Changing the future of the world's poor?

Climate change threats to achieving the millennium development goals.

A briefing paper for Friends of the Earth Australia prepared by Stephanie Long | September 2003

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contents

Introduction

This discussion paper uses the agreed principles and objectives of the MDGs as indicators of poverty alleviation, and to identify the impact of environmental changes caused by climate change on those indicators. Specific attention is given to the small island states of the Pacific, as FoE Australia has been documenting the observed and predicted impacts of climate change in this region as a key element of the Climate Justice Campaign.

Millennium Development Goals:

The primary objective of the MDGs is to halve the number of people living in poverty by 2050, and includes a number of other key objectives. Each of the ten objectives has with it measurable indicators and the timeframe of 2000 to 2050.

Climate Change:

One of the key contemporary issues of over-consumption and exploitation of the world's resources by the industrial states is climate change. For the past 150 years industrialised nations have grossly over-consumed fossil fuels and subsequently produced the majority of the world's greenhouse gases as a result of fossil fuel combustion. The global consequence of climate change is a burden shared by all nations regardless of the responsibility for global greenhouse gas emissions, and in addition it internationally recognised that developing countries will have less capacity to adapt to climate change impacts.

> The United Nations Environment Program stated that: "The predicted impacts of climate change would probably exacerbate hunger and poverty around the world... People who are highly dependent on farming, fishing or forestry will see their livelihoods destroyed... The poor would suffer the most because they have fewer options for responding to climate change."

Whilst the connection between climate change and poverty is gaining international focus, it is also internationally regarded by the Intergovernmental Panel on Climate Change (IPCC) that mitigation of climate change (i.e. reduction in greenhouse gas emissions) could delay and reduce the damage of climate change[1]. Therefore mitigation of climate change by the world's greatest per capita emitters is as essential as adaptation programs that are aimed at assisting the world's poor through climatic change.

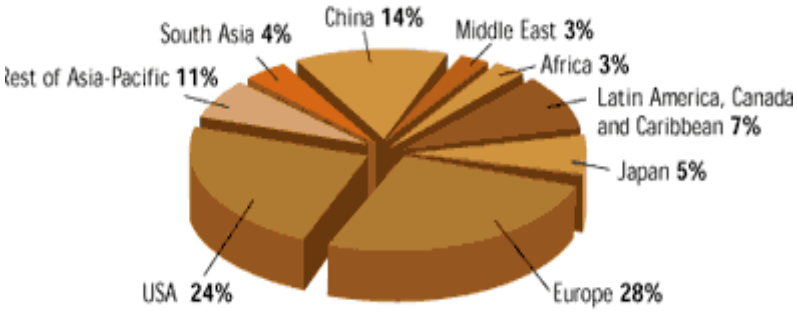
This paper is broken into three sections as follows:

1. Background to Australia's contribution to climate change
2. Detailed outline of the climate change threats to each of the MDGs
3. Overview of aid and development responses to climate change

[1] Intergovernmental Panel on Climate Change (2001) *Third Assessment Report* in the 2002 multi-agency report *Poverty and Climate Change: Reducing the Vulnerability of the Poor.*

Causes of Climate Change in Australia

Human induced climate change is caused by over-production of greenhouse gases (carbon and methane major sources of emission internationally). Australia's major source of greenhouse gas is carbon – a direct result of combustion of coal for energy, diesel from freight transport and emissions from land-clearing. Australia is reliant upon coal for over 85% of our electricity, and is also the world's greatest exporter of coal[2]. Coal has become a cornerstone of our economy despite the environmental impacts of coal mining and combustion, which is supported by federal and state subsidies on coal infrastructure, research and development, capital equipment and purchase of coal by energy intensive industries such as the aluminium smelting industry.



