-interest we have a moral duty today to acknowledge climate refugees and welcome them in

Australia. If action is not taken now to significantly reduce greenhouse gas emissions, and help island communities adapt to the already inevitable results of climate change, many more will lose their livelihoods, communities and homes.

FOOTNOTES

1. Wikipedia. 2006. 'Tuvalu'. Accessed 22 August 2006. <http://en.wikipedia.org/wiki/Tuvalu>
2. Lefale, Penhuro. 2004. 'Life on a Small Island' in Chain Reaction 90
3. Robers, Greg. 2002. 'Islanders Face Rising Seas with Nowhere to go'. Sydney Morning Herald 30 March 2002
4. Wikipedia. 2006. 'Carteret Islands'. Accessed 22 August 2006. http://en.wikipedia.org/wiki/Carteret_Islands
5. Minchin, Liz. 2006. 'Not Waving, but Drowning at our Back Door'. The Age 12 August 2006
6. ibid
7. Pers. Comm. Pip Starr. <http://melbourne.indymedia.org/print.php?id=123469>
8. The Australian Institute, Screw you Tuvalu, Media Release, October 14, 2001, http://www.tai.org.au/MediaReleases_Files/MediaReleases/MRScrewTuvalu141001.htm
9. Tuvalu premier gets sinking feeling over immigration deal with New Zealand, Tuvalu News, AFP, May 6, 2004, <http://www.tuvaluislands.com/news/archives/2004/2004-05-06b.htm>
10. New Zealand Immigration Service, Registration Form for Pacific Access Category, <http://www.immigration.govt.nz>
11. Australian Climate Change and Development Roundtable. (2006). "Climate Change and Development Roundtable." Retrieved 9 October, 2006, from <http://www.ccdr.org.au/>
12. Eastly, T. (2006). Minister defends climate change aid program. AM. Australia, ABC Radio <http://www.abc.net.au/am/content/2006/s1758381.htm>

Carbon Debt and Climate Change

When tropical hurricane Mitch ripped through Central America in October 1998, destroying most of the GDP of Honduras, killing well over 10,000 and displacing 1.2 million people, some green groups suggested that this was the beginning of climate change fuelled events, and called for hurricanes to be named after oil companies. This was seen by many as being premature, that climate change was still somewhere over the horizon. Yet, in less than a decade, scientific opinion has shifted substantially and in the popular realm climate change has gone from being scientific theory to accepted fact.

With this awareness follows a realisation that there is a limit to what the atmosphere can sustain and that it is the lifestyles of people in rich Northern nations that have driven climate change, while others, the Majority World or Global South, are bearing the brunt, without having created the problems themselves.

More than 80% of human induced warming so far has been caused by emissions from the North which is still producing more than 60% of human created greenhouse gases being released into the atmosphere, despite only having roughly 25% of the world's human population. In contrast, the poorest 20% on the planet only produce 2% of emissions.¹ A key point here is most past emissions of greenhouse gases came from the industrialisation of the North that grew their economies and delivered the high consumption lifestyles now taken for granted. This same wealth and development now provides the resources and infrastructure that means the North will be best able to cope with the impacts of global warming in coming years.

Not only can Southern nations now find it difficult to cope with climate change, but the greenhouse gas problem also poses a barrier to their future growth and development—growth and development Northern nations enjoy already, and at the expense of the atmosphere and its capacity to support life on earth equitably. In terms of the carbon based energy that has to date powered such development, this is the carbon debt owed to the Southern nations by the North.

Despite the industrialisation and rising greenhouse gas emissions currently occurring in rapidly industrialising Southern nations like China, Northern countries (including Australia, Western Europe, and North America) continue to be the major cause of greenhouse pollution. Added to past emissions current activity in the North means the carbon debt owed to the other peoples of the planet continues to grow.

Justice for this debt must be at the core of our response to global warming. To be effective in a world with enormous (and growing) gaps between rich and poor, multilateral negotiation and treaties on climate change must enshrine a rights-based approach and be focused on per capita emissions targets to limit the levels of greenhouse gases that can be created. This is at odds with the 'business as usual' approach to tackling global warming favoured by many governments and corporate players, which assumes current production and consumption rates and lifestyles can continue, as long as we pay for reduced emissions through improved technology and buying 'cleaner' products, or simply off-set our emissions by buying carbon credits on international markets.

Colonialism and Its Ecological Debt

The North's carbon debt is a part of a wider ecological debt. Since the time of Christopher Columbus the New World has been drained of resources, materials and commodities by their flowing to the people and economies of the Old World, today's North. While we live in an era seemingly far removed from colonial times, there can be little doubt that the structures and relations created in those times persist in the situation we find ourselves in, of the South financially indebted to Northern nations, unfair trading relations and great disparity between rich and poor.

This North–South relationship and ecological debt must be seen in a new light on a warming planet. With the advent of climate change whole economies in the South have been devastated, whether through floods

Top:
FoE International 'lifeboat'
makes its way through the
streets of Bonn during climate
negotiations in 2001.
Image: FoE International

Bottom:
Image: FoE Melbourne



in Mozambique, hurricanes in Latin America, or uncontrollable fires in Indonesia. At the same time, unlike Northern nations, the Global South lacks the safety nets of insurance and budgets in surplus and emergency infrastructure that allows a rapid response and a return to normalcy after climate disasters. So on top of losses to storms and floods and the lack of capacity in emergency, impoverished nations face the prospect of borrowing more money from those who have produced most of the greenhouse gases and colonised their ecological resources in the past.

It should also be remembered that most Southern countries are locked into repaying external debt and are driven to exporting natural and human resources to generate currency, often without proper benefit retuning to local economies. Many problems, environmental and social, are created and remain in the country of origin during this process while consumers in Northern countries get cheap timber, beef, gold, coffee and other commodities. International Monetary Fund and World Bank 'structural adjustment programs' have been imposed as conditions of financial support from the North. Forced privatisation of public utilities and austerity measures in the last few decades have led to the loss of public infrastructure that is a vital buffer against natural disasters, and the encouragement of economic specialisation may prove disastrous with a warming climate.

To make amends our response to climate change must include a commitment to global equity and genuine resource and technology sharing, aid and reconstruction.

FOOTNOTES

1. Lammi, H & Tynkkynen, O (2001); The Whole Climate. Climate Equity and its Implications for the North. Friends of the Earth Finland.

Ecological Footprints in the Atmosphere

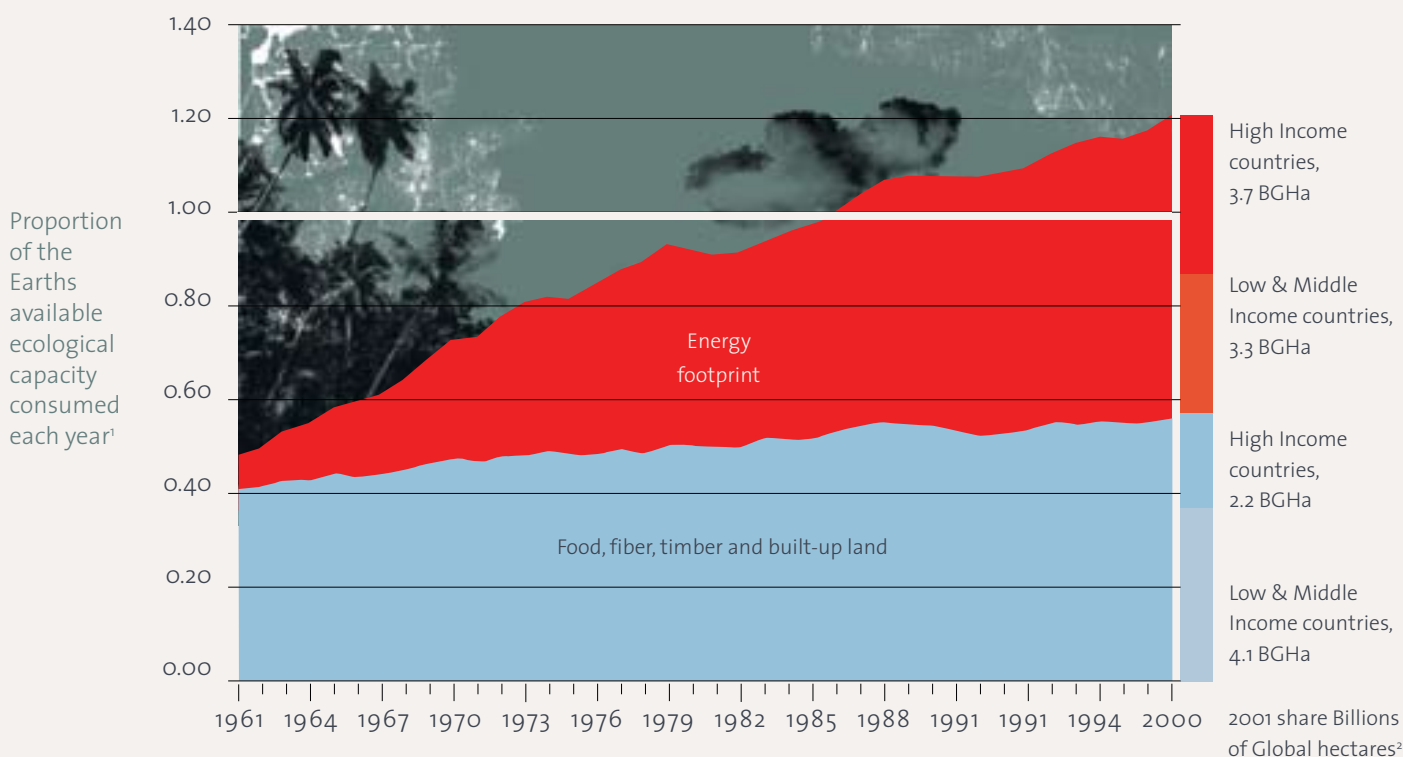
Ecological footprint analysis seeks to quantify ecological sustainability by accounting for our consumption of natural resources in terms of *global hectares*. This is the equivalent area of land required to produce food and goods, deal with waste—including carbon dioxide emissions—and provide space for infrastructure. By calculating the total capacity of the earth in the same way these measures can be compared.

