CHAIN REACTION

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FOOD FEATURE

you are what you eat!

BIOFUELS OR BIOFOOLS?

IF MEAT IS MURDER, WHAT'S VEGETARIANISM?

NANOTECHNOLOGY IN FOOD

THE CONSCIOUS COOKBOOK

WATER INTENSITY OF FOOD

- THE FOREST WARS
- WEST MALLEE PROTECTION
- GREENHOUSE MYTHS AND SOLUTIONS
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The Urban Orchard, a homegrown fruit and vegetable exchange established by Friends of the Earth Adelaide and the Goodwood Goodfood Co-op. Photo: Joel Catchlove

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Below: Canberra February 11th-12th February, Northern Territory Intervention rally and The Apology. Photo: Jessie Boylan

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Chain Reaction is produced in Melbourne and Katoomba. We acknowledge the traditional owners of these lands and the fact that Indigenous land has never been ceded.

Friends of the Earth
www.foe.org.au

the apology

Today we honour the Indigenous peoples of this land, the oldest continuing cultures in human history.

We reflect on their past mistreatment.

We reflect in particular on the mistreatment of those who were Stolen Generations – this blemished chapter in our nation's history.

The time has now come for the nation to turn a new page in Australia's history by righting the wrongs of the past and so moving forward with confidence to the future.

We apologise for the laws and policies of successive Parliaments and governments that have inflicted profound grief, suffering and loss on these our fellow Australians.

We apologise especially for the removal of Aboriginal and Torres Strait Islander children from their families, their communities and their country.

For the pain, suffering and hurt of these Stolen Generations, their descendants and for their families left behind, we say sorry.

To the mothers and the fathers, the brothers and the sisters, for the breaking up of families and communities, we say sorry.

And for the indignity and degradation thus inflicted on a proud people and a proud culture, we say sorry.

We the Parliament of Australia respectfully request that this apology be received in the spirit in which it is offered as part of the healing of the nation.

For the future we take heart; resolving that this new page in the history of our great continent can now be written.

We today take this first step by acknowledging the past and laying claim to a future that embraces all Australians.

A future where this Parliament resolves that the injustices of the past must never, never happen again.

A future where we harness the determination of all Australians, Indigenous and non-Indigenous, to close the gap that lies between us in life expectancy, educational achievement and economic opportunity.

A future where we embrace the possibility of new solutions to enduring problems where old approaches have failed.

A future based on mutual respect, mutual resolve and mutual responsibility.

A future where all Australians, whatever their origins, are truly equal partners, with equal opportunities and with an equal stake in shaping the next chapter in the history of this great country, Australia.

Prime Minister Kevin Rudd
Parliament House
February 12, 2008

FoE Australia welcomes the national apology to the stolen generations delivered by Prime Minister Kevin Rudd in Canberra on February 12, but it would be remiss of us to fail to note that racist policies - such as the Northern Territory 'intervention' - persist under the new Labor government. The Liberal and Labor parties have apologised for past policies and have promised – in the words of the apology – "to turn a new page". But just and non-discriminatory policies still give way to political opportunism by the major parties. Corporate interests are still consistently privileged over Indigenous rights. We still have a way to go.

SORRY

All photos taken in Canberra February 11th-12th February, Northern Territory Intervention rally and The Apology.
Photo opposite page: Yami Lester, Yankunytjatjara Elder standing in front of Parliament House, Canberra. *Photos by Jessie Boylan*

Obituary: PIP STARR

Pip Starr (a.k.a. Stuart Hill), documentary film-maker and activist, died on January 22.

Pip worked closely within the activist community in Melbourne for 10 years as an independent film-maker. He was involved in the EngageMedia collective, Ska TV, Bent TV, and the SpaceStation Video Lab.

One of his earlier films documented a Reclaim the Streets protest in Sydney in 1999. Pip said: "No time was more fun than the 7th Reclaim the streets in Sydney ... It remains my favorite doco still. I think I've made better quality doco's since, but none have been so much fun."

Aboriginal activist Gary Foley introduced Pip to the campaign against uranium mining at Jabiluka in 1998, which resulted in the film *Fight for Country*. "Gary made me understand the importance of film making as a documentation of history," Pip wrote on his website.
In 2002, Pip documented a break-out from the Woomera detention centre. The resulting film - *Through the Wire* - is stunning and moving.
Sydney activist Tom McLoughlin noted that: "Pip's work on the ground was not theoretical, his camera was helping people survive, and feel safer, and bring a risk of accountability and discipline on the security, a long way from the big city in a cowboy frontier style of governance. We loved him being there doing that work."

For many years, Pip worked closely with Friends of the Earth, especially on climate change, anti-nuclear and indigenous issues. Pip and his mum Helen came on the 2006 Radioactive Exposure Tour, when Pip was working on what turned out to be his last anti-nuclear film, *Atomic Country*. Pip also produced a film about the Roxby Downs uranium mine, Fire and Water.

Pip brought the plight of the Carteret Islanders to world attention with his videos, photos and activist reporting. Carteret Islanders will have to relocate to mainland Bougainville as their home is becoming uninhabitable due to climate change.

Another film - *The Okapa Connection* - follows the journey of a shipment of fair trade organic coffee from the mountains of PNG. The film reveals how fair trade and organic production methods are beginning to transform the lives of the coffee farmers in the remote and beautiful mountains of PNG.

Many of Pip's films were made in collaboration with Bill Runting under the banner of Rockhopper Productions. Another frequent collaborator was composer Mark Daniel

Pip described his film-making philosophy on his website: "I'm attracted to global stories of importance. I believe documentary to be the most engaging and beautiful art form ever invented, and I always aim to make documentaries that live up to this ideal, and are as entertaining as they are informative. While recognizing that there are things about the world that we would do well to change, I also appreciate that the world is a magnificent and beautiful place that must be celebrated, loved and enjoyed."

Pip wrote: "My role in the scheme of things as I see it, is to create media that does not have a corporate or government agenda. As such the distribution of and income from my documentary film works is rather less

Images: (Opposite page from left to right) Photograph of Pip Starr.
Anti-nuclear activists planting a tree in Pip's memory, Commonground, Victoria, February. *Photo by Jessie Boylan.*
Lake Eyre, 2006 Radioactive Exposure Tour. *Photo by Pip Starr.*

(This page) Kevin Buzzacott, 2006 Radioactive Exposure Tour.
Children living near the Mekong Delta, Vietnam.
Cartaret Islands. *All photos by Pip Starr.*

(Below) Blanche Mound Spring, SA, 2006 Radioactive Exposure Tour. *Photo by Pip Starr.*

than it would be than if I worked for or with a large organization. The freedom to say what I want from a political and creative perspective is far more important to me than money or fame, so I'm content to work on a small scale and maintain my independence."

Pip worked as a part-time nurse in the Alfred Hospital in Melbourne. His interests, as described on his facebook, included film, activism, nature, beaches, politics, food, travel, human rights and the environment, gay culture, art, and history. Some other interests included Charles Dickens (hence the name Pip) and penguins (hence the name Rockhopper Productions).

Pip's contribution to activism and activist film-making was enormous. Friends of the Earth extends our deepest sorrow and sympathy to Pip's mum Helen and other family members, and to his partner Gurney.

A number of Pip's videos are posted at:
<www.starr.tv>
<www.engagemedia.org/author/pipstarr>
<www.youtube.com/user/starrpip>

Pip's photos are posted at:
<www.flickr.com/photos/16944927@N02>

Pip's facebook:
<www.facebook.com/profile.php?id=598972134>

A 2001 interview with Pip talking about his film-making:
<www.milkbar.com.au/local/archive_12.html>

A short 2007 interview with Pip talking about his climate change film:
<www.youtube.com/watch?v=0_273AU-cNI&e>

FoE AUSTRALIA NEWS

Friends of the Earth, Australia is a federation of independent local groups. You can join FoE by contacting your local group. For further details, see: <www.foe.org.au>. There is a monthly email newsletter which includes details on our campaigns here and around the world. You can subscribe via the FoEA website.

FoE Australia National Meeting

FoE Australia's national meeting was held in January at Shipley Plateau in the Blue Mountains. While the cold weather was hard work, it was not enough to dampen our conversations and planning. This was a hugely productive meeting. There were two public events attached to it, both in Katoomba – one on nanotechnology and food, and a report on the climate change negotiations recently held in Bali and a fundraiser for the FoEA climate campaign.