CO_2 Emissions from Fossil Fuel Burning by Country/Region
(Includes Cement Manufacturing)

Australia had at 1990, the greatest level of greenhouse gas emissions per capita in the world. Since 1990, we have increased out greenhouse gas emissions by a further 18% due to increased use of energy created by coal and other fossil. This behaviour is in-line with the worst-case scenario modelling produced by Commonwealth Science Industry Research Organisation (CSIRO) and Intergovernmental Panel on Climate Change (IPCC), of continued fossil fuel combustion that increases on average of 1% per year.

Funding for energy research and development primarily occurs through Co-operative Research Centres (CRC) and government departments on primary industries and energy. Since the beginning of this year (2003), the Australian government has cut funding for the only Renewable Energy CRC and has increased funding for Coal and Carbon CRCs. For the past 100 years there has been significant governmental support for fossil fuel industries (including coal), providing exploration and research assistance, development of capital equipment and industry marketing assistance, alongside direct and indirect tax subsidies and exemptions for aspects of the fossil fuel industry. The Australian Greenhouse Office's (AGOs) Greenhouse Gas Abatement Program does not support any renewable energy projects and focuses primarily in incrementally increasing the efficiency of existing fossil fuel industries – particularly coal[3].

So despite the potential for renewable energy industries within Australia's vast wind, solar and micro-hydro resources, the lack of institutional support by government has not enabled this fledgling industry to play a key role in emissions reduction.

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[2] Landsbury, N (2002) *Up in smoke: Australian coal exports to South East Asia*. Mineral Policy Institute. Report for the Climate Action Network Australia, Greenpeace Australia and Mineral Policy Institute.
[3] Chris Ready (2003) *Subsidies that encourage fossil fuel use in Australia*. Institute for Sustainable Futures.

Section Two: Climate change impacts on poverty

There has been growing awareness of the impact of environmental factors on poverty – particularly for indigenous peoples and peoples living largely subsistence based lifestyles. As climate change science has become increasingly clearer, models predict that the poorest peoples of the world are going to be the most vulnerable to climate change[4]. In particular, the predictions on increased intensity and number of extreme weather events and changing climatic conditions are believed to affect the world's poor over other population groupings due to the limited means to both adapt to climate change and influence energy policy.

MDG One: To halve the number of people who live on less than $1 per day

Economic sustainability is greatly threatened by increased extreme weather events such as cyclones, flooding, and extended periods of drought. Extreme weather events are predicted to both increase in frequency and intensity with climate change[5]. Natural disasters interrupt local and national economic systems through damage to local infrastructure such as roads and bridges, and for those reliant upon natural resources (such as fisher-folk and crop gardeners) for basic income.

Most economies in Pacific Islands are reliant upon fishing and tourism, both of which are dependent on maintaining land and sea ecosystems. Current predictions are for an incremental warming of up to 7 degrees that is predicted over the coming 100 years. This will dramatically impact on natural ecosystems, forcing tropical forest species to migrate to cooler climates and coral bleaching of reefs through increase in water temperature[6].

MDG Two: Halve the number of people suffering hunger

International climate predictions include increased periods of extreme dryness (drought) with shorter and more intense periods of rainfall (flash flooding). In addition, extreme weather events such a cyclones, bushfires and tornadoes, are predicted to become more frequent and more intense. Both of these forms of climate change will have a great impact on food systems and jeopardise food security in many regions. Crop yields are expected to decrease in the Pacific

[4] Intergovernmental Panel on Climate Change (2001) *Third Assessment Report: Summary for Policy Makers*.
[5] ibid
[6] Climate Action Network Australia (2002) *Warnings from the Bush*. and African Development Bank, Asian Development Bank, Department for International Development (UK), Directorate-General for International Cooperation (Netherlands), European Commission, Federal Ministry for Economic Cooperation and Development (Germany), Organization for Economic Cooperation and Development, United Nations Development Programme, United Nations Environment Program, The World Bank (2002) *Poverty and Climate Change: Reducing the Vulnerability of the Poor.*

region as a result of global warming, although there are predicted increases of crop yields in the northern hemisphere.