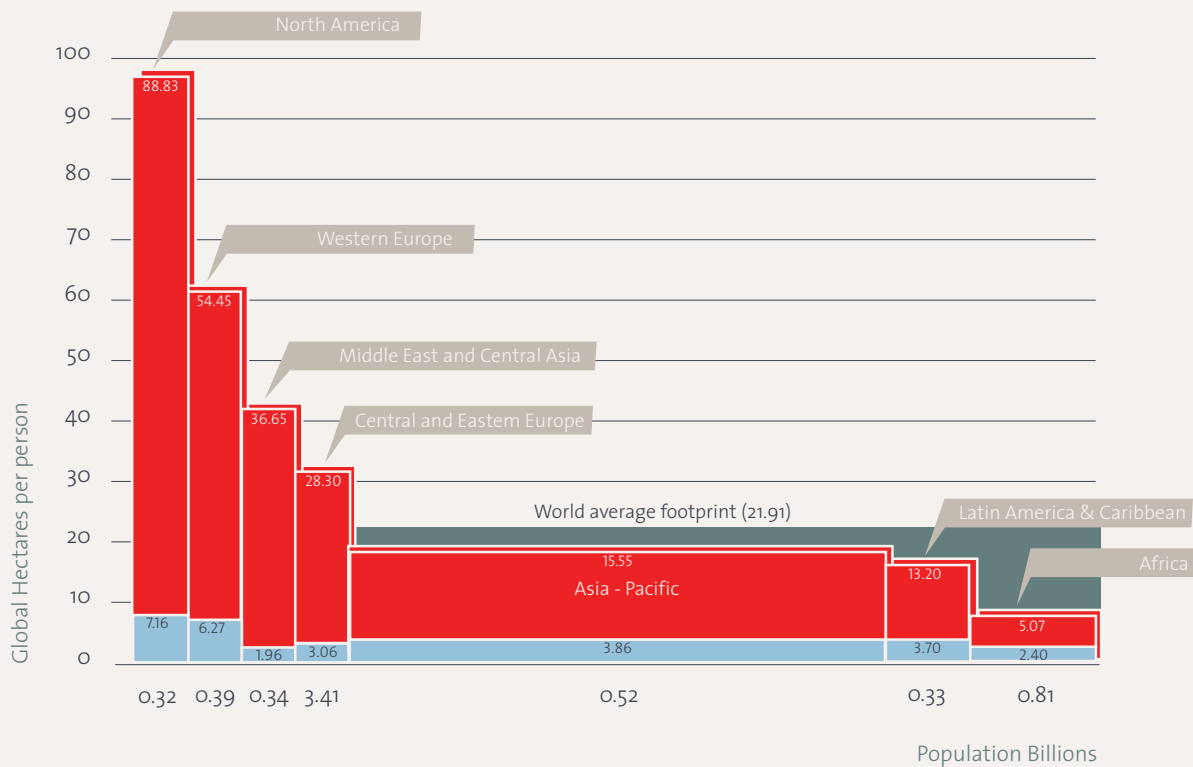
Since the 1980s more than the available biological capacity of the earth has been consumed globally each year.²

The unsustainability of present use of the planet is represented by the overshoot beyond the limit of the one planet we have; living beyond our means leads to ecological debt and ultimately ecological breakdown. And it is the footprint of energy—including the CO₂ from fossil fuels, fuel-wood, nuclear power and hydroelectric—that has burgeoned in the last 40 years.¹

It is rich countries though who bear most responsibility for imperilling the whole planet by taking it over the one-planet line. High income countries represent just 15% of the world's population, yet they were responsible for 45% the total ecological footprint in 2001.²

World Ecological Footprint





Ecological Footprints in the Asia Pacific Region 2001¹

Within the Asia-Pacific region we Australians set a poor example of the fair go. In 2001 the average per capita ecological footprint for each of the 19.4 million of us was by far the largest in the region at 79 global hectares (GHa), more than 90% of which was due to our energy use.²

Japan was next largest at 53 GHa and then New Zealand at 48.5 GHa. After the Koreans, Malaysia, Mongolia and Thailand comes China, 1.3 billion people who each used 12.5 GHa, less than a sixth of the footprint of Australians. Our 214 million Indonesian neighbours each used 8 GHa, while the 1 billion people of India had a footprint of 4.8 GHa.

Many of the 140 million people of Bangladesh live on the Ganges Delta where they are some of the most vulnerable to climate change impacts. With a per capita footprint of just 2.3 GHa (55% of which was due to energy use), they have a good reason to question the share of the region's biocapacity Australians consumed.

Ecological Footprints of World Regions 2001

The previous chart showing the generation of excess is based on ecological footprint analysis that excludes three quarters of the planet with low biological productivity (such as deserts, ice caps, and the deep oceans) and understates the energy footprint by discounting annual absorption of 1.8 Giga tonnes of carbon by the deep oceans.³

In this block diagram a different ecological footprint model was used that includes all the earth's surface and sets aside a portion for other life on the planet. Energy is a much larger part of the ecological footprints in this data.⁴

The unequal use of the earth's resources between the North and South is shown by comparing the average 'global hectares' each person uses in a year and the populations of the world's regions.

Within the Asia-Pacific region we Australians set a poor example of the *fair go*.

FOOTNOTES

1. World Wide Fund for Nature, Global Footprint Network, et al. (2004). "Living Planet Report 2004." Retrieved 1 September, 2006 from <http://assets.panda.org/downloads/lpr2004.pdf>.

2. Venetoulis, J. and J. Talberth. (2005). "Ecological Footprint of Nations: 2005 Update." Sustainability Indicators Program Retrieved 28 August, 2006 from: <http://www.ecologicalfootprint.org/pdf/Footprint%20of%20Nations%202005.pdf>.

3. World Wide Fund for Nature, Global Footprint Network, et al. (2004). "Living Planet Report 2004." Retrieved 1 September, 2006 from <http://assets.panda.org/downloads/lpr2004.pdf>.

4. Opcit. Venetoulis, J. and J. Talberth. (2005).



SOLUTIONS

Global Equity and Fair Shares

The news about climate change is absolutely grim. We seem to be on a crash course toward runaway dangerous climate change with insufficient action from our governments, let alone recognition that our fossil fuel addiction is the real problem. The Australian government has claimed that it would not ratify the Kyoto Protocol as it does not require emerging economies such as China to reduce emissions. On face value the expected emissions increases from India and China are frightening. However the principles of equity and historical responsibility are essential directives for achieving climate justice—a fair share of the earth's natural resources for all peoples, within ecological limits. It is from the principles of equity and a fair share that we must consider the responsibilities of rapidly emerging economies.

Using population figures from the Population Reference Bureau (2006)¹ and emissions statistics as reported by countries in their national communiqués to the UNFCCC² we can assess the per capita measure of greenhouse gas emissions. This is one of the fairest measures of equity and responsibility for mitigating climate change through

reductions in emissions. China's emissions are around 2.8 tonnes of greenhouse gas emissions per person while India's are roughly 0.8 tonnes of greenhouse gases per person. In comparison, Australia's per capita greenhouse gas emissions are around 27.5 tonnes per person per year, with a low population of 20 million people and national emissions of 550 million tonnes. On these figures Australia's per capita emissions are nearly ten times China's and 34 times India's!