Some major decisions from the meeting:

• We will bring together the various local campaign activity on food into a national real food campaign. Gemma Schuch of FoE Brisbane will co-ordinate this development.

• We agreed to set up a series of 'sustainable supermarkets' around Australia in coming years, with the first one set to open in Melbourne in Spring 2008.

• We agreed on a new structure for our committee of management (CoM). This change gives greater financial and strategic oversight to the CoM, consistent with the need to keep developing our governances structures as our network grows.

• There is a new affiliate member from SA – West Mallee Protection (WMP). This group supports the Kokatha Mula Nation peoples and projects. WMP emerged from an alliance between environmentalists and Kokatha Mula people who share concerns and see the need for positive action to protect the outback Ceduna region.

• We agreed to establish a new Portwatch campaign, which will look at various aspects of the impacts of sea travel, from greenhouse emissions to the development and expansion of ports. This will be co-ordinated by Teri Shore.

• We established a new campaign focussed on Chile, which aims to support the Mapuche people in their campaigns to protect their traditional lands.

Many thanks to Wayne for his hospitality and to Nat, Sod, Pete and Amy and other locals who organised such a productive meeting.

The mid-year meeting will be held in the Hunter Valley, immediately before the climate camp planned for July.

Camp for Climate Action

Camp for Climate Action (Australia) is a collaboration between numerous groups and individuals who are opposed to the expansion of the coal industry at a time when immediate action to prevent dangerous climate change is most urgent.

The Camp is inspired by previous similar gatherings held in the UK in 2006 and 2007. It will be a participatory, sustainable space, where people are invited to share, learn and take action. It will be one of a number of climate camps happening in Europe, North America, and Australia.

The Camp will be taking place mid-2008 in the Hunter Valley or Newcastle. Newcastle is host to the world's biggest coal port. Fed by mines in the Hunter Valley, the port and the mining industry are currently undergoing major expansion supported by federal and state governments.

More information: <www.climatecamp.org.au>.

Climate Movement Convergence

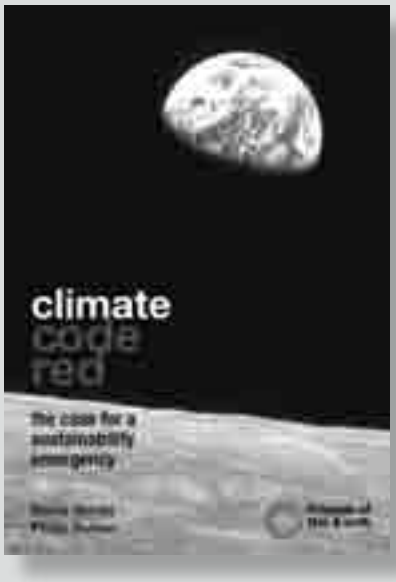
In early February, FoE worked with a number of other groups to host the first ever climate movement convergence in Victoria, bringing together more than 200 people, representing around 80 groups active in climate change issues.

The convergence provided a space for people from inner city, suburban and rural areas to develop campaign plans and networks with green groups, trade unions, and social justice and aid and development groups. While it was not intended to have a single outcome from the gathering, the anti-coal campaign was certainly strengthened by the day.

Other outcomes included the development of a network focussing on climate change issues in the context of the local government elections in Victoria in late 2008.

Climate Code Red

FoE recently released the report Climate Code Red: The Case For a Sustainability



Emergency, written by David Spratt of CarbonEquity and Philip Sutton of the Greenleap Strategic Institute.

The report finds that Labor's policy of a 60% cut in emissions by 2050 is consistent with global warming of three degrees. The dangers of such a level of warming are clearly laid out in the report. It concludes that Labor has followed the Stern report in developing a framework for setting targets far short of those required to avoid dangerous climate change.

The report is available at: <http://climatecodered.net>

FoE International meets in Swaziland

Over the past four years FoE International, a federation comprising 70 national member groups, has committed to developing and implementing a strategic review of the federation's structure, vision and organisational management processes.

How to mould and guide a federation with over one million members, working from over 5,000 local groups, representing 70 nations to develop a new strategic plan? The answer: slowly!

Nevertheless, the review is complete so 2008 brings the implementation stage. Last November, three Australian FoE members – Derec Davies, Sam La Rocca, and Stephanie Long – travelled to Swaziland to contribute to the first FoE International's strategic implementation meeting which followed from the previous four years of review and development.

What a wonderful and remarkable experience. A gathering in Africa of activists from around the world, predominately sharing three primary languages (English, Spanish, and French), all working to transform our burdened planet into a safe and sustainable home for our future. And what better way to kick start proceedings than to host an international conference on democracy in the world's last standing ultimate monarchy.

The job was daunting – synthesize the diverse array of national positions and social change ideologies into overarching strategic themes and then design the action plans for the federation for the coming years. The areas of work were Programme Implementation (thematic campaign consolidation), Communications, Learning, Funding, and Membership Development.

All this whilst considering the revised organisational vision: "A peaceful and sustainable world based on societies living in harmony with nature. A society of interdependent people living in dignity, wholeness and fulfilment in which equity and human and peoples' rights are realised. A society built upon peoples' sovereignty and participation, founded on social, economic, gender and environmental justice and free from all forms of domination and exploitation, such as neo-liberalism, corporate globalisation, neo-colonialism and militarism."

FoE is striving to develop new ways at working together, traversing the diverse needs between it's workers and their supporting communities, bridging connections between various cultural divides, and exploring new models to approach technical and economic disparities.

More information: <www.foei.org>

EARTH NEWS

Renewable Energy Growth

One hundred and forty researchers contributed to the Renewables 2007 Global Status Report, prepared by the Renewable Energy Network for the 21st Century (REN21) in collaboration with the Worldwatch Institute.

The report details the expansion of renewable energy markets, policies, industries, and rural applications around the world. In 2007, global wind generating capacity is estimated to have increased 28%, while grid-connected solar photovoltaic (PV) capacity rose 52%. The renewable energy sector now accounts for 2.4 million jobs globally, and has doubled electric generating capacity since 2004, to 240 gigawatts. More than 65 countries now have national goals for accelerating the use of renewable energy and are enacting far-reaching policies to meet those goals.

According to the Worldwatch Institute's State of the World 2008 report, an estimated US$52 billion was invested in renewable energy sources in 2006, up 33% from 2005, while preliminary estimates indicate that the figure increased to US$66 billion in 2007.

The Renewables 2007 Global Status Report can be downloaded from REN21 <www.ren21.net> or the Worldwatch Institute <www.worldwatch.org>.

UN Sets Up Climate Neutral Network

The United Nations Environment Programme (UNEP) launched a new online network in February to help countries, cities and firms aiming to be 'climate neutral' exchange ideas on ways to cut greenhouse gas emissions. The Climate Neutral Network will connect people around the world who have committed to become 'climate neutral' by reducing and offsetting their emissions.

Five countries have announced their goal to achieve carbon neutrality under the UNEP project – Monaco, Costa Rica, Iceland, Norway and New Zealand. Four cities also joined the UNEP scheme in February, and five companies. The cities are Arendal in Norway, Vancouver on the west coast of Canada, Vaxjo in Sweden and Rizhao in northern China.

UNEP aims to be climate neutral itself in 2008, with the whole United Nations due to follow.

More information: <www.unep.org/climateneutral>.

EU Fuelling Human Rights Disaster In Indonesia

Palm oil production for food and biofuels is resulting in wide spread human rights abuses in Indonesia according to a report released in February by Friends of the Earth (UK), Sawit Watch, and LifeMosaic.

Losing Ground exposes the huge social problems being fuelled by EU targets to increase the use of biofuels in transport. The report says many of the 60-90 million people in Indonesia who depend on the forests are losing their land to palm oil companies. Eighty-five percent of the world's palm oil is produced in plantations in Indonesia and Malaysia.

The report reveals that oil palm companies often use violent tactics to grab land from indigenous communities with the collusion of the police and authorities. Previously self-reliant families, who were able to meet their own needs from the forest around them, complain of being tricked into giving up their land with the promise of jobs and new developments. Instead they end up locked into debt and poorly paid work, while the bounty of the rainforest is replaced with monotonous oil palm plantations. Pollution from pesticides, fertilisers and the pressing process is also leaving some villages without clean water.