The peoples of the Pacific Islands are largely dependent upon crop gardens and fishing as local food sources. Staple crops such as Taro are now grown in pots in Tuvalu as sea-level rise has increased the salinity of soil in the islands of Tuvalu[7]. In addition, the rising sea-levels and increase height of storm surges also significantly impacts on crop gardens as salt water inundates gardens and water sources[8]. Coral bleaching will also adversely affect fisheries, as was evidenced in the 1998 El Nino drought period when a large proportion of reefs were effect in Papua New Guinea.

MDG Three: To achieve universal primary education

The impact of climate change on education standards and accessibility is connected to the range of infrastructure, resource and service interruptions caused by extreme weather events and increasing scarcity of food and water. People will struggle to maintain regular schooling for children when roads are closed, buildings are damaged or when more time is required to get food and water. The economic impacts of climatic change for peoples reliant on natural resources such as crop farmers and fisher-folk will mean increased pressure for children to engage in paid employment than attend school.

A clear example of the impact of climate change on primary education is as experienced by the Carteret islanders from January 2003. Crop gardens have been destroyed by high tides and rising sea levels and by June the islanders were reliant upon daily catches of fish. Schools were suspended indefinitely because children have developed health problems, and because they are needed to help find food. Authorities reported that the number of people close to starving has increased to more than a thousand and relocation of the islanders to PNG and Bougainville was required. In June 2003 the New Zealand and Papua New Guinea government responded with food aid, whilst in Australian this was not even reported in the daily papers.

[7] Simpson, V. (2003) *Climate Change and the Pacific*, Australian Conservation Foundation. and Price, T (2002) *The Canary is Drowning* http://www.guerillanews.com/globalization/doc891.html. 11/12/02, and Multi-agency Report (2002) *Poverty and Climate Change: Reducing the Vulnerability of the Poor.*

[8] MacLellan, N. (2001) *Climate Change in the Pacific,* presentation to 'Climate Justice Forum' in Melbourne, Australia 21 March 2001.

MDG Four: Promote gender equity

Approximately two thirds of the worlds poor are women, indicating the structural inequalities that make women more vulnerable to poverty. Climate change will only exacerbate this experience and studies have shown that women are also most vulnerable to death and injury from flooding and other extreme weather events due to their limited involvement in community planning for disaster preparedness[9].

In addition, in the Pacific Islands women are largely responsible for maintaining crop gardens and engaging in subsistence economy activities such as artisinal fishing[10]. The climate change impacts as outlined above will systemically affect women more than men due to women's proportional reliance upon these subsistence activities. Women are also more vulnerable to malaria (outlined below).

MDG Five and Six: Reduce under five years mortality by two thirds and maternal mortality by three quarters.

Women and children are most vulnerable to hunger related deaths and illness which would be indirectly exacerbated by climate change through increasing food shortages and water shortages. Health problems caused by climate change include injury from increased numbers of people exposed to flooding, weather extremes and subsequent increases in the experience of cholera, diarrhea and malnutrition; and increased heat stress and heat related deaths (as evidenced by the 11,500 people who died from the heat in France last month).

Particularly concerning is the rapid increase in the prevalence of vector-borne diseases such as malaria and dengue fever, with the susceptibility zone for vector-borne diseases growing as a result of temperature increases and seasonal abundance of mosquitoes[11]. Children and pregnant women are particularly susceptible to malaria and malaria also contributes to prenatal mortality, low birth weight and maternal anaemia[12].