In the last two hundred years the concentration of greenhouse gases in the atmosphere has risen from around 300 parts per million (ppm) to 380 ppm, and is rising at a rapid rate. There is some uncertainty and debate around 'climate sensitivity', a term scientists use to refer to the relationship between the concentration of CO₂ equivalents in the atmosphere and the mean surface temperature of the earth. This relationship is the key to identifying what concentration level is safe and a 'sustainable' rate of greenhouse gas emissions. Recent reports suggest that a maximum of 450 ppm in the atmosphere would avoid a two degree rise in temperature—a threshold beyond which 'dangerous' and runaway climate change is thought to lie.³ The IPCC has estimated that keeping the temperature rise below 2°C requires the world to live within an emissions limit of around 1.5 tonnes of greenhouse gas emissions per person per year to meet the 450 ppm peak.

Globally it is thought we need to stabilise emissions at the 450 ppm per capita limit by 2100. We are using more than our fair share of the atmosphere in the land of the fair go, where the average Australian household presently generates about 15 tonnes of greenhouse gas emissions per year from electricity consumption alone. In Australia we need to reach the 1.5 tonnes per year limit sooner, by mid century, to allow for peak and decline of emissions in developing countries over a longer time period.

Over recent decades Australians have benefited substantially from our prosperous economy; wealth

and prosperity attributable to high levels of greenhouse gas emissions—our historical greenhouse gas emissions. The wealth generated from fossil fuel extraction and consumption in Australia has also given us a greater capacity than most nations to both take action to mitigate climate change and fund our own internal adaptation needs. We have then an obligation and the capacity to be an ‘early actor’ in rapidly reducing emissions and give the majority of the world’s population the opportunity to increase emissions as millions of people move out of poverty. This is the meaning behind the principle of ‘common differentiated responsibilities’ which is one of the founding elements of the United Nations Framework Convention on Climate Change. The international community has a common interest in avoiding dangerous climate change, but our responsibilities to act are different based on our per capita consumption, capacity to act and responsibility to account for historical emissions.

Clearly climate change is an issue of over-consumption with a high correlation between wealth and greenhouse gas emissions. It is essential that we get our own house in order in terms of wrestling down consumption of fossil fuels before Australia can critique or provide credible guidance on the emissions of the emerging economies of the Global South.

FOOTNOTES

1. Population Reference Bureau (2006) 2006 World Population Data Sheet. Available at <http://www.prb.org/>
2. UNFCCC (2005) Greenhouse Gas Data for 1990-2003 submitted to the United Nations Framework Convention on Climate Change. Available at http://unfccc.int/national_reports/items/1408.php
3. Meinshausen, M (2006) “What does a 2°C target mean for greenhouse gas concentrations? A brief analysis based on multi-gas emission pathways and several climate sensitivity uncertainty estimates”, in H. Schellnhuber, et al., (eds.) *Avoiding Dangerous Climate Change*, Cambridge University Press, New York .



Blockade of gas pipeline at
Somerton, Victoria, 2001.
Image: FoE Melbourne



Repaying Carbon Debt

Northern nations owe a carbon debt to the rest of the world because of our overuse of the global commons of the atmosphere and our over-consumption. We have, in effect, stolen resources that other communities need to build their infrastructure and economies so they can cope with the coming storm of global warming. There is a responsibility on those of us living now to finally stop accumulating further debt and initiate the process that will bring us to some form of accounting of the size of the debt and, ultimately, repayment. How can we repay the carbon debt when the global carbon budget has been run down to the unequal situation between nations that we have today?

It is possible to quantify key elements of carbon debt, which number of researchers have been developing mechanisms for calculating. The Centre for Sustainable Development at Ghent University in Belgium has suggested a framework for understanding the costs of historic debt including the creation of carbon debt funds which could finance adaptation programs, technology transfer and other needs, similar to existing programs administered by the UNFCCC. Other ideas include rich nations repaying their historical carbon debt by passing part of their future carbon entitlements on to poorer nations for a time so they gain increased carbon emission allocations for the same period.

A populations approach put forward by the International Project for Sustainable Energy calculated that with existing and projected populations between 1986 and 2100 taken into account, Northern nations already used up their whole carbon emissions quota in 1999. What's more, it suggested that for there to be historical justice, compensation to Southern nations (that is, providing a greater share of future greenhouse gas emissions) would need to extend over the next 90 years.

“Oil spill”. Oil spills bring pollution, food loss and disease to Niger Delta communities and environment.
Image: Gwendal Danguy Des Déserts



The size of the debt could be enormous; for instance the Ghent University study estimated that the climate debt for Belgium for 1990—2000 alone at between 42 and 58 billion €¹. In another study the figure owed to India was estimated at between 505 and 723 billion €².

The future inter-generational implications of global warming also need to be factored into repayment of the carbon debt. The domino effects of rising concentrations of greenhouse gas on the oceans, land and ice sheets are slow. A time lag of decades and perhaps centuries means our children will live with the consequences of our carbon economy for generations. They will need resources and spare capacity in the atmosphere set aside by us if they are to get by. An option to help future generations cope with the impacts of climate change would be to put a price on carbon emissions to create a future fund. Such a mechanism could be linked to carbon tax or adaptation programs of the UNFCCC. Other sources of funds could come from taxing the overuse of fossil fuels, redirecting subsidies for fossil fuels or fines for non-compliance with agreed emissions reduction targets and a levy on aviation emissions which are considered to be luxury rather than survival emissions.

Some would argue that it is a pipe dream to believe that the rich will own up to their carbon debt. Yet in terms of human history it is only a short time since slavery was acceptable and women did not have the vote. We live in a world where change is happening at an ever faster rate—including the decline in scepticism over whether climate change is happening or not. As a growing number of people and governments accept that climate change is real we should now take on the challenge of acknowledging carbon debt. This recognition could make us all—North and South—stronger and better able to live with the changed conditions that will come with global warming.

With just one planet we must accept that all of us, regardless of race, class, ethnicity or gender, have an equal right to a fair share of resources which will allow for a life of dignity. To simply start anew from here on won't do, already many are and will inherit an unjust burden. Any recompense must account for historical greenhouse gas emissions. Recognition of the carbon debt can help us understand how we might share the atmosphere in the future and lead us to bringing the wider ecological debt to account. By accepting the debt we can move on to ending its accumulation, repaying it and making provision for the needs of future generations.

FOOTNOTES

1. Ghent University, (2004) Elaboration of the concept of ecological debt', http://cdonet.ugent.be/english/north-south/research/ecological_debt/index.html
2. Friends of the Earth International (2005); Climate Debt: making historical responsibility part of the solution, Friends of the Earth International position paper, December 2005

Taking Action on Climate Refugees

In facing the realities of climate change we must also face the reality that large numbers of people are likely to be displaced as the sea-level rises and extreme weather events, disease, drought and floods make some areas uninhabitable. As one of the worlds leading per capita emitters of greenhouse gases, our contribution to creating these threats to their lives and cultures means Australia should:

- **Recognise climate refugees**, and in doing so create a new category of refugee in Australian legislation to accept people fleeing the devastation of climate change. This must be a new intake program and not come at the expense of existing refugee quotas nor discriminate on the basis of age or skills of those seeking relocation. Australia is disproportionately responsible for creating climate refugees and we must therefore take responsibility by changing our policies and practices are going to result in the displacement of millions of people from their homes.
- **Provide financial assistance** for climate refugees who need to relocate within their own countries.
- **Undertake an extensive educational campaign** to teach the Australian people about environmental refugees, why they need to move, and what our responsibilities are to them. It has taken many years of concerted effort by refugee advocates to raise awareness and reduce community fear of asylum seekers, but the issue of climate refugees has the potential to reignite these fears and concerns. A high-profile education campaign is needed to ensure climate refugees are welcomed and recognised as humans who are in genuine need of assistance and have the right to seek a new home in Australia.
- **Help to develop an international coalition of countries willing to accept climate refugees.**
- **Be pushing for the international, legal recognition of climate refugees** either through existing UN conventions or the establishment of a new convention focussing specifically on those displaced by the impacts of climate change.
- **Invest in vocational training in Pacific Island countries** that are most at risk of becoming uninhabitable so that citizens can successfully adapt to climate change, including the prospect of having to rebuild their lives as refugees in a new country.
- **Provide funding to Pacific Island communities** to document their cultural practices, traditional technologies and histories when climate change threatens to destroy their homelands. There is the danger that as traditional lands are lost and people are forced to relocate across the globe, cultures will be scattered, losing traditions, languages and knowledge.

What you can do:

- The Australian Government has yet to recognise environmental or climate refugees. By writing to government ministers and your Federal MP you can voice your opinion about climate refugees and encourage our politicians to become proactive in supporting those affected by climate change. Key ministerial responsibilities to target are Immigration, Foreign Affairs and Trade.
- Write to Labor MPs to congratulate them on their discussion paper “Our Drowning Neighbours” about climate change in the Pacific, which includes the proposed policies above. Tell them you would like to see their proposals become Labor Party policy.
- Embark on an education program yourself: learn more and share your knowledge and interest in the issue of climate refugees with friends and family. By helping more people become aware of the human dimension of climate change you can become part of the movement that is fighting for climate justice. Every person can make a difference.