The European Commission has recently proposed a target for 10% of road transport fuel to come from biofuels by 2020 in an attempt to reduce carbon dioxide emissions. These targets will fuel a huge expansion in the amount of land used to grow oil palm. The Commission is proposing sustainability criteria for biofuels but they do not include any attempts to address the social impacts of biofuel production.

Meanwhile, a University of Minnesota and Nature Conservancy study, published in Science in early 2008,

Photo: www.foe.co.uk/resource/reports/losingground.pdf

found that the carbon lost through land clearing for biofuels outweighs the greenhouse gas savings that can come from biofuels.

Losing Ground can be downloaded at: <www.foe.co.uk/resource/reports/losingground.pdf>.

Food Crisis

The United Nations warned in February that it no longer has enough money to keep global malnutrition at bay this year in the face of a dramatic upward surge in world commodity prices.

With voluntary contributions from the world's wealthy nations, the UN's World Food Programme (WFP) feeds 73 million people in 78 countries, less than 10% of the total number of the world's undernourished. Its agreed budget for 2008 was US$2.9bn. But with annual food price increases around the world of up to 40% and dramatic hikes in fuel costs, that budget is no longer enough even to maintain current food deliveries.

The shortfall is all the more worrying as it comes at a time when populations, many in urban areas, who had thought themselves secure in their food supply are now unable to afford basic foodstuffs. Afghanistan has recently added an extra 2.5 million people to the number it says are at risk of malnutrition.

The impact has been felt around the world. Food riots have broken out in Morocco, Yemen, Mexico, Guinea, Mauritania, Senegal and Uzbekistan.

WFP officials say the extraordinary increases in the global price of basic foods were caused by a "perfect storm" of factors: a rise in demand for animal feed from increasingly prosperous populations in India and China, the use of more land and agricultural produce for biofuels, and climate change.

Joachim von Braun, head of the International Food Policy Research Institute, said. "I estimate [high income growth] is half the story. The biofuels is another 30%. Then there are weather-induced erratic changes which caused irritation in world food markets. These things have eaten into world levels of grain storage. The lower the reserves, the more nervous the markets become, and the increased volatility is particularly detrimental to the poor who have small assets. The climate change factor is so far small but it is bound to get bigger."

In the three decades to 2005, world food prices fell by about three-quarters in inflation-adjusted terms. Since then they have risen by 75%, with much of that coming in the past year. Wheat prices have doubled, while maize, soya and oilseeds are at record highs.

State Of The World

The Worldwatch Institute has released State of the World 2008: Innovations for a Sustainable Economy.

The focus of the report is on the innovations that will be needed to make a sustainable economy possible.

The report has chapters on seeding the sustainable economy, a new bottom line for progress, rethinking production, the challenge of sustainable lifestyles, meat and seafood – the global diet's most costly ingredients, building a low-carbon economy, improving carbon markets, water in a sustainable economy, banking on biodiversity, the parallel economy of the commons, engaging communities for a sustainable world, mobilising human energy, investing for sustainability, and new approaches to trade governance.

State of the World 2008: Ideas and Opportunities for Sustainable Global Economies is available for purchase at <www.worldwatch.org/stateoftheworld>

Orang Rimba protest against logging and palm oil in Jambi Province, Sumatra
Photo courtesy of Watch Indonesia!

Biofuels or Biofools?

Almuth Ernsting

On 17 September last year, Indonesian elite police forces opened fire on indigenous members of the Orang Rimba community who had collected some palm fruits on an oil palm plantation in Sumatra.

The Orang Rimba, or Forest Nomads, have lived sustainably for hundreds of years in Sumatran rainforests. Today, the forest on which they depend is being cut down, burnt and turned into vast oil palm plantations. Many are forced to beg or take food from plantations where they are vulnerable to violence, and they suffer from hunger and malnutrition.

Tens of millions of hectares worldwide have been converted to grow biofuels (a.k.a. agrofuels), and hundreds of millions of hectares are being eyed by biofuel corporations and lobbyists. The land grab now underway has devastating impacts on food sovereignty and food security.

On the one hand, land on which small farmers, pastoralists, forest communities and indigenous peoples depend for their livelihood is being converted to biofuel monocultures. On the other hand, grain and vegetable oil on the world markets, and particularly in the US and Europe is being diverted to biofuels rather than food, leading to scarcity and rocketing prices.

The situation faced by the Orang Rimba is replicated across Indonesia and many other countries in the global South. According to Watch Indonesia! some 45 million people in Indonesia depend on rainforests for their food and livelihoods. The government is planning to convert 35 million hectares of land to biofuel crops, 20 million of them to oil palms. This will mean the end for most of Indonesia's remaining forests, on which tens of millions more people depend than would be employed on the new plantations.

In Argentina, food sovereignty is being destroyed by the expansion of big agribusiness plantations for biofuels. Since the late 1990s, GM soya has displaced much of the country's dairy industry, grain, potato and vegetable production, as well as old-growth forests. Rural and urban malnutrition rates have risen sharply as a result. Up to 100,000 small farmers and their families have been forced off the land). Indigenous peoples in the Chaco forest face destitution as their forest is cut down for soya, and deaths from starvation and illness have been reported. The government aims to supply 10% of Europe's growing biofuel demand and the rate of soya expansion is increasing rapidly. Adolfo Boy and Jorge Rulli of Grupo de Reflexion Rural in Argentina warn, "Our country has become a laboratory for experiments in rural genocide".

Food Prices

Worldwide, 2007 saw the biggest grain harvest on record, yet global food prices have gone up by 75% since 2005, the price of wheat and rice has doubled and prices for soya, maize and oilseeds are at record levels. Meat and dairy prices are rising as grain, previously used for animal feed, is being diverted to ethanol.

Even in richer countries, more people are going hungry due to high food prices. A recent Hunger Survey in the US found that a record 13% of people said that they or a family member had gone to bed hungry within the past month.

In poorer countries, impacts are even more catastrophic. A 2001 study showed that for every 1% increase in food prices, food consumption in poorer countries decreases by 0.75%, as more people go hungry. In January, the World Food Programme and the government of Afghanistan appealed for food aid for an additional 2.55 million people in Afghanistan who can no longer afford staple food because of the rise in wheat prices.

The World Food Programme warns that it will have to cut food aid, because its budget is not big enough to keep up with increasing food costs. Last October, Jean Ziegler, UN Special Rapporteur on the Right to Food, called the diversion of cropland to produce biofuels "a crime against humanity", and called for a moratorium on biofuel production. In doing so, he joined similar moratorium calls made by hundreds of groups in North and South.

Agribusiness

Speculation and agribusiness monopolies over 'globalised' food markets play a major role in the food price spike. Biofuels are increasing agribusiness control of food production and markets and aggravating those trends. At the same time, corporate alliances between agribusiness and oil companies are forged which ensure that, as the price of oil climbs, so does the price of food. This, as well as the explosive growth in demand for 'food for cars', explains the scale of today's food price crisis.

Land conversion to biofuel monocultures is being promoted at a time when agriculture is under growing threat from global warming, freshwater depletion and soil erosion. The collapse of agriculture in the Murray-Darling region is mirrored by desertification across ever larger areas in northern China, Afghanistan, northern Africa, Nigeria, Brazil and many other countries. Yet biofuel feasibility studies on which governments' biofuel policies are based

Orang Rimba protest against logging and palm oil. *Photo courtesy of Watch Indonesia!*

assume that the climate will not change and that yields will grow substantially in coming decades.

If climate change, freshwater depletion and soil erosion threaten future food security, then biofuels will greatly aggravate all those impacts. Growing 1kg of corn for ethanol uses between 1,000 and 1,800 kg of water.

Through rainforest and peatland destruction, biofuels are one of the quickest way to tip us into runaway global warming. Peatlands in Indonesia and Malaysia alone hold up to 50 billion tonnes of carbon. All are likely to be drained in the next few years, largely for palm oil for biodiesel, committing all the carbon in the peat to the atmosphere. This will almost certainly make it impossible to keep global warming below two degrees, even if the most drastic curbs to fossil fuel burning are made. According to two recent peer-reviewed studies, converting temperate grasslands to biofuels or turning cropland previously taken out of production into biofuel monocultures releases considerably more carbon than is saved by burning less fossil fuels.

The clear beneficiaries of the biofuel boom are the agribusiness and oil companies, the car manufacturers, biotech firms and venture capitalists that together make up the biofuel industry.