[9] Multi-Agency report (2002) *Poverty and Climate Change: Reducing the Vulnerability of the Poor.*
[10] Torrice Productions (2000) *Rising Waters*
[11] McMicheal, T. and Woodruff, R et al (2002) *Human Health and Climate Change in Oceania: A risk assessment.* Report prepared for the Commonwealth Department of Health and Ageing.
[12] Multi-agency Report (2002) *Poverty and Climate Change: reducing the vulnerability of the poor.*

MDG Seven: Halt and reverse HIV/AIDS, Malaria and other diseases

The impacts of climate change on increases of malaria are outlined above. Whilst there is no direct relationship between HIV/AIDS and climate change, peoples already living with HIV/AIDS will be extremely vulnerable to food shortages. Scientists from the World Health Organisation stated at the World Climate Change Conference in Moscow that an average of 160 000 people die a year as a consequence of global warming. This figure is also said to double by 2020 as climate change effects increase. Most of the global warming related deaths are a result of malaria and malnutrition as increased temperatures, flash flooding and droughts affect vector borne diseases and food security

MDG Eight: Integrate sustainable development principles

Climate change provides an exceptionally clear understanding that the over-consumptive and resource intensive lifestyles of the global north are compromising the future of the global south as well as our own unique ecosystems, human health and infrastructure. This is an ideal opportunity to take the already occurring experiences of climate change as a direct indication that we need to move to a different energy future and land-use practices.

Renewable energy and energy efficient technologies have the ability to provide the world with our energy needs, while providing the industrial countries of the world an opportunity to move to a fairer share of resource use (given that Australia needs to reduce its consumption of fossil fuels by a factor of 18).

In addition this is a clear indication that we should no longer pressure other governments – particularly in the Asia Pacific region, to continue reliance upon Australian fossil fuels, namely coal. The Pacific Islands, due to their small land-mass and resource needs have ideal context for stand-alone renewable energy systems such as solar and micro-hydro. Provided that these energy systems are planned and installed in an appropriate manner, with the full consultation of community and skill sharing that enables communities to maintain control over their energy system, renewable energy is the manifestation of sustainable development principles.

This MDG provides fantastic scope for Australia to support the decline of energy poverty in the Pacific region, where estimates are that 80% of peoples are without reliable sources of electricity.

MDG Nine: Half number of people without sustainable access to safe drinking water

The most significant threat is the intrusion of salt water from storm surges and rising sea levels into freshwater aquifers. Atolls in particular are the most vulnerable to salt water incursion as fresh water reserves are generally restricted to a fresh water 'lens' that lies between the ground surface and the sea-water. These lenses are depleted with low rainfall, which is predicted to increase with the influences of climate change[13].

At the other end of the spectrum from limited rainfall, cyclones are predicted to become more intense and more regular, with predictions of flood risk to be up to 200 times greater by 2080 in Pacific atolls[14]. This is highly likely to result in flooding of fresh water supplies and ground water with sea-water, thereby contaminating both drinking water and irrigation water as well as increasing salinity of soils and agricultural lands[15]. Examples of sea-water flooding as a result of cyclonic events have been documented in Kiribati and Carteret Islands[16].

Increases in temperature will lead to increases in evaporation of fresh water sources. The risk that melting of glaciers and ice sheets poses is that these seasonal stores of fresh water is manifested in deceasing size of the ice boundaries each season[17]. Predictions for the Australia and Oceania region are for drier season as we shift towards more El Nino like events, such as the droughts experienced in Papua New Guinea and Australia [18]. In the 1998 droughts the Federated States of Micronesia ran out of water and the US government provided desalination equipment for the urban centre of the Marshall Islands[19].

[13] Barnett, J and Adger, N. (2001) *Climate Dangers and Atoll Countries*. Tyndall Centre for Climate Change Research. Available from www.tyndall.ac.uk/publications
[14] Barnett and Adger (2001) *Climate Dangers and Atoll Countries*. Tyndall Centre for Climate Change Research. Available from www.tyndall.ac.uk/publications
[15] Barnett and Adger (2001) ibid.
[16] Maclellan (2001) *Climate Change in the Pacific,* presentation to 'Climate Justice Forum' in Melbourne, Australia 21 March
[17] Shiva, V. (2002) Water Wars: Privatisation, Pollution and Profit. Pluto Press.
[18] New Economics Foundation (2002) The End of Development? Global warming, disasters and the great reversal of human progress. Available from www.neweconomics.org.
[19] Maclellan (2001) ibid.