Have a look at the list of resources for help on where to find out more and who to write to in order to get climate refugees recognized.



Jacob Tsomi, Chief of the dog
clan, of Huene and Iolassa
Islands in the Carterets.
Image: Pip Starr

The Kyoto Protocol—the Global Response to a Global Crisis

The Australian Government needs to act as a responsible global citizen by joining in this important collective initiative to reduce the greenhouse gas emissions that are responsible for climate change and its devastating effects around the world. While the targets set for the first commitment period of the Kyoto Protocol are almost insignificant compared to what the scientific consensus has estimated is necessary to avoid very dangerous climate change, being part of an international agreement that sets a baseline of mandatory targets and timetables for the reduction of emissions is an important first step. As negotiations commence on the second commitment period of the Kyoto Protocol (post 2012), there is now a great opportunity to design emissions reduction targets that meet the scale of mitigation action required.

First Steps

The first set of international agreements officially linking climate change to greenhouse gas emissions emerged from the Earth Summit in Rio de Janeiro, Brazil, in 1992. One outcome was the United Nations Framework Convention on Climate Change (UNFCCC). After UN member states ratified the UNFCCC in 1994, negotiations took place to reach international agreement on binding arrangements for the reduction of greenhouse gases.

The Intergovernmental Panel on Climate Change (IPCC), created in 1988 and composed of over 2,000 scientific and technical experts from around the world, had already produced two comprehensive assessments during the 1990s. The second of these established scientific consensus in late 1995 that human activity, in particular the use of fossil fuels in highly-industrialised countries, was affecting the global climate by significantly changing the atmospheric concentration of greenhouse gases. The IPCC's estimate was that the highly industrialised countries would need to reduce their emissions by 60–80% of 1990 levels in order to attempt to stem the damaging impact on the Earth's climate. The fourth assessment report from the IPCC is due out in 2007 and will reinforce the need for high reduction targets by 2050.

In 1997 during the meeting of the parties to the UNFCCC the Kyoto Protocol was proposed, obliging the industrialised countries to achieve by the end of the first commitment period in 2012 an average reduction of 5.2% of carbon dioxide emissions from 1990 levels, well below the level that scientists estimated would be necessary to even stem—let alone reverse—the trends of global warming. The agreement met with much opposition, and downright resistance and refusal on the part of the USA. In 2001 a compromise was reached which would allow the Protocol to come into force if it was ratified by a sufficient number of the 178 countries which had signed on to it.

A condition of the agreement was that for it to come into force enough highly-industrialised nations (Annex 1 countries) would need to ratify the Protocol to account for at least 55% of the greenhouse gas emissions by them. As the USA, the largest single polluter, wouldn't join, the ratification by Russia in December 2004 was significant and the Protocol came into force on Wednesday 16 February 2005.

Steps are being taken already to renegotiate the Protocol's provisions beyond the first targeted date of 2012. This represents an important opportunity for concerned citizens worldwide to advocate for realistic targets for the reduction of emissions. Politicians in highly industrialised countries which have, historically, been the worst polluters, need to be convinced of the urgent need to commit to measures that ensure strong and effective action.



'Kyoto' banner, Melbourne 2001.
Image: Tristy Fairfield

Clean Development Mechanism and Joint Implementation

Included in the Kyoto Protocol are the Clean Development Mechanism (CDM) and Joint Implementation, which allow Annex 1 nations to meet part of their targets by funding projects in other countries. These mechanisms are designed to make it easier and cheaper for industrialised countries to meet the greenhouse gas emission reduction targets that they agreed to under the Protocol. The CDM is also mandated to assist Southern nations in achieving sustainable development. These mechanisms are problematic in that they allow rich countries to continue with their fossil fuel polluting ways. Additionally, of all CDM-sanctioned carbon 'capital', only 2% goes towards wind, solar, tidal/wave, geothermal and micro-hydro power generation. CDM also includes large dam projects, at 3% of CDM capital, which have detrimental social and environmental impacts. The largest amount of capital, at 72%, goes to gas capture projects which involve major petrochemical and manufacturing plants that have undertaken not to release greenhouse gases.

Action

Write to the Prime Minister and other relevant politicians in the Australian Government, urging them to take seriously the efforts being made at the international level to address this collective concern of the whole of humanity, not to mention its implications for other species. Ratification of the Kyoto Protocol would represent an essential first step in this direction.

What about Australia? The Australian Government maintains it will not ratify the Kyoto Protocol. Yet it lays claim to achieving the 'reduction' target set for Australia in the Protocol; even though in Protocol negotiations it had pleaded it was a special case, due to its reliance on fossil fuels, and was set a target that is in fact not a reduction, but a increase of its emissions by 8%. By refusing to ratify, Australia has thereby distanced itself from this important international effort to address a truly global problem. Instead it recently initiated an imitation, the 'Asia-Pacific Partnership on Clean Development and Climate' referred to as AP6 for short, recruiting the USA, Japan, China, India and South Korea as participants, a deal on technology around 'clean coal' and 'carbon capture and storage' (geosequestration). This deal avoided setting actual targets or any critical goals or commitments to ensure emissions were reduced. Furthermore, by the Australian government's own assessment, it will not deliver a net reduction in emissions. The Australian Bureau of Agriculture and Resource Economics (ABARE) released a report which claimed that the AP6 could reduce emissions by 30% by 2050, which on closer investigation was revealed to be a 30% reduction on business-as-usual projections of emissions by 2050, not an absolute reduction in emissions.

In terms of addressing the impact of climate change the Kyoto Protocol represents, in reality, no more than a small beginning for global action. Its significance however lies in the fact that it is the first binding international treaty on this critical issue, establishing a foundation of trust and cooperation to tackle climate change responsibilities and providing the basis for a genuine global effort. In the meantime, Australia has acquired the unenviable reputation of being the highest per capita emitter of greenhouse gases among the highly industrialised countries.

Aid and Development

The effects of climate change impact on all spheres of life and every aspect of community development. Whether it is public health or infrastructure, conservation, agriculture, urban planning or other sectors, aid programs and projects need to consider greenhouse gas emissions and the implications of climate change. For example, how unreliable rainfall and drought risk might compromise an agricultural project or how new energy infrastructure will impact upon emissions needs to be considered.

While a number of projects to help Southern countries and their communities with 'adaptation' to climate change have been carried out by non-government organisations and aid agencies, these have generally been isolated and narrow projects. In cases where climate change has been incorporated into government policies in poor nations, these policies have often not translated into action on the ground.

One area where a number of adaptation projects have already been successfully implemented in countries that are particularly vulnerable to climate change is in disaster preparedness. Some adaptation measures have included raising land in flood-prone and cyclone-prone areas, the creation of search and rescue centres and mangrove replanting.

The CARE Canada/CARE Bangladesh pilot 'Reducing Vulnerability to Climate Change' project launched in 2002 worked at the household, community, institutional and national levels. The project involved local non-government organizations and aimed to raise awareness, build adaptive capacity and advocate for appropriate government action relating to climate change. It encouraged communities to identify vulnerabilities to climate change and design appropriate solutions. Some aspects of this project included promoting alternative livelihood strategies, planting saline-tolerant crops and constructing cyclone shelters. Community involvement in the planning and implementation of adaptation efforts such as this one is important because



Image: Yoshi Shimizu, International Federation of Red Cross and Red Crescent Societies

Mangrove replanting increases resilience to climate change as mangroves protect against rising seas and storm surges. Since 1994, the Viet Nam Red Cross has involved 7,750 families in replanting and protecting nearly 12,000 hectares of mangrove forest in northern Viet Nam. Mangrove conservation has also created livelihood opportunities, providing families with the chance to supplement their diet and earn additional income selling the crabs, shrimp and molluscs harboured by mangrove forest.¹

climate changes are highly site specific, local people have valuable knowledge of the local environment and adaptation activities are more likely to be taken up by local communities if they have been involved. Equally important is the coordination that occurred between communities and governments.

Climate change adaptation projects such as these provide important lessons for Australia's aid agency AusAID. However, while AusAID has recognised that climate change will have negative impacts on many of the countries it provides aid to; it has yet to integrate climate change concerns into all of its programs and projects and to adequately fund adaptation programs in the countries that AusAID works in.

Levels of Australian aid are woefully low at 0.3%, ranking us in 19th place of 22 OECD nations.² This is far below the internationally agreed upon level of 0.7% of Gross National Income, which most countries of the European Union have set timelines to achieve. In addition Australia has yet to contribute to the UNFCCC Adaptation Funds that assist the Least Developed Countries and Small Island Developing States despite our obligation under the convention to do so.

Besides supporting adaptation of poor countries to climate change it is also essential our aid programs assist these nations in finding to low-carbon paths to development. AusAID's spending on energy infrastructure is very low and in recent years the proportion of AusAID funding for renewable energy projects has been decreasing. In 2004–05, only \$238,000 was devoted to such projects from an aid budget of \$2.25 billion, highlighting the need for more funding in this area.