The global peasant network La Via Campesina warns, "To avoid a major food crisis, governments and public institutions have to adopt specific policies aimed at protecting the production of the most important energy in the world: food!"

Like many other civil society groups, they call for a fundamental shift away from industrial agriculture, towards an agricultural system where food production is controlled by small-scale sustainable farmers.

Food sovereignty would not only guarantee the right to food and address inequality and land Food sovereignty would not only guarantee the right to food and address inequality and land conflicts, but also reduce greenhouse gas emissions, protect biodiversity, soil and water. Biofuel targets, tax breaks and other subsidies and incentives in countries like Australia, the US and in Europe are rapidly moving us in the wrong direction. Food sovereignty and sustainable farming cannot succeed unless those dangerous policies are scrapped.

Almuth Ernsting is a campaigner with Biofuelwatch.

More information:
* Biofuelwatch <www.biofuelwatch.org.uk>
* GRAIN, special issue of Seedling, 'No to the Agrofuel Craze', June 2007, <www.grain.org/nfg/?id=502>.

Palm oil plantations, Jambi Province, Sumatra
Photo courtesy of Watch Indonesia!

If Meat Is Murder, What's Vegetarianism?

Raj Patel

With all the evidence that industrial meat production is bad for the environment, cannot be sustained equitably for the planet, is a profligate waste of resources, accelerates global warming, and is a vector for all kinds of nasty diseases, we might be tempted to enjoin everyone to go vegetarian. And there's much merit to the idea.

Research shows that vegetarians and vegans have a smaller carbon footprint than their carnivorous counterparts. In the United States, where about 2.5% of the population is off meat, there is a marked difference between the annual CO2 output of vegetarians and the average population. One recent study found that an ordinary US diet contributed nearly 1.5 tons more CO2 than a vegetarian one – and that switching from meat-eating to vegetarian could cut US national greenhouse gas emissions by up to 6%.

Vegetarians can also feel smug about their health. A range of studies have shown that vegetarians have a lower chance of dying from stroke and heart disease than the average population. One of the largest studies of its kind was carried out in the UK, where 33,883 meat eaters were compared with 31,546 non meat eaters. In that study, meat eaters were more likely to smoke and to be more overweight. But a range of studies also conclude that for other diseases, vegetarians and similarly-health conscious meat eaters fare equally well.

It's the 'similarly health-conscious' criterion that ought to set off alarm bells. Because vegetarianism isn't spread randomly through society. Being vegetarian is associated with other kinds of health-increasing behaviour, and circumstances.

In the US, recent survey data find a link between occupation and diet. Manual workers tend to eat more meat, and beef in particular, than their counterparts in service or professional occupations. Further, cutting back on meat is linked to higher levels of education but not necessarily with being wealthier, which suggests there's something going on that is more about culture and education.

This leads to an interesting twist to our thinking about meat and its absence. Certainly it's true that becoming vegetarian can improve your life chances, other things being equal. But precisely because other things aren't equal, the commandment to be vegetarian isn't one that all of us can follow with equal ease. There are a host of social obstacles that stand between the majority of the population in the Global North, and sustainable eating patterns.

We already know, from studies in California for example, that the amount of time you spend commuting and your level of obesity are directly related. We know that poor people are less able than the rich to live near their places of work. We know that 14% of US fast food meals – dense in animal meat – are eaten in cars. This comes not from a particular national fondness for the interior of cars, but because for many of America's working poor, the only chance they have to eat a meal is en route from one job to the next.

What's more, it's much harder to be vegetarian if you don't have access to fresh fruits and vegetables. If you live in a poor neighbourhood in the US, you might be subject to 'supermarket red-lining', a phenomenon named for its similarity to the practices of banks, where red lines would be pinned onto local maps to denote the areas within which the bank would make no loans. Supermarket red-lining is the same thing, but with sales of food. It is an increasing feature of American geography that low-income neighbourhoods are overwhelmingly less likely to have fresh food markets, and far more likely to have fast food outlets and convenience stores. The consolidation of supermarkets means that in Boston, more than half of 50 chain supermarkets have closed since 1970, and the number in Los Angeles County has fallen by almost 50% as the markets concentrate in only the well-to-do areas.

The choices we make, then, aren't made freely. And there are some profound obstacles that prevent society's poorest from choosing a healthy diet. In the Global South, being vegetarian happens simply because people can't afford meat. In the Global North, vegetarianism is the prerogative of the middle class.

So what changes, then, would be required to move all of us in the Global North towards a more sustainable diet? For a start, we ought to dispense with the idea that there's a magic bullet. No one intervention can unpick the morass of culture and class that pushes poorer people to unsustainable eating habits.

But in moving towards sustainable eating, it is important to jettison the kind of thinking that reduces diet to individual choice. Instead, a range of policies are needed, from encouraging fresh fruit and vegetable markets in low income areas, to increased government-sponsored social housing nearer places of work, to building cities with walkable environments and green space, to living wage legislation, to a reduction in the length of the work day, to some fairly serious investment in education and healthcare to stamp out the injustices that accompany our differential access to food.

It is impossible, in short, to talk about meat in the US or elsewhere without talking about class. And if we want to eat sustainably, that's a conversation we can put off no longer.

Raj Patel is the author of 'Stuffed and Starved: Markets, Power and the Hidden Battle for the World's Food System' (Black Inc Books). He is a visiting fellow at the Center for African Studies at the University of California, Berkeley, and a long-time activist.

Refrigerators sold in Australia by Samsung, Hitachi and LG Electronics now contain antibacterial nanoparticles.

New Report Lifts The Lid On Nanotechnology In Food And Agriculture

Georgia Miller & Rye Senjen, FoE Nanotechnology Project

FoE Nanotechnology Project

"Nanotechnology" is a powerful new technology for taking apart and reconstructing matter at the scale of atoms and molecules. While most people may associate nanotechnology with sci-fi nanobots of the future, previous articles in *Chain Reaction* have reported that unlabelled, untested nanomaterials are entering the global food chain.

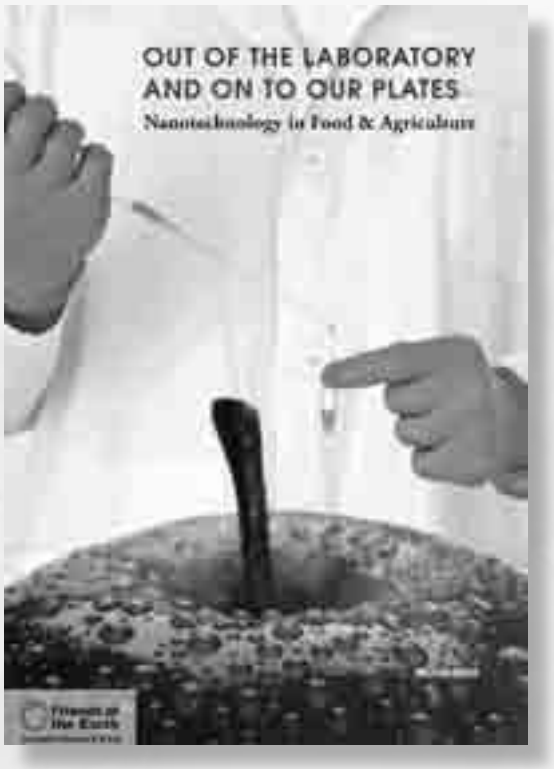
Campaigners with Friends of the Earth Australia are the lead authors of a new international report, *Out of the laboratory and into the food chain: Nanotechnology in food and agriculture*. Released in March, the report lifts the lid on nano's stealthy entry into foods, food packaging, kitchen products and agricultural chemicals.

Our research has found that products containing manufactured nanomaterials which are available internationally include fruit juices, toddler drinks, diet milkshakes, processed meats, cooking oil, nutritional supplements, cling wrap, food storage containers, soft drink and beer bottles, kitchen wipes, cleaning sprays, chopping boards, refrigerators and chemicals used on farms.

Without labelling, there is no way to know how many Australian foods, agricultural and kitchen products now contain nanomaterials.

Disturbingly, despite early scientific studies demonstrating that some of the nanomaterials now used by the food industry can be toxic, there is no requirement for manufacturers to conduct safety testing of nano ingredients, and no mandatory labelling to enable people to avoid eating nanofoods. And despite the bigger social and ethical issues associated with

nanofoods, including nanotechnology's threats to food sovereignty, there has been no effort to involve the public in decision-making.