MDG Ten: Achieve significant improvement in the lives of 100 million slum dwellers

There is a greater chance that slum dwellers will live in flood planes and ecologically vulnerable areas than other people. The total number of Pacific Island peoples predicted to be exposed to costal flooding by 2055 is 92,340[20] - the greater proportion of populations across the Pacific. This is particular concerning for the low-lying islands of the Pacific where it is predicted that entire islands will become inundated by sea-water within the coming decades.

The combined impacts of food, water, health and infrastructure will render many islands of the Pacific uninhabitable before the sea-level inundates islands, thus creating in some cases entire nations of environmental refugees. Norman Myers of Oxford University predicts that by 2050 there will be 75 million climate refugees in the Asia Pacific region alone, and 150 million worldwide.

On February 25 this year, UK Prime Minister Tony Blair said "*Climate change … remains unquestionably the most urgent environmental challenge. The facts are clear: Red Cross International has documented the number of people affected by floods worldwide to have already risen from 7 million in the 1960s to 150 million today.*"

In simple terms not only will climate change increase the potential for slum dwellers to remain in absolute poverty, it will also render some nations of the Pacific without land for people to reside on.

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[20] McMicheal, T. and Woodruff, R et al (2002) *Human Health and Climate Change in Oceania: A risk assessment.* Report prepared for the Commonwealth Department of Health and Ageing.

Section Three: Aid and Development Responses to Climate Change

The federal response to global warming impacts on the South Pacific has been through three AusAID (Australian Agency for International Development) funded pilot adaptation projects, which are largely monitoring and assessment projects[21]. However, given the intensity of predicted impacts for the South Pacific, the experiences already occurring, the highly vulnerable nature of the 'soft' natural barriers to weather extremes in the pacific (beaches, coral reefs and atoll structures) the greatest form mitigation and assistance to adaptation Australia could provide to the South Pacific is to instigate deep cuts in our greenhouse gas emission and move away from a fossil fuel based economy.

The Department for International Development in the UK is investigating the impacts of climate change on poverty and the sustainable achievement of the MDGs. The New Economics Foundation and the Bangladesh Centre for Advanced Studies have published a report on the threats that climate change poses for each of the MDGs, thus indicating the level of international recognition of this issue.

In preparation for the eighth conference of parties to the United Nations Framework Convention on Climate Change, several agencies (both governmental and intergovernmental, including the World Bank and Asian Development Bank) produced a report on poverty and climate change. This report makes some very clear predictions that climate change will exacerbate poverty and undermine poverty alleviation programs, unless climate change is an integral aspect of program planning and implementation. This publication is available at www.worldbank.org/povcc.

Each year the Red Cross/ Red Crescent Society produces the Worlds Disasters Report, an annual global survey of humanitarian trends. In 2001 the report stated that the previous year's natural disasters were the worst on record and "in many cases, nature's contribution to 'natural' disasters is simply to expose the effects of deeper, structural causes - from global warming and unplanned urbanisation to trade liberalisation and political marginalisation. The effects of (human) actions are often evident - many natural catastrophes are un/natural in their origins." Red Cross estimates that there are currently 25 million people displaced around the world because of environmental causes – making up 58 per cent of the world's total refugee population.

The Red Cross/Red Crescent Society established the Climate Centre in the Netherlands in 2001 in recognition of the increasing numbers of people effected by climate change and increasing experience of extreme weather events. The purpose of the Centre is to increase the Red Cross International Federation's preparation and response to decreasing the vulnerability people face as a consequence of climate change. The Centre is a research and planning centre, which will assist national groups and regional federations respond to increasing climate change.

In September 2003, the Australian Council for Overseas Aid (ACFOA) passed a unanimous resolution at the Annual General Meeting recognising the threat that climate change poses for the world's poor and the Australian government's limited

[21] See AusAID " The Overseas Aid Program and the Challenge of Global Warming." and AusAID "The Challenge of Global Warming: Australia's Response."

actions to reduce greenhouse gas emissions in Australia. As an umbrella council for 83 major aid and development non-government organisations, ACFOA recognised the inadequate response of the Australian government to date on climate change and the need for this issue to be considered a humanitarian issue in the international effort to alleviate poverty.