Meanwhile, Australia's addiction to fossil fuels directly undermines the credibility of our own aid programs. Only when Australians move closer to our neighbours by making deep cuts to our emissions, increase our aid considerably and integrate climate change concerns into all our aid policies, will we be going some way towards addressing our responsibilities to the people of Southern nations.

FOOTNOTES

1. International Federation of Red Cross and Red Crescent Societies (2001) World Disasters Report. IFRCRC, Geneva.
2. <http://www.acfid.asn.au/campaigns/aid/chartso6-07.pdf>
3. AusAID, Answers to Questions on Notice (June 2005), 121



Climate Justice demonstration.
Image: FOE International



FoE corporate giant installation
at World Summit on Sustainable
Development, South Africa 2002
Image: FoE International.

International Financial Institutions Fuelling Climate Change

In seeking climate justice, it is essential that we find a cleaner purpose for all the billions of public dollars that are pumped into developing the oil, coal and gas industry in developing countries by International Financial Institutions (IFIs).

IFIs include public banks like the World Bank and the Asian Development Bank, and Export Credit Agencies (ECAs). Export Credit Agencies are the largest group of IFIs in the world and the main backers behind much of the energy-intensive and fossil fuel related foreign investment in Southern nations. From 1990 to 1997 the financing of infrastructure projects by ECAs from OECD countries was about twice the level of that from multilateral development banks like the World Bank. Globally they contribute to a significant proportion of greenhouse gas emissions, with support by ECAs from the United States alone accounting for 29.3 billion tonnes of carbon dioxide emissions between 1992 and 1998.¹

The Australian Government's export credit agency is the Export Finance Insurance Corporation (EFIC). According to a study by Aid/Watch and the Mineral Policy Institute, the Corporation backed fossil fuel projects over renewable energy projects at a rate of more than 100 to 1 between 1993 and 2003. These projects have the potential to lock many low-income countries into fossil fuel dependency for decades to come. Three recent energy sector projects financed by the Corporation in Thailand, Mozambique and Papua New Guinea have lifetime emissions that exceed the total national emissions for each of these countries.²

The fact that the Australian government refuses to ratify the Kyoto Protocol on the basis of Southern countries not having to cut greenhouse gases, while at the same time promoting the growth of fossil fuel exports and technology through EFIC to these very same countries, exposes the government's hypocrisy.

The World Bank has also been strongly criticised for its role in financing fossil fuel projects, as well as for profiting from carbon trading. While the Bank claims that carbon trading

provides the best solution to climate change, it has developed around \$1 billion in carbon trade transactions, and receives 10% in commissions on all of the carbon trades it brokers. Some policy analysts recently found "the Bank does far more to advance the US government and corporate agendas than it does to alleviate poverty and to aid the energy-poor".³

Furthermore, the World Bank ignored the recommendations of its own Extractive Industries Review which recommended it get out of oil and coal by 2008. In addition, while it claims to be increasing support for 'clean energies' it promotes untested technologies—such as 'integrated gasification combined cycle' and 'carbon capture and storage'—to the detriment of renewable energy. The Bank also includes nuclear energy as a supposed 'clean' energy, which is only economically viable with heavy subsidies. At the same time it promotes the removal of subsidies for other energies.⁴

International Financial Institutions profiteering from climate change 'solutions' while continuing to fund fossil fuel projects and exports must be stopped if we are to become a global society that is socially and environmentally just.

FOOTNOTES

1. Phelan, L. et al. (2003) '100 to 1 EFIC's Gamble with Climate' Aid/Watch and The Mineral Policy Institute, Erskineville.

2. *ibid.*

3. Vallette, J., Wysham, D. and Martinez, N. (2004) 'Wrong Turn From Rio: The World Bank's Road to Climate Catastrophe' Institute for Policy Studies: Washington

4. Wysham, D (2006) Talking points on the World Bank's "Clean Energy and Development: Towards an Investment Framework" paper, approved by the World Bank board, discussed by IMF and World Bank Development Committees April 23, 2006
http://www.ips-dc.org/comment/wysham_wb_2006.htm

Climate Litigation

It has become evident that in the struggle to understand climate change and its consequences, and to spur action on the issue, various means will be necessary to avoid a global catastrophe.

A basic tenet of law is that litigation—suing someone—is an avenue of redress open to individuals or groups of people when they are harmed in some manner by another. Pursuing justice through the courts is an attractive option for those adversely affected by climate change because there is a broad range of actions that may be designated as causing ‘harm’ and a variety of people and organisations that can be held responsible for them in law.

Across the world activists have caused a stir by launching legal claims against different governments as a method forcing a reduction in their nation’s largely unregulated emissions. But governments are not the only parties liable to be sued for their inaction on this pressing global issue (see the plaintiff/respondent game). Companies that fund or engage in activities that contribute to global warming (a coal-fired power station for example) are also targets.

While this kind of litigation may seem unusual, it is not unprecedented. It is similar to the class actions against tobacco companies for their subterfuge regarding the harmful effects of smoking. Like smoking, the damaging effects of greenhouse emissions are scientifically proven and like a diseased person, our planet is showing increasing symptoms of ill health! But this comparison has limits because some of the people who are bound to suffer the most as a result of climate change are more like passive smokers—they experience the consequences without choosing the ‘benefits’. The recent litigation cases described here illustrate the diverse approaches in both public and private law that may be utilised.

Locally, the Climate Action Network Australia (CANA) is pursuing climate litigation as part of its Climate Justice Program. When the program was launched in July 2003 it attracted a great deal of attention, especially from the business community. The program’s first move was to put top greenhouse polluters on notice that their failure

Carbon Criminals Beware

Match the people who can sue (plaintiffs) on the left with those they can sue (respondents) on the right.

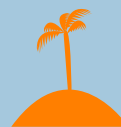
Car accident victim



Smoker with cancer



Small island nation threatened by rising sea levels



Governments who fail to reduce greenhouse emissions



Negligent driver



Tobacco company



to deal with the risk of climate change could have legal consequences. With assistance from a public advocacy law firm, letters were sent to executives of major corporations warning them that their activities may expose them to the kind of climate litigation actions being taken around the globe.

In the future countries such as our tiny Pacific Island neighbours like Tuvalu may decide to pursue actions against the world’s biggest carbon emitters—which on a per capita basis has been we Australians.

A photograph of a person, seen from the back, standing in a flooded area. The water is murky brown. In the foreground, there is a red plastic bucket. The background is filled with lush green plants, some with small yellow flowers. The person is wearing a dark-colored shirt.

Some recent Climate Litigation cases

Australia: On 22 July 2005, the first legal challenge against the Australian Government for failing to consider the effects of global warming on the environment was filed by the Wildlife Preservation Society of Queensland–Proserpine/Whitsunday Branch Inc (WPS).

The case, in the Federal Court of Australia, concerns the failure to consider the emission of greenhouse gases from the burning of coal from two large coal mines when assessing the impacts of the mines under provisions of the Environmental Protection and Biodiversity Conservation Act 1999 which are aimed at protecting key environmental interests, including the Great Barrier Reef and Wet Tropics of Queensland World Heritage Sites. Unfortunately the application for judicial review on behalf of WPS was rejected.

If you are interested in finding out more about the case, you can go to:

- Climate Justice—enforcing climate change law
<http://www.climatelaw.org/cases>
- Environmental Defenders Office North Queensland
<http://www.edo.org.au/edonq/>

Nigeria: With support from Environmental Rights Action/Friends of the Earth Nigeria (ERA), communities from across the Niger Delta launched proceedings in 2005 against Shell, ExxonMobil, ChevronTexaco, TotalFinaElf and Agip joint venture companies, the Nigerian National Petroleum Corporation, and the Nigerian government in order to stop gas flaring (the burning off of methane and other gases to dispose of them).

Nigeria is the world's biggest gas flarer, and the practice has contributed more greenhouse gas emissions than all other sources in sub-Saharan Africa combined, as well as poisoning surrounding areas with their toxic fumes. Flaring costs Nigeria about US\$2.5 billion annually, while 66% of its population live on less than US\$1 a day. Compare this to the daily income of the Multinationals who profit from the practice: Shell about US\$50 million, ExxonMobil about US\$69 million, ChevronTexaco on about US\$36 million, TotalFinaElf on about US\$31 million and Agip on about US\$15 million.

The communities are arguing there have been violations of human rights combined with breaches of Nigerian gas flaring regulations.

For a report about gas flaring and its impact see:
<http://www.climatelaw.org/media/gas.flaring/report/gas.flaring.in.nigeria.html>

In Nigeria's Niger Delta oil is piped but clean water is not so easy to find.
Image: Ifie Lott,
Women's Light/FoE International

Solutions in Australia's Backyard

Australians can do a lot to reverse global warming, not only because we have one of the highest per capita rates of emissions globally—we also have the technical ability and economic capacity to act. It's not surprising then that there is a huge range of big and small things we can all do in our homes, workplaces, communities, governments and industry.