To access a copy of the new nanofood report visit: <http://nano.foe.org.au>.

Organic food to be nano-free in the UK

Citing fears about the health and environmental toxicity risks posed by nanomaterials, the United Kingdom's largest organic certification body has announced that it will ban nanomaterials from all products which it certifies. From now on, people who buy organic foods, health products, sunscreens and cosmetics that the Soil Association certifies will know that they are free from manufactured nano additives.

Gundula Azeez, Soil Association policy manager, told food industry magazine Food Navigator.com: "We are deeply concerned at the government's failure to follow scientific advice and regulate [nano]products. There should be an immediate freeze on the commercial release of nanomaterials until there is a sound body of scientific research into all the health impacts."

The UK Soil Association announced its move to ban nanomaterials as a world first. However while being enthusiastic about the UK announcement, Australia's peak organic certifier, the Biological Farmers of Australia, noted that it issued an interim ban on nanotechnology in mid-2007. In a recent BFA newsletter the Chairman of its Organic Standards Committee, Dr Andrew Monk, noted that "the [BFA Standards] Committee reviewed the nanotechnology issue some six months ago using the most recent evidence and information available to industry. It resolved unanimously not to permit such technologies in organic food products regulated in Australia under the BFA Group's organic Bud logo."

Nanosilver: a toxic addition to everyday kitchen products

Silver has been known for its powerful antimicrobial properties since the early Roman times. But, like many of the heavy metals, silver is also toxic to fish, algae, crustaceans, some plants, fungi and nitrogen fixing bacteria. Now nanotechnology is enabling the production of silver particles that are a lot smaller, and potentially a lot more dangerous.

Silver nanoparticles can be found in an increasing number of Australian products available at your local supermarket, pharmacy, outdoor gear shop or appliance retailer. Silver nanoparticles are now used in some odour resistant textiles including woollens, household appliances like washing machines, air conditioners and vacuum cleaners, and medical devices including wound dressings ("Band Aids"). Alarmingly, silver nanoparticles are also making their way into kitchen products, including refrigerators, antibacterial surface wipes and cleaning sprays. Internationally, silver nanoparticles are also used in antibacterial cling wrap, plastic food storage containers, chopping boards, cutlery and crockery.

As with many substances, the toxicity of nanosilver is greater than that of silver in bulk form. Test-tube studies demonstrate that nanosilver is toxic to mammalian liver cells, stem cells and even brain cells. The potential for nanosilver to harm beneficial bacteria in the environment, especially in soil and water, is of particular concern. Additionally, there is also a risk that nanosilver will lead to the development of antibiotic resistance among harmful bacteria. Not only may certain harmful bacteria become resistant against nanosilver, but because of the type of resistance mechanism developed, they may also potentially develop resistance to 50% of currently used antibiotics.

Silver is also toxic when ingested, even when particle size is greater than nano. The United States Food and Drug Administration warned as early as 1999 that the "use of colloidal silver solutions has resulted in cases of argyria, a permanent blue-gray discoloration of the skin and deep tissues." Ingestion of colloidal silver (a suspension of silver in microparticles and/or nanoparticles in a gelatinous base) has also been linked with neurological problems, kidney damage, stomach upset, headaches, fatigue, and skin irritation.

Unfortunately, despite the growing number of scientific

studies showing that nanosilver could pose serious new toxic risks, Australian laws do not require manufacturers to conduct new safety tests – or to disclose nanosilver content on product labels – before their products go on sale.

For an in depth and referenced report on the impact of nanosilver, please visit our website: <http://nano.foe.org.au>

Get involved in FoE's nanotechnology campaign

If you are interested in learning more about nanotechnology and FoE's nanotechnology campaign, please contact Fiona Thiessen <fiona.thiessen@foe.org.au> or phone (03) 9419 8700.

Tell the government that you want unsafe, untested nanoproducts taken off the market

Given the poorly understood toxicity risks of nanomaterials, the threats they pose to human health and environmental systems, and the failure of regulatory systems to manage these risks, Friends of the Earth Australia is calling for an immediate halt to sales of nanoproducts, and the withdrawal of all nanoproducts from sale. Furthermore, given the bigger picture social and ethical challenges associated with a technology predicted to transform our lives, we are calling for public involvement in nanotechnology decision making.

Please contact Senator Kim Carr, Federal Minister for Innovation, Industry, Science and Research, to let him know that you want unsafe, untested nanoproducts taken off the market:

Phone: (02) 6277 7580
Email: <senator.carr@aph.gov.au>
Post: Senator Kim Carr, Minister for Innovation, Industry, Science and Research, Parliament House, Canberra, ACT, 2600.

Have your say – make a submission to the NSW nano inquiry

Despite the huge amount of public funding made available for nanotechnology research, and the ever-increasing numbers of nanoproducts on the market, there have been extremely limited opportunities for members of the public to have their say in relation to how nanotechnology is governed. The NSW Parliament is holding an inquiry into nanotechnology and public submissions can be submitted until March 28. To see the terms of reference, visit <www.parliament.nsw.gov.au> and search for the 'Nanotechnology in New South Wales' committee.

Photo montage, images from left to right: BASF has said that it sells nanoparticle colour additives to leading soft drink manufacturers, although it won't name them. Antibacterial dishwashing cloths, cleaning sprays and rubbish bins that contain nanoparticles are now available in Australia. Some toddler formulations available internationally now include nanoparticle nutritional additives.

Garden Variety Arithmetic

Adam Grubb

The numbers suggest that home food production should be a central strategy of the global environment movement.

The global food system is almost certainly the most environmentally destructive force on the planet. Vast industrial monocultures extend into what were once forests, plains and wetlands; our rivers flow grey with our precious inherited topsoil; aquifers are sucked dry; ocean 'dead zones' develop wherever fertilisers leach; and the greenhouse gases nitrous oxide, methane and carbon dioxide escape from the tortured soils and machinery.

Plant and animal products are processed, irradiated, chemically preserved, sterilised, frozen, packaged and moved around the world where they produce oceans of waste, and nations of undernourished and overfed (sometimes both) consumers disconnected from nature and their food sources.

Our source of basic life-giving sustenance is mediated by advertising, packaging, and the process of earning money at a meaningless job to buy food at an impersonal supermarket where we are forced through the subtly humiliating rituals of programmed greetings, long queues and bag searches. None of it is good for our health, our morale or the planet. Certainly it's not sustainable, which as Michael Pollan points out, means that it will inevitably collapse.

With this in mind I wondered if we could quantify just how much greenhouse gas, how much fossil fuel energy, how much water and landfill waste could be saved in Australia through home food production.

Home food production is possible even on the scale of the balcony. A small family can be self-sufficient in fresh vegetables on a quarter acre block, and produce about a third of their fruit too. Choosing an aspirational situation for a benchmark, I considered a block where both of the above food targets are being met, as well as having a 10,000 litre rain tank installed. All the organic matter is also composted on site where it improves the soil rather than going to landfill.

Broadacre industrial agriculture uses 65% of Australia's water, and more is used in processing. Modern food production is hugely energy intensive. In the US, two studies have estimated that 10 times as many calories are consumed as are contained in the food we eat. The Australian situation is likely very similar. If so, we put almost twice as much fossil fuel into our food as we do into our cars. We are literally eating oil. These are not comforting statistics in light of the peak in global oil production.

Meanwhile, due to soil carbon loss, methane and nitrous oxide emissions, the greenhouse impacts of the food system are disproportionately large, particularly given its already large energy usage. The ACF-funded Consuming Australia report suggested that food production counts for 28% of Australian's greenhouse gas emissions, excluding home refrigeration, cooking and preparation. According to the most recently available figures, most of Victoria's household wastes – about 64% – are compostable organic materials.

Furthermore, the type of food which it makes most sense to grow at home are the foods which taste best and are healthiest eaten fresh, in particular fruit and vegetables. These happen to be the same foods that take more energy and water resources to grow, and require refrigerated storage and energy intensive transport. At an estimate, producing about one third of our diet by weight at home (according to what best suits home gardening) should allow us to decrease the energy and water footprints of the food we eat by about one half. Artificial fertiliser inputs are unnecessary if food and garden wastes are composted.