In addition ACFOA called for reform of the government assisted aid budget to only fund renewable energy projects and halt funding of fossil fuel based energy projects. AusAID's energy portfolio has had a trend of funding renewable energy projects in the late 1990s. However since the year 2000 there has been no funding for solar energy projects and a dramatic increase for oil and nuclear projects funded by AusAID.

Friends of the Earth Australia prepared the resolution for ACFOA based on the research undertaken on the impacts of climate change in the Pacific region. In response to the resolutions

Friends of the Earth Climate Justice campaigner Stephanie Long said "Climate change is a clear example of industrialised countries contributing to an unsustainable and un-liveable world for the world's most vulnerable people and particularly the peoples of the Pacific Islands."

Resolutions passed at the ACFOA Congress 2003:

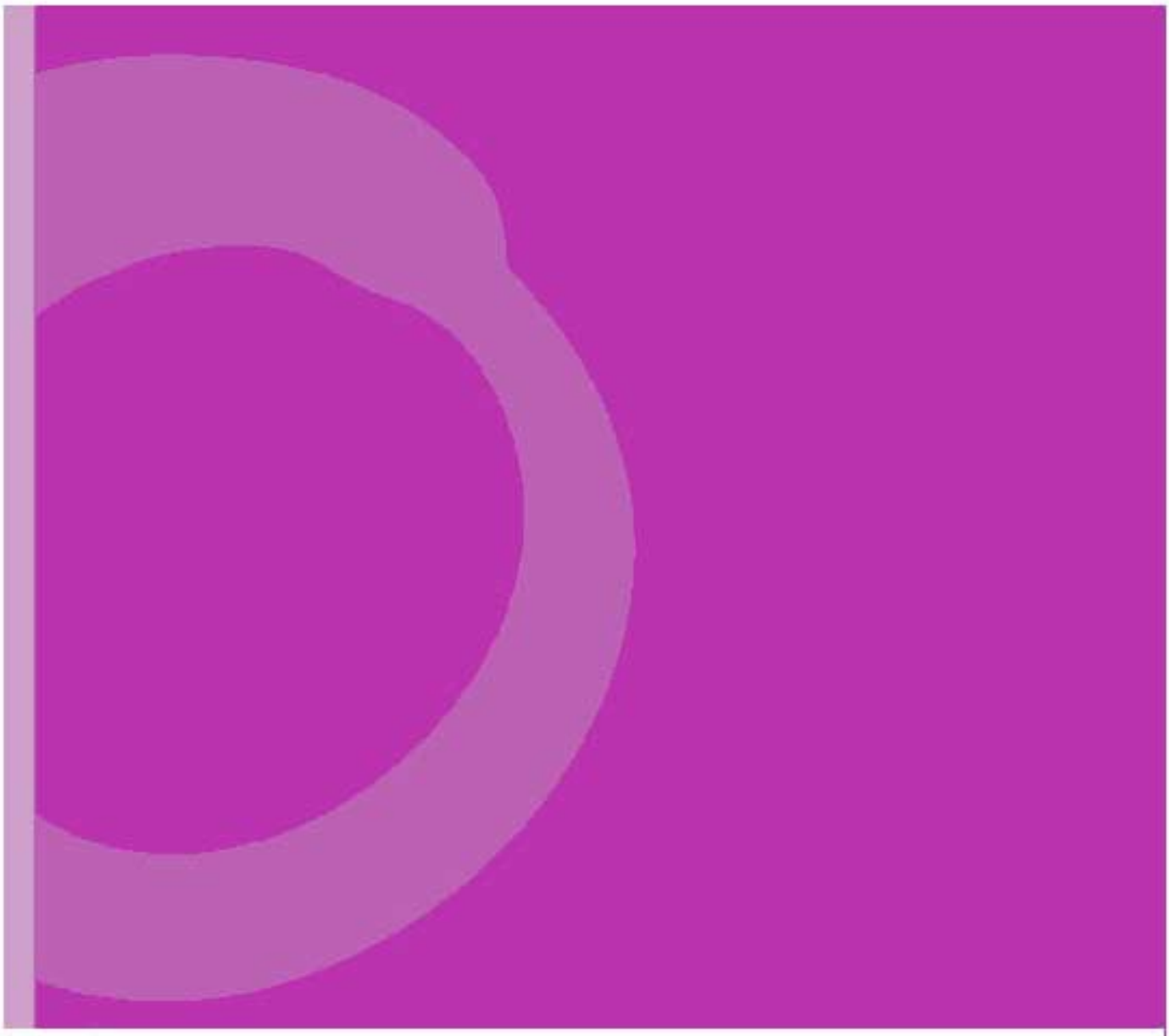
1. The ACFOA Council acknowledges the extreme threat climate change poses to achieving the Millennium Development Goals, particularly in the small island developing states of the Pacific.