National action will help make amends in the global village as well as saving our own hides, and future generations from climate chaos. Our small population, large coal and mineral resources, huge land mass or small total contribution to global emissions of greenhouse gases are not reasonable excuses for continuing to foul everyone's air.

Renewable Energy Options

Renewable energy generation systems tap into flows of energy in the day to day cycles and forces of nature, which are nearly all driven by the sun's constant stream of energy. Most importantly today renewable energy technologies can provide clean electricity, heat and fuels, without the high levels of greenhouse gas emissions from fossil fuels or the unacceptable risks of nuclear energy.

Solar

The sun is ultimately the source of virtually all the energy that supports life on earth. It makes sense then that sustaining life on earth would involve clean ways of harnessing what solar energy arrives each day; which, if we could capture it with 100% efficiency, would be thousands of times more than our present global daily usage.

Solar technologies trap the sun's thermal energy, for hot water systems and thermal solar power plants, or turn it directly into electricity (with photovoltaic solar cells). Solar is a flexible and scalable renewable energy option, with collectors available for small personal or home uses or as large energy generation plants that can supply the electricity grid.

Solar power systems involve advanced technologies that in the short term make them quite expensive in terms of materials, manufacturing processes and pollution control. However, the investment pays off in the long term as the energy source is natural, the systems are durable, and once established, there are no ongoing greenhouse gas emissions.

Wind

As the sun drives the weather, its winds in turn are today driving wind turbines in 'wind farms' across the world that are already a globally significant energy generation industry supplying millions of people with clean electricity.

This clean and quiet technology does tend to compete for tracts of land where landscape issues have been a community concern; however it has the lowest greenhouse gas emissions per unit energy compared to other large-scale energy infrastructure and great potential in Australia. Like solar, wind power is not constant and comes and goes with the wind.



Starfish Hill Wind Farm Project
on Fleurieu Peninsula,
South Australia.
Image: Greenpeace/Glenn Hunt

Water

The sun also drives the earth's water cycle, lifting moisture up and onto the land where, as it runs back to the sea, the falling water can be used to turn turbines and generate 'hydroelectric' power. Water moving as waves can also be harnessed this way, as can tidal currents, which are generated by the gravitational pulls of the moon and the sun. All of these provide clean power and have vast unexploited potential to supply our energy needs. Hydroelectric power is the more flexible of these, with the 'micro' suitable for small streams avoiding the impact of large projects such as dams which wipe out the homes of the ecosystems and communities of people in the way.

Bioenergy

Bioenergy refers to the energy embodied in the 'biomass' or organic matter of plants and animals, which grow and decay in a cycle of renewal driven again, essentially, by the sun. These technologies convert biomass that would otherwise be wasted into fuels, such as methane gas and biodeisel, or collect gases from decaying waste, from landfill sites for example. In this way they intercept and generate energy from sources whose greenhouse gases would otherwise escape to the atmosphere anyway.

A serious problem with bioenergy is the risk of unsustainable use of land and the atmosphere; for instance burning 'wastes' from the harvesting of native forests simply adds to our problems. So does growing crops such as oil palm in Southern nations, to the disadvantage of their people and ecosystems. Huge tracts of land are currently being cleared in Indonesia and Malaysia for palm oil and the use of fertilisers on these plantations produces nitrous oxide, itself a powerful greenhouse gas. This is a supposed solution to climate change that helps Southern nations 'develop', but in fact allows people in the North to continue their consumptive lifestyles without really reducing emissions. Bioenergy systems must be environmentally sustainable and socially just.

Action at home

Real and deep cuts in our emissions of more than 60% by 2050 are required to stem accelerating impacts from global warming and give Southern nations an opportunity to adapt to climate change. Such reductions will need support from across the political spectrum, and the backing of the community. For such a 'coalition of the willing' the challenge and effects of such cuts will be significant. Setting progressive targets will help get us there, but these must not selfishly stall for time if we are to achieve the realistic necessity of 80% emissions reductions on 1990 levels by 2050.

There are lots of ways you can decrease your greenhouse gas emissions, just some of the possibilities are:

- Use climate friendly ways to travel (they're healthier and more sociable too). Avoid air travel since at high altitude the exhaust of aircraft has about three times the normal greenhouse effect.
- Use clean energy by switching to 100% green suppliers and collecting your own solar energy for the home, which can save about 1,300 kilos of CO₂ per person a year.
- Use the cold wash on your washing machine, turn down your hot water system and other appliances off at the wall, install energy efficient light globes and take shorter showers. Reduce energy used for heating by turning the dial down and putting a jumper on, insulate your house more, fix drafts and replace the air-conditioning with passive-solar design changes to your house.
- Buy local produce (less transport) and energy efficient products, avoid packaging and disposable or short-lived products, and simply consume less by looking critically at what you buy and waste.
- Some false and misleading emissions offset schemes for greenhouse gas emissions are already available as consumer products—don't use them.
- Share, repair or reuse manufactured goods and materials such as machinery and appliances because manufacturing is energy and petroleum intensive.
- Increase our future resilience: grow more fruit and vegetables in your garden, make low-emissions part of life, collect rainwater, get bicycle-fit, move out of flood prone areas, teach your children to be climate friendly.

Energy efficiency

The best way that you can stop climate change is to use less energy. Energy efficiency measures create lots of jobs and make for easy savings on greenhouse gas emissions of up to 35% with readily available technology and techniques. Unlike 'solutions' such as carbon capture and nuclear power, efficiency can be implemented immediately.

National action

These things alone will not bring about the necessary emissions reductions. Governments must legislate for this to occur. Tell those in power they need to:

- Place an immediate moratorium on coal fired power stations in Australia, and no nuclear power stations.
- Ratify Kyoto—the Kyoto Protocol is being renegotiated for action post 2012—tell the Federal government that Australia should not get left behind.
- Make binding national emissions reduction targets—let governments of all levels know that they must make commitments to 80% emission reductions by 2050.
- Increase funding for renewable technologies



- Raise the federal Mandatory Renewable Energy Target (MRET) to 10% by 2010 and 30% by 2020. Ask your state government to introduce a state renewable energy target too. When combined with current renewable generation, this would equate to renewable energy meeting 20.5% of Australia's electricity generation in 2010.
- Implement an international energy efficiency standard for appliances, buildings and transport.
- Halt public funding for fossil fuels and redirect these funds to renewable energy and energy efficiency support.
- Improve public transport
- Implement safeguards for people vulnerable to the negative impacts of climate change such as indigenous communities and farmers.
- Recognise and accept climate refugees
- Increase aid to 0.7% of GDP to account for the changed conditions that climate change will bring and contribute to the UNFCCC Adaptation funds to assist poorer nations in adaptation.
- Only introduce emissions trading schemes if they use a stringent 'cap and trade' system to apply strong price signals that will help remove carbon from our economy quickly. Any trading scheme must be about real emission reductions, not false ones based on offsets, subsidising transitional fuels, base-line and credit characteristics, or carbon sinks, which all encourage 'business as usual'.



Community members of Terian, Sabah, Malaysia repair the water catchment above their microhydro generator.
Image: Shawn Sullivan, The Borneo Project

Sustainable Energy Solutions

Throughout the world, there are positive examples of communities living on renewable energy. In the remote Sarawak region of Malaysia for example, the Long Lawen community has been sourcing its electricity needs from micro-hydro and solar power generation for nearly five years. Refusing to be dislocated by the controversial Bakun Dam project, they returned to their ancestral land. With local groups Partners of Community Organizations and Friends of the Earth Malaysia, and the support of 'Green Empowerment' and 'The Borneo Project' based in the USA, they are now generating their own electricity rather than using diesel for the 15 generators they replaced. The community now has lights at night, a rice mill and power for refrigeration which have not only improved their standard of living, but returned a profit, which is being reinvested in schools, roads and other infrastructure.¹

The success of the community driven sustainable energy venture at Long Lawen is spreading to other villages. In Sabah for instance, a village is using solar power to enable students at the primary school to access the internet. Remote homes are being fitted with solar power and micro-hydroelectric systems are being built that avoid the massive environmental and social impact of large hydro-dam schemes.²

There are things to do in the industry and business sector too.

Get involved in challenging corporations who contribute the majority of greenhouse gases, and are making record profits, yet bear few of the costs. Don't buy from companies that undermine action on climate change or are associated with human rights abuses in the production of energy, for example Shell, Exxon Mobil (Esso), Texaco, and Chevron.

Finally, become more active in securing a sustainable future for all yourself!

Find out about climate change, what is or is not happening near you and join groups such as the Friends of the Earth or start your own campaigns to make sure things change. If you don't have much spare time you can simply talk with friends, family and colleagues about what you have learnt about Climate Justice, what you are going to do about it, and encourage them to do something too.