With a 10,000 litre tank, grey water systems and water saving gardening techniques, home food production should require no town water in an average year. That works out to a saving of 100,000 litres or 35% of average Australian household use. Of course one should consider water embodied in the infrastructure, so the true savings maybe somewhat lower. However the real savings are 'upstream'. Around 410,000 litres might be saved by home food production. In total that's over 500,000 litres of water saved per household.

If our food system is responsible for 28% of our greenhouse emissions, and uses energy the equivalent of about eight barrels of oil, we might drop about 14% off our annual emissions, and save the equivalent of four barrels of oil per year per person. By comparison the average Australian's car use amounts to five barrels of oil per year.

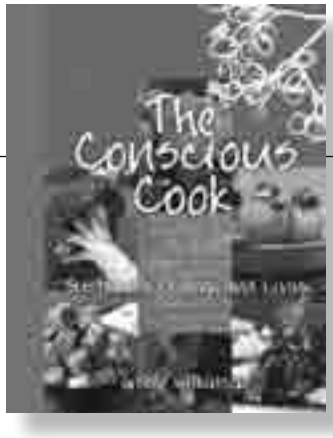
Based on 1999 data, the average Victorian household has the potential to reduce landfill waste by around 1.5 tonnes per year by composting, or 64% of the total – although green-waste programs may have already begun reducing this.

Whatever margins for error there are in these estimates, the overall picture is clear – home and other local small-scale intensive food production are essential environmental strategies. What makes the approach even more appealing is that while most environmental strategies ask us to give something up, home gardening offers to give us something: fresh food full of flavour, a new sense of connection to our food supply, and the health which comes from fresh food and exercise. The communities that grow around urban food production cross boundaries of age and culture, and as the global food system enters uncertain times, they help us develop friendships and social bonds equally as important as the food security they entail.

Adam Grubb is founder of the peak oil news clearinghouse Energy Bulletin <www.EnergyBulletin.net>, and a member of the permablitz network <www.permablitz.net>.

References at: <www.eatthesuburbs.org/2007/10/grow-your-own>

The Conscious Cookbook



Giselle Wilkinson

Food is an excellent vehicle for communication. We all consume it every day. Many of the issues between land management, the industrialised food system and the impacts on the environment and also on human health are well known. Some of the connections between climate change and food production are beginning to be publicly discussed. It is now clear that there is a plethora of issues connecting food to social and environmental sustainability.

Choosing food as an opener for a wider conversation presents a golden opportunity in view of the apparently insatiable appetite many consumers have for cookbooks. So the concept of writing a book about sustainability through the lens of food was explored and, from Day One, it was called *The Conscious Cook.*

Originally it was to be disguised as a cookbook, slipping little titbits of information around each recipe, intriguing the reader, inspiring them to read further at the back of the book. Two and a half years later, the sustainability message can be overt and the cookbook is now unashamedly a book that 'joins the dots' between the raft of issues. Many people are now concerned about sustainability and finally, in 2008, are listening. *The Conscious Cook* is written for this mainstream audience.

The recipe section is designed to catch the reader's attention. As a standard cookbook, it contains recipes selected to be in the comfort zone of mainstream people but there is more to the selection than just this. The recipes represent a wide variation of staples, ethnicities, types of meals and ingredients and a range of considerations including localisation of food, seasonality, fair trade and other agendas. This draws the reader to the more in-depth treatment of the many issues in the subsequent sections.

The recipes are not 'sustainable' as such. If they were there would probably be no meat meals in there at all. But well over 90% of the Australian population eats meat so, if it's to reach a mainstream audience, it needs to include meat and dairy. Recipes are included which are based on meat but they may suggest kangaroo rather than beef or lamb. There are other suggestions for eating less meat including making meat the garnish to the meal instead of the central part of it. The book seeks to avoid being proscriptive but the information makes a compelling case for change.

The rest of the book contains information about the impacts of the industrialised food system on our health and on that of the ecosystem. It focusses attention on the ways we can lessen the damage and make a positive difference. So *The Conscious Cook* is a book on a mission – its primary goal is to empower ordinary people to change their behaviour to live more sustainably.

The Conscious Cook will be available in bookshops in May or can be pre-ordered at <www.conscioucook.org>. RRP $34.95.

Giselle Wilkinson has been a social and environmental activist for over 30 years. She was instrumental in establishing the Sustainable Living Foundation.

Conscious Cooking Icons

The Conscious Cook **uses the following icons to guide the reader to consider sustainability issues.**

Food Miles ... the health, taste, social, environmental, economic and political benefits of localisation of food ... the scale and consequences of transporting food over large distances ... the efforts of people trying to find ways to minimise their footprint by eating local produce.

Seasonality ... the benefits to health, taste, local farmers, local economy, local biodiversity and the environment in general of eating seasonal food.

Community ... helps us understand globalisation, the usually negative role it plays and how we inadvertently collude. It covers the area of smart consumerism, directing our money in considered and worthwhile directions, learning about and supporting community solutions.

Purity ... The knowledge we need and the efforts we must make to achieve maximum purity, the reasons why this is vital to our health and wellbeing and that of the planet, the value of organics, of food free of additives and of non-polluting cleaning. This icon also represents wasteful commercial practices.

Justice ... it has to be healthy not just for the end consumer but also for the growers and the land and biodiversity in which it grows. Issues of animal (and fish) rights and fair trade ensuring people are paid fairly and their work protected. Justice also means that greenhouse gas emissions are attributed to the end consumer.

Water ... producing food, growing, irrigation, processing, packaging, and is the region of origin one of high rainfall or drought? Are we engaged in water theft consuming food imported from water poor countries? Can steps be taken in the recipe to reduce the number of pots used, minimise the amount of water needed, reuse it, recycle it and value it appropriately?

Health. Some recipes are bursting with goodness, freshness, vitality and nutrition inviting us to eat them again and again. Others are still good, in moderation, and too delicious to ignore. Some health considerations are universal – clean, fresh, nutritious – and others are individual and more personal.

Energy ... gas, solar, wind, brown coal, methane ... how many stove burners are needed, is the oven used too? Appliances, refrigeration, freezing – 100% renewable energy 'green power' is available.

Biodiversity ... the fine and intricate balance of nature, the ecosystems and the millions of species, many of which are at risk if we allow climate change to become catastrophic. Land clearing, forest felling, fires, chemicals, genetic engineering and pollution including greenhouse gasses, all impact negatively on our precious biodiversity.

Water intensity of food – the next stage in eco-labeling?

Cam Walker, based on research by Naomi Schwartz

Australia is, for the most part, a dry continent, with erratic weather and often un predictable rainfall. The community is keenly aware of the threats to our inland rivers, and water shortages in the cities. Many people are taking action: changing behaviour, installing water tanks, and reducing personal use of water, buying more efficient appliances and so on. But a huge element is missing from the debate at present – that of water use in agriculture. And a big part of this is because there is so little information available on the topic.

Agriculture accounts for much greater water usage than households and all other sectors combined, and is therefore the area where smart water management policies can have the greatest effect. In Victoria, for example, only 8% of water use is domestic whereas agriculture is responsible for 66%.

Many farmers are seeking to become more efficient in their production – costs of water and limited availability as well as concern about being good land stewards being key factors driving this innovation. However, without eco-labelling that gives a sense of the water intensity of various food products, it is impossible for consumers to be able to help drive this innovation, or reward the producers who are working smartest and most efficiently when it comes to water consumption.

Most people have heard of shopping organic, or paying attention to food miles. But what about shopping for water intensity? It seems clear that this will be the next stage in eco-labelling because it will allow us to take action on water stress and reduce our personal water footprints.

Beyond picking the more efficient producers within a particular product range, water intensity labelling would also allow us to consider the categories of food we eat, with a view to reducing the more intensive products. Obviously, some products require a lot more water than others. In an environment with such scarce supplies of water as Australia, the amount of irrigation a crop receives has a huge effect on the environment. Removing water from rivers, streams, and other natural bodies of water throws off the delicate balance of their ecosystems. Excess irrigation can leach nutrients into our water supply, and cause salinisation of land and water. Therefore, it is important to encourage farmers both to take as little water from the environment as possible, and when they do extract water, to use it in an thoughtful way and return it in good condition.

In the future, we hope that products will be labelled for their water intensity. That way, every time you shop you will be able to judge products for their water intensity and compare individual producers' water use practices. The label would take into account both the average water intensity of a product and a producer's individual water use efficiency. This should encourage farmers to improve their irrigation practices for the water intensive products they are already growing as well as to switch to growing foods that require less water. It would also give consumers considerable power to minimise their impacts and support those farmers who are the most efficient.