2. The ACFOA Council acknowledges the work of AusAID in beginning to investigate the impacts of climate change on development; highlights the urgent need to reduce Australia's emissions of greenhouse gases and calls on AusAID to investigate the impacts of climate change on the achievement of the MDGs and AusAID's primary objective relating to poverty reduction.

3. The ACFOA Council calls on AusAID to phase out funding nuclear, fossil fuel and climate intensive energy projects, and shift energy portfolio to 100% renewable energy sources using appropriate technology.

Table 2: Summary of climate change impacts on the MDGs

MDG	Climate change barriers
1. To halve the number of people who live on less than $1 per day	• Economic security given increase in weather extremes • Diminishing bio-diversity and access natural resources.
2. Halve the number of people suffering hunger	• Dimished crop yields • Reduced fisheries due to coral bleaching and increased calcification of coral • Increasing soil salinity – particularly in atolls and small island states.
3. To achieve universal primary education	• Lifestyle demands of increased time seeking food, water and cash income reduces time for education • Increased environmental refugees and ill-health impacts as barriers to attending classes
4. Promote gender equity:	• impacts on women as are already 2/3 of the world's poor, • women's greater reliance on subsistence and natural resource for income
5. Reduce under five years mortality by two thirds:	• health impacts on children as are particularly vulnerable to flood related, vector-borne and hunger related diseases
6. Reduce maternal mortality by three quarters	• health impacts on mothers, particularly given maternal vulnerability to malaria
7. Halt and reverse HIV/AIDS, Malaria and other diseases	• Malaria and other vector-borne diseases predicted to dramatically increase with extreme weather events, increased flooding and temperature rises. • Malaria zone extended, particularly in Australia-Oceania
8. Integrate sustainable development principles.	• Continued financing of fossil fuel based technology/development at the expense of local communities and the global atmosphere
9. Half number of people without sustainable access to safe drinking water.	• Increased water shortages as a result of changes in rainfall patterns, greater periods of drought and salt water incursion into fresh water reserves.
10. Achieve significant improvement in the lives of 100 million slum dwellers	• sea-level rise for urban dwelling poor, for the vast majority of the world's poor living in flood prone areas (particularly in Asia). • loss of arable land, particularly in coastal areas.



Friends of the Earth Australia is a member group of the International Friends of the Earth (FoEI) Federation.

Unlike other international environmental networks, FoEI is decentralized and unites nearly 5,000 local grassroots activist groups worldwide. With close to one million members and supporters in every corner of the world, FoEI is able to synthesize the local with the global and catalyse coordinated action between members in South, North, East and West.

FoE Australia has been working on Climate Justice since 2001. For further information contact Stephanie Long on stephanie.long@foe.org.au or see www.foe.org.au/nc/nc_climate.htm. Phone 3846 5793

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