FOOTNOTES

1. Green Empowerment International. (2002). "Projects: Borneo." Green Empowerment - social justice - local leadership - sustainability Retrieved 9 October, 2006, from <http://www.greenempowerment.org/borneo.htm>
2. Chiew, H. (2005). "Indigenous communities show the way with renewable energy project." Lifestyle Retrieved 9 October, 2006, from <http://www.greenempowerment.org/Indigenous%20communities.htm?file=/2005/4/26/features/10758254&sec=features>

Dangerous Distractions: False Solutions to Climate Change

With climate change largely the result of over 150 years of unsustainable over-consumption of fossil fuels and other natural resources by today's industrialised and wealthy countries, it is clear solutions that do not radically reduce consumption in Northern nations are unlikely to reign in climate change. It is also clear that any just solutions to climate change must atone for a history of inequitable access and consumption of resources by a few, and would establish fair shares of access to global resources between the North and South.

A simple test of the potential of possible climate change solutions is their ability to produce a net reduction in greenhouse gas emissions. Schemes that excuse continuing excessive levels of consumption in the developed world should be a concern. Solutions should also abide by the Precautionary Principle and a principle of intergenerational equity, so that social or environmental risks are not created for current or future generations.

Many of the potential solutions to climate change being proposed these days fail to meet these criteria. This is worrying given the urgency of reducing greenhouse gas emissions to avoid dangerous climate change and the lag time for any reduction in greenhouse gas emissions to have an effect on climate. Weak and evasive options for addressing climate change give a false sense that we are acting to address climate change and waste precious time, money and political goodwill.

Some dangerous distractions to designing and implementing real solutions to climate change to date include geosequestration (storing carbon underground), offsets for greenhouse gas emissions, terrestrial carbon sinks (like trees), carbon trading programs and nuclear energy.

Geosequestration

This carbon-contraptraption involves capturing carbon dioxide, compressing it into more manageable liquefied volumes, and storing it in geological reservoirs deep underground. This technology will at best continue, and at worst increase, our consumption of coal, take too much time and money, create a new deadly threat from poisonous gas leaks, and shifts the costs of potential impacts and clean-up onto future generations. Additionally, this technology remains unproven on a commercial scale and would take 15 or 20 years to convert Australia's coal-fired power stations to capture their CO₂ emissions. Furthermore, it would cost "hundreds of millions of dollars" to fit just one large power station with the technology.¹ Even then more coal would be burnt since capturing the CO₂ would use up 30% of the power generated. The impracticalities of this option defy belief; for instance just for Australia's coal-fired power stations there would be a cubic kilometre of compressed liquefied carbon dioxide to deal with, every day.²

Geosequestration is an end-of-pipe solution, a pipe dream, which has captured the eye and heart of the coal industry worldwide, and in Australia the purse-strings of government for funding energy research and development.

Offsets

Carbon offsets are projects and services that an emitter of greenhouse gases buys to neutralise their impact on the atmosphere. An example might be paying for a promise of tree plantations (see below) being established that on paper would negate your carbon emissions. There are already services for which you only need a credit card to supposedly offset emissions and make an overseas holiday or driving to work "carbon neutral".

Rather than reducing emissions, carbon offsets allow and encourage people in industrialised nations to continue producing greenhouse gases. Offsets are part of strategies of the Kyoto Protocol and its 'Clean Development

Mechanism' (CDM). A criticism of the CDM is that it encourages locating offset projects in the Southern nations, dressing up the dumping of carbon emissions from wealthy industrialised nations as a 'development' and investment opportunity for the poor. Offset projects have increased poverty in Southern countries by restricting local people's access to land used for carbon-sink projects³ and made local communities the dumpsites for biomass (rich in carbon) in biowaste projects.

Offsets are a profit driven solution from the same place our global warming problem came from. Implemented for least costs they are likely to result in poor standards and reliability and no certainty or clean-up commitments to future generations.

Carbon sinks

Trees and other forms of biomass are important for a host of biodiversity and climate reasons, including the carbon held in them, but cannot store carbon forever. In a lifecycle of bush fire, browsing, chainsaws, drought and finally decay much of the carbon soon returns to the atmosphere. What's more, recent CSIRO research has indicated that when forests come under heat stress they actually start releasing carbon. If we continue to head towards global warming—by digging ancient coal, oil, gas out of the ground and burning it—will we then see trees become sources of emissions and not sinks?

The 100,000 years it takes coal to form is many orders of magnitude greater than the time the bio-carbon cycle takes, and in which we now expect dramatic climate change to occur. Conservation of forests is of utmost importance as a carbon conservation measure and should be clearly distinguished from 'offsetting' our high levels of consumption by planting trees in the hope they'll eventually absorb the subsequent greenhouse gas emissions.

Carbon stores, and other values, could be greater in the Styx Valley, Tasmania.
Image: Greenpeace/Hancock



Carbon trading

In theory carbon trading offers some benefits to reducing greenhouse gas emissions by establishing a 'cost' and market for carbon that is tied to the production and consumption processes producing emissions. In addition, a 'cap' on emissions can be attached to the production and consumption processes, as a tradable quota, and an alternative to applying mandatory emissions reduction targets. This is sometimes referred to as 'cap and trade'.

However, the reality and determination of the power of business and industry and their lawyers, lobbyists and accountants has meant that none of the existing emissions trading schemes will deliver a net reduction in emissions. This is because the baselines for emissions are too high, targets are weak, and the fine print contains lots of exclusions. So far the sort of carbon trading scheme that might achieve real emission reductions and apply acute market controls to remove carbon from our economy quickly have not been instituted.

Nuclear

Nuclear power is offered as an attractive alternative for fuelling our present consumption levels without an increase in greenhouse gas emissions. However if current nuclear power production was doubled worldwide, we would only see a reduction of 5% in emissions, and in fact a cradle to grave assessment of the full nuclear fuel cycle clearly indicates it is not a carbon-free source of energy. Furthermore, during the European heat wave of 2003 many nuclear reactors were either shut down or had to undertake emergency measures to guarantee their safe operation.⁴ This sensitivity to heat seems ironic given the increase in extreme temperatures already expected from climate change.

In any case the financial cost of establishing and then operating reactors, the time needed to commission them and unanswered radioactive waste problems, make nuclear power a high risk option that can't realistically meet our energy needs or solve our climate change woes.

Nuclear energy and uranium mining has extremely high social and environmental costs which are unacceptable risks to current and future generations.

All of these deceptive solutions entrench existing consumption patterns and control over our energy and emissions sources by private interests, who will always prioritise profit over environmental or social wellbeing. The strength of green-wash by both industry and government is that people believe these measures are doing something very progressive and effective to reduce greenhouse gas emissions. For us to look at climate change through mirrors and smoke screens is really dangerous, as we and our governments and economies then relax, thinking we are seeing our carbon pollution problems solved.

Genuine solutions to climate change are in decentralised renewable energy production, energy efficiency and energy sufficiency—consuming just what is sufficient for living. Producing goods and services locally for local consumption will dramatically reduce greenhouse gas emissions from the transport sector, and is another important element of the genuine solutions for climate justice.

FOOTNOTES

1. Standing Committee on Science and Innovation (2006). Proof Committee Hansard: Geosequestration technology. H. o. Representatives, Commonwealth of Australia.
2. Flannery, T. (2005). The Weather Makers: the history and future impact of climate change. Melbourne, The Text Publishing Company.
3. Ma'anit, A. (2006). If you go down to the woods today. New Internationalist: 2-6.
4. (CNN online 2003)





Climate Justice

Climate change is an environmental problem that is creating a global human rights crisis.

Friends of the Earth Australia believes that climate change is occurring due to globally unequal consumption of the planet's resources; and therefore that the moral responsibility for the problem is not equal for all the world's people.

The solution to the threat of climate change we all need must be based on a fair share of sustainable resource use for all people. That means Northern nations must take drastic action to halt the still growing climate change problem and take responsibility for the plight of other nations.

The Friends of the Earth's Climate Justice Campaign recognises that Climate Justice means Australians must reduce their greenhouse gas emissions and be accountable for our global complicity in climate change.

Reducing our Generation of Greenhouse Gases to Stop Global Warming

To rein in the climate change crisis and reduce our emissions to equitable levels we must cut our consumption and demand for energy now. Fossil fuels have to be replaced by safe renewable alternatives and highly efficient energy use. However we cannot source our current energy demand from renewable sources, so we must cut consumption. It's clear now our lifestyle addiction to fossil fuels is a dead-end, yet we subsidise their use. Meanwhile, we have the alternative energy sources and developing technologies that can save the atmosphere; but they are sidelined and we squander light, heat and manufactured goods while complaining about their cost. Addressing this economic perversity is the key to moving towards a carbon constrained economy.

Taking Responsibility for Climate Change

We in the Global North, the wealthy industrialised nations who have championed the carbon economy, must account for the historical debt we owe others. This includes a duty to provide support and aid today to the vulnerable nations facing climate change, obligations to future generations and settlement of our carbon debts.