There is currently very little research on the water intensity of different foods. Hopefully, as the water shortage becomes more serious, a larger body of information will become available. In the meantime, you can use the accompanying table as a guide when you go shopping, and there is a lot of good information at <www.waterfootprint.org>

Water intensity and food categories

Drinks

Coffee has a very large water footprint due to the water intensive processes required before we drink it. Tea, by comparison, has a very small water intensity. The virtual water content of a cup of coffee is 140 litres while that of a cup of tea is only 30 litres. The virtual water content of a 250 ml glass of beer is 75 litres, while it takes 120 litres of water to produce a 125 ml glass of wine. However, beer production is more land intensive than wine.

Processed foods

In general, processed foods have high water intensities. Many industrial food processes use a lot of water, and although they are becoming more efficient, they tend to produce a lot of waste water. So the virtual water content of processed foods include not only the water required to grow the ingredients, but also the large amounts of water used in their manufacture.

Fruits and vegetables

The best products to eat for low water intensity are fruits and vegetables. They have a high yield per water input and require little processing. Pumpkin and squash, tomato, sweet potato, lettuce, and strawberries are some of the fruits and vegetables with the lowest water intensity. Grapes, oranges, bananas, and stonefruits have high water intensity in comparison.

Animal products

Animal products are uniformly more water intensive than plant products. This is because the water footprint of an animal product includes the water content of their feed, servicing, and drinking. Beef products are the worst due to the long life span of cattle. They consume a lot more in their average three years of life before slaughter than a sheep does in 18 months or a chicken does in ten weeks. In terms of water intensity, it would be best to avoid meat altogether, but if you must eat meat, try to stick to chicken or lamb and steer clear of beef.

Grains, legumes, and cereals

Grains, legumes, and cereals have higher water intensities than fruits and vegetables, largely because they are usually processed before they arrive on our plates. Among grains, rice has one of the highest water footprints. Many Australian rice growers are amongst the most efficient in the world. It takes 1,176 litres of water to grow one kilogram of rice in Australia—which is small compared to the global average of 2,300 litres. Even though we live on the driest inhabited continent in the world, we are growing enough rice to feed 40 million people daily. This makes a huge dent on our water supply.

Rewilding Food Systems: From Agricultural Civilisation to the Horticultural Village

Urban Scout lives a hunter-gatherer-grower lifestyle in Portland, Oregon. Here are his views on agriculture.

In order to understand the destructive nature of agriculture we must understand the phases of ecological succession. Ecological succession refers to the phases of growth from barren rock to a climax forest. The loss of biodiversity that creates a blank slate generally occurs through a disturbance such as fire, flood, volcanic eruptions, etc.

Primary succession refers to the earliest phase of ecological succession, characterised by the growth of "pioneer plants" such as fungus, grasses and annual wildflowers. These plants love sun, barren rock and/or disturbed soil and serve to create quality, life-giving soil for secondary succession to grow in. Secondary succession refers to the later phases of ecological succession, marked by the growth of larger perennials such as shrubs and trees that need established soil that the primary succession forms. These phases work towards creating the final stage of succession, a stable ecosystem, referred to as a climax forest.

Agriculture refers to a process of cultivation that simulates natural catastrophe (i.e. burning, flooding, tilling) to inspire (mostly) annual pioneer plants, specifically grasses (i.e. corn, wheat, rice). From its foundation agriculture causes a loss of biodiversity; agricultural subsistence means keeping the land in a fixed state of primary succession. Agriculturalists have a fondness for mono-cropping. Mono-cropping sets up the

perfect environment for insects who love to eat that particular plant. Slowly but surely tilling the soil to create continuous primary succession exposes soil to wind and rain until the soil erodes away entirely. So much so that in order to grow crops, our fields require the importation of mineral resources known as fertilizer.

Ecological succession show us that plant growth naturally progresses to climax forests. Agriculture involves working against this natural progression rather than working with it. Trying to stop insect populations when you have provided them the perfect habitat involves a lot of work. Making fertilizers that you would not need if you followed the flow of succession, involves a lot of work. Not only does this form of subsistence destroy the environment, it also requires a ton of labour.

These problems make agricultural subsistence easily open to crop-failure from large insect infestations, disease, climate change, etc. which leads inevitably to famine. If you put all your eggs in the agriculture basket, you die. In order to combat this agriculturalists invent food storage; aka the Granary. Initially this looks great, a little more work on their part, but in the end they don't starve to death during crop-failures. Unfortunately, food surplus effects the population growth of a species inspiring it to grow.

Any animal population that has a surplus of food, grows to match that surplus. Humans included. A population cannot grow without an increase in food availability, usually made available through an increase in "efficiency" in food production. Therefore, a population explosion implies more food production. Full time agriculturalists with a food surplus create a positive feedback loop of growing more food to feed an ever expanding population. Eventually, the soil underneath agriculturalists degrades and washes away and they either cease practicing agriculture (as we have seen with many civilisations), or they (as in the case of our civilisation) expand into neighbouring forests and keep growing.

Civilisation, a way of life characterised by the growth of cities, works as an ecological phenomenon occurring when agricultural peoples reach a certain population density due to their food surplus-induced population growth positive feedback loop. Though not a catastrophe in the "natural" sense (fires, floods, volcanic eruptions, comets), in ecological terms you can literally call civilisation a catastrophe. Perhaps a "cultural" catastrophe would serve as the best description.

What does rewilding a food system look like?

A rewilded food system would look like a progression from what we have now to what we did before we practiced agriculture. It feels worth noting that many first nations peoples and other indigenous peoples around the world heavily cultivated the lands they lived with in a manner very different than agriculture. Most, if not all, Indigenous cultures, "hunter-gatherer" or otherwise, practice involved land management.

The methods employed, have many names but I prefer the term horticulture. Horticulture refers to cultivation by means

of secondary succession; perennial shrubs and trees. This still involves burning, selective harvesting and rotation, pruning, transplanting, minor tilling and weeding. While these methods can also lead to population growth, unlike agriculture, they do not necessarily lead to an overall loss of biodiversity and soil degradation because their foundation lies with using all phases of succession, rather than just the first. This also does not mean to say that horticulturalists never used agricultural practices, but that agricultural foods never formed a staple of their diet.

So how do we get rid of a culture hooked on deforesting to grow annual plant grains? The first step to rewilding our food system would involve immediately ceasing current deforestation. The second would involve dismantling all of our annual plant farms (wheat, corn, rice, soy) and transforming them back into forests, whether that happens through personal diet choices (such as buying only local and non-annual grains) or by physically stopping logging through whatever means a person feels comfortable with (whether through legislation or more underground techniques). It would look like ceasing to feed cattle with wheat, corn, rice and soy and let them graze once again. It could look like planting a perennial food garden. It could look like tossing seed balls in abandoned lots. It could look like old farmland returning to a forest. I don't expect our food system to change over night. It will work slowly, but we will have it again, or we will have desert wastelands. You decide.

More information: <www.urbanscout.org>

GE food sold with PR-101 rhetoric

Benedict Coyne

The recent overturning of genetically engineered (GE) crop moratoriums in NSW and Victoria has been accompanied by well-worn 'PR-101' rhetoric. One-liners like GE food will 'feed the starving world', 'save the environment' or 'help combat climate change' come straight from the PR industry.

Victorian Premier John Brumby undermined his own party to bulldoze through the GE agenda. A truly independent inquiry – as opposed to that established by the Victorian government, and chaired by Gustav Nossal – would have done more extensive research and released the findings for public discussion.

The Australian Academy of Science recently released a statement claiming that genetically modified crops will play a critical role in alleviating malnutrition, combating climate change and removing allergens from food. This despite a mass of evidence to the contrary.

GE food crops have proven adverse effects on human health and the environment. In a recent letter to *Australian Consumers*, Jeffrey M. Smith, executive director Institute for Responsible Technology USA, said: "Working with more than 30 scientists worldwide, I documented 65 health risks of GE foods. There are thousands of toxic or allergic reactions in humans, thousands of sick, sterile, and dead livestock, and damage to virtually every organ and system studied in lab animals. Government safety assessments, including those of Food Standards Australia New Zealand (FSANZ), do not identify many of the dangers, and analysis reveals that industry studies submitted to FSANZ are designed to avoid finding them."