- We have a moral responsibility to recognise climate refugees as a group with a rightful claim to our protection and sanctuary. We must accept climate refugees and compensate them for their losses.
- We must provide genuine help for the world's poor and developing nations to adapt to the climate change impacts we have brought upon them, by aiding their development in an ecologically sustainable manner. For this to happen we must reduce our generation of greenhouse gases to a level lower than Southern nations so they may attain a fair share of the prosperity the earth is capable of providing.
- Future generations will have to live with our greenhouse legacy for centuries. Options for them in the future will come from us making deep cuts in greenhouse gas emissions now and setting aside resources for them to draw on.
- These steps will begin the process of accounting for the carbon debt, and wider ecological debt, of Northern nations. An equitable future can only come by providing compensation that reconciles the last 200 hundred years of inequitable global resource use.

Finally, the earth and its ecosystems—the environment that sustains us—is threatened too. We must care for and protect nature, the land, sea and biodiversity; for coral reefs, forests, rivers and coastlines are the key to our children surviving in the future.



Glossary

Adaptation: refers to adjusting to climate change, including both variability and extremes of climate. It can include reducing possible damage and losses or vulnerability to climate change, and improving capacity to cope with its consequences.

Annex I countries (of the UNFCCC): are the developed industrialized (OCED) countries and “economies in transition”—Australia, Austria, Belarus, Belgium, Bulgaria, Canada, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Latvia, Lithuania, Luxembourg, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Russia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom, United States of America.

Climate Change: describes the full implications of global warming and commonly for changes in climate due to human activity that has modified the atmosphere. It includes changes in climate variability, such as long term rainfall and temperature trends, and extremes of weather, such drought, floods, cyclones, storms and heat waves, which are expected to strike with increased frequency and intensity.

Coral bleaching: is caused by high sea temperatures killing coral and is associated with warming of the ocean in El Nino years. Major coral bleaching episodes in the past 20 years were found to be associated with periods when ocean temperatures were about 1°C higher than the summer maximum.

Energy efficiency: by cutting down on the energy our society needs to grow and develop we can reduce our greenhouse gas emissions. Simple steps like replacing older incandescent bulbs with new compact fluorescent lights can save 75% of your lighting energy needs.

Greenhouse effect: the blanketing action of greenhouse gases which intercepts heat radiation in the lower atmosphere, preventing it from being lost back into space, and re-radiating it so it becomes trapped near the earth's surface.

Greenhouse gas: gas that absorbs heat radiation and re-emits it into the atmosphere. Primarily water vapour (H₂O), carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O).

Global warming: see climate change.

IPCC: Intergovernmental Panel on Climate Change is a body of over 2,000 scientists from approximately 120 countries, established by the United Nations Environment Program. The IPCC produces the most rigorously peer reviewed research on climate change, being the “assessment report” series.

Kyoto Protocol: initiated in 1997 the Kyoto Protocol, in spite of Australia and the USA refusing to ratify its binding obligations, eventually came into force in 2005 for those nations to have ratified it. The Protocol sets targets for Annex I countries to reduce their greenhouse gas emissions by 2012—but these are often criticised as far too small and evasive.

To continue this global cooperation on climate change beyond 2012 a new agreement will need to be negotiated.

Millennium Development Goals (MDGs): are the minimum goals governments around the world committed to achieving by 2015, including halving extreme poverty and achieving universal primary education.

Mitigation: refers to human intervention to ease the greenhouse effect by reducing greenhouse gas emissions or augmenting their removal from climate systems.

Non Annex I countries (of UNFCCC): 148 ‘developing’ nations that are not listed as Annex I above.

North: refers to the less numerous but more powerful rich industrialised and ‘developed’ nations. Generally the OECD members or Annex I countries of the UNFCCC. Supersedes the old notions of the global as divided by ‘East’ and ‘West’.

OECD: Organisation for Economic Co-operation and Development, consisting of the major industrialized countries.

Renewable energy: includes modern biomass, small-scale hydropower, geothermal, wind, solar, tidal, wave and other marine energy.

South: the numerous nations that globally have little collective economic power or wealth and are mostly found in the southern hemisphere. Also known as ‘developing’ nations. We do not use the terms ‘developing’ and ‘developed’ nations in the text because development, by a global few over the last 200 years, is responsible for the climate crisis we face today and we challenge the assumption that development is both achievable and desirable.

UNFCCC: United Nations Framework on Climate Change Convention was established at the United Nations Earth Summit in Rio de Janeiro in 1992 as a non-binding agreement for global action on climate change. As a ratifying party Australia has thereby committed to its five guiding principles: developed countries taking the lead in the struggle against climate change; full consideration granted to the special needs of developing countries; precautionary measures taken to avert or minimize climate change causes and ease its impacts; policies developed in line with each country's specific needs; and cooperation to promote an open international economic system.

The Kyoto Protocol was developed after several conferences of the parties to the UNFCCC.



Resources and Reading

Work for Climate Justice by writing to our political leaders and your local federal MP and state politicians.

At the time of writing some key Federal politicians were: The Hon John Howard, MP, Prime Minister; The Hon Ian Campbell, MP, Minister for the Environment & Heritage; The Hon Alexander Downer, MP, Minister for Foreign Affairs; The Hon Kim Beazley, MP, Leader of the Opposition; The Hon Anthony Albanese, MP, Shadow Minister for the Environment; The Hon Kevin Rudd, MP, Shadow Minister for Foreign Affairs and International Security.

For more and updates see www.australia.gov.au (includes state links) and <http://www.australia.gov.au/govt-contacts>.

Websites

Friends of the Earth Australia
www.foe.org.au/climate, www.foe.org.au/nc/nc_climate_actions.htm
and www.foe.org.au/population

Friends of the Earth International climate campaign:
<http://www.foei.org/climate/index.html>

Climate Action Network Australia (CANA) is a large national coalition of groups, including Friends of the Earth, working on climate change
<http://www.cana.net.au/>

Make a Climate Deal:
<http://www.foeeurope.org/climatedeal>

Intergovernmental Panel on Climate Change (IPCC) is a key global scientific assessment group (watch for release of its Fourth Assessment Report)
<http://www.ipcc.ch/>

United Nations Framework Convention on Climate Change (UNFCCC)
<http://unfccc.int/2860.php>

Australian Greenhouse Office (Australian Government agency) <http://www.greenhouse.gov.au/>

Tyndall Centre for Climate Change Research
<http://www.tyndall.ac.uk/index.shtml>

Pew Centre on Global Climate Change
[www.http://www.pewclimate.org/](http://www.pewclimate.org/)

World Resources Institute climate pages
<http://climate.wri.org/>

Living Space for Environmental Refugees www.liser.org

The Corner House www.thecornerhouse.org.uk

Centre for Science & Environment has an excellent perspective on climate justice and environmental governance:
<http://www.cseindia.org/programme/geg/geg-index.htm>

Risingtide networks for climate action:
<http://www.risingtide.org.au/>, <http://risingtide.org.uk/> and <http://www.risingtidenorthamerica.org/>

CorpWatch investigates global corporate attacks on human rights and the environment : <http://www.corpwatch.org>

News on climate change: Indymedia
<http://www.climateimc.org/>
and Climate Wire
<http://www.climatewire.org/>

Some Reading

Loneragan, S and Swain, A (1999), Environmental Degradation and Population Displacement, Global Environmental Change and Human Security Project, research report no 2, May 1999. Victoria, BC, Canada.

Myers, N (1993), Environmental Refugees in a globally warmed world, Bioscience, vol 43, number 11, December 1993.

Myers, N (1994), Environmental refugees: a crisis in the making, In People & the Planet, Vol.3, No.4 1994: http://www.oneworld.org/patp/pp_eco_refugees.html

Friends of the Earth International (2001) Gathering storm: the human cost of climate change. <http://www.foei.org/publications/climate/Gatheringstorm.pdf>

Molly Conisbee and Andrew Simms (2003) Environmental Refugees: The Case for Recognition, New Economics Foundation <http://www.neweconomics.org>

Lester Brown (2004) Troubling New Flows of Environmental Refugees, Earth Policy Institute
http://earth-policy.org/Updates/Update33_printable.htm

Sarah Sexton, Nicholas Hildyard and Larry Lohmann (2005) We're a Small Island: The Greening of Intolerance. The Corner House
<http://www.thecornerhouse.org.uk/item.shtml?x=224321>

'Rising Waters' video
<http://www.itvs.org>

Tom Price, The Canary is Drowning (2002),
<http://www.guerillanews.com/globalization/doc891.html>

Australian Conservation Foundation, Climate Change and the Pacific January 2003, Virginia Simpson.

Simms, A., J. Magrath and H. Reid (2004) 'Up in Smoke: Threats From, and Responses to, the Impact of Global Warming on Human Development'. New Economics Foundation, London.
http://www.foei.org/publications/pdfs/up_smoke.pdf