The long-term environmental impacts of GE crops are still largely unknown. GE crops have been known to create tolerant 'super weeds' which require more chemicals of greater toxicity, which means more money out of farmers' pockets. The agribusiness companies that sell the GE seed also sell the chemicals.

The contamination of conventional crops is a major issue. In North America, GE corn seed has found its way to Mexico and now threatens hundreds of indigenous varieties of corn. Contamination cannot be reversed. The Canadian Governments' Agricultural Department says that genetic contamination of canola is now so widespread that it is difficult to grow conventional and organic strains.

The determination of federal and state governments to promote GE agriculture is at odds with the majority views of Australian consumers and farmers:

• A recent Cole's survey found 90% of people will avoid eating GM food if given the choice.

• Recent polls show 72.4% of Australian farmers do not want to grow to grow GE grain crops. (Farm Poll <http://nqr.

farmonline.com.au>. See also the Network of Concerned Farmers website <www.non-gm-farmers.com> and Biological Farmers of Australia <www.bfa.com.au>.)

• Goodman Fielder, the biggest end user of canola in Australia, doesn't want GE in its food supply chain. Goodman Fielder owns brands including Meadow Lea, Praise, White Wings, and Helga's, and believes that "in a world of ever increasing globalisation, Australia's current status as a GM-free producer gives the company an essential international competitive advantage."

• Over 250 Australian companies have recently spoken out against GE crops including Australia's biggest lamb exporter, Tatiara meats, and Coles.

Monopolising global food resources

The famous case of *Monsanto Canada Inc. v. Schmeiser* (2004) illuminated the corporate strategy of monopolising global food resources. The Canadian Supreme Court held that it did not matter that Percy Schmeiser was strongly opposed to the GE contamination of his land, nor did it matter how the seed got onto Schmeiser's land, the fact that it was growing on his land meant he had infringed Monsanto's patent and had to pay up! This ruling gives Monsanto a 'license to pollute' and an incentive to spread its genetically altered seeds through cross-pollination.

Far from feeding the 'starving world', genetic engineering is a strategy of corporate monopolisation of the world's food resources. It threatens food security everywhere and undermines fundamental human rights.

President of the American National Family Farm Coalition, Bill Christison, stated: "The real truth is that GMOs cost more and yield less." Each year he plants hundreds of acres of soybeans which costs him $6.51 per acre if planting from saved seeds. If planting Monsanto's Roundup ReadyTM soybeans it would cost $42 an acre. The darkest part of the deal is that agribusiness giants like Cargill and Monsanto, who own the seed patents, forbid farmers from saving seed for future harvests. Christianson says this threatens the social fabric of family farming by taking agricultural control away from local farmers. This impact has been felt heavily in North America and some Third World countries.

Australia is in the privileged position of remaining GE-free. Being an island continent makes it feasible to ensure GE-free purity, which is what our export markets in Japan and Europe want. Japanese consumer groups travelled to Australia last year to lobby the government to keep the crop bans in place.

Australia should exercise the wisdom of patience. We should adhere to the precautionary principle, as advised by the Union of Concerned Scientists. We should wait until the lab rats are no longer getting depressed immune systems from eating GE foods, and the incidence of human allergic reactions has been controlled. Smith comments: "Lab animals fed GM crops had altered sperm cells and embryos, a five-fold increase in infant mortality, smaller brains, and a host of other problems."

Donald Page, NSW Nationals MP for Ballina, stated in his recent dissent to the Gene Technology (GM Crop Moratorium) Amendment Bill 2007: "Currently $60 per tonne more is being paid for GM-free canola over GM canola. So this segregation issue is important from a marketing and equity perspective, but I believe it is also important from a liability perspective." When former Victorian Premier Steve Bracks put the four-year moratorium in force in 2004 he said: "Yes, it's a cautious approach, but why wouldn't you be cautious with $3.5 billion of export of grains and dairy products?"

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WEST MALLEE PROTECTION

Cat Beaton

West Mallee Protection (WMP) is a newly formed group which supports the Kokatha Mula Nation peoples and projects. WMP emerged from an alliance between environmentalists and Kokatha Mula people who share concerns and see the need for positive action to protect the outback Ceduna region in South Australia.

With the combination of traditional knowledge and enviro-based networking skills and abilities we aim to secure this region under complete protection, address environmental degradation, promote its ancient heritage and defend cultural rights into the future.

A major area of focus begins 50 kms northwest of Ceduna in the Yumbarra Conservation Park, to the north it meets the Yellabinna Regional Reserve and to the east, the Pureba Conservation Park. These lands cover four million hectares and hold rare melding eco-systems. The terrain is sand hills, mallee woodlands, granite outcrops, rockholes and soaks. In this environment, rare plants and animals such as a miniature marsupial mole, a slender-billed thornbill and the Ooldea Guinea-flower thrive. With only few surveys conducted, the extent of unique flora and fauna within this region is unknown.

All life in this region is intrinsically linked to the Kokatha Mula culture. This is one of the few areas in SA still in pristine condition, almost untouched.

Sadly, this area faces a great threat. The exploration, mining and mineral export industries have shown active interest for profit in this region. Minerals formed many years ago as part of the ancient shoreline are now covered by the three conservation parks. Unfortunately, the status of a conservation park or regional reserve does not prohibit mineral exploration

or mining. Some "wilderness" zoning would provide adequate safeguarding against industrial development and such protection – until land justice is met – would be a step in the right direction.

Protecting these places, retaining their heritage and defending the health of the area is why the WMP group exists. WMP is one of the many responses to the SA states mining boom, to challenge the practices and principles of mining activities and its compatibility with land, history and culture.

The most developed project in the area is the proposed Jacinth-Ambrosia zircon mine in the north of the Yellabinna Regional Reserve. An environmental impact survey is currently under departmental assessment for approval and if successful the company would like production underway by 2010.

Exploration licenses – mainly for mineral sands – have been issued throughout the three conservation parks. WMP researches the impacts of exploration and mining, letting the local community and the broader public know issues that mining companies and the pro-mining state government often do not make available. Given the need for employment opportunities in this remote region we face a big challenge and look to promote positive initiatives which will enrich the community and economic status of the region.

WMP's involvement in this area also includes organising the Rockhole Recovery Project. This includes a bi-annual open 4x4 adventure to assess the health and clean rockholes. Between these trips WMP and the Kokatha Mula Nation frequent the region for maintenance and study. WMP also operates within the community of Ceduna and is looking to expand the Paper Club – a means to recycle paper and create fuel sources for winter, and mechanics meets which involve maintenance of vehicles and the investigation of alternative fuels and sustainable modes of transport in a remote area.

This area boasts the largest stretch of old-growth mallee woodlands in the world and as custodian Sue Haseldine says: "It is a place for everyone to experience nature in its pure form."

We encourage all people, families and groups to get involved in this ancient wonderland, as it has so much to offer all people. Ideas for projects are welcome and encouraged and any kind of support is appreciated.

We thank the FoE Australia network for making WMP its newest affiliate group. We look forward to the collaboration, support and myriad of exciting projects ahead.

For more information and to get involved call:
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And check out <www.kokathamula.auspics.org.au>

Photos: (Opp. page) Morning light on Yellabinna Rocks. *Photo by Brett Thompson.*

(This page, top to bottom)
Googs Lake. *Photo by Cat Beaton.*
Sue Haseldine holds a Thorny Devil. *Photo by Cat Beaton.*
Cleaning Inila Rockhole. *Photo by Breony Carbines.*

CLIMATE JUSTICE - A MATTER OF SURVIVAL

Emma Brindal

At the UN climate talks in Bali last December, the diplomatic atmosphere was broken just occasionally to reveal that climate change is a justice issue already affecting many of the world's people.

One of these rare moments was when Dr Angus Friday, Chairman of the Alliance of Small Island States, gave an impassioned speech in which he said that for people from small islands around the world, "the outcome of Bali is a matter of survival".

The voices of people calling for climate justice were louder than ever before in Bali – they were heard at the official UN side events, at the civil society forum being held outside the conference centre, at the women's caucus, at demonstrations inside the conference centre, and at the international day of action in Denpasar.

At the civil society forum, indigenous people, farmers, peasants and people from small islands spoke of the impacts of climate change on their communities. Ursula Rakova from the Carteret Islands in Papua New Guinea told the story of her people who are in the process of securing funding so that they can relocate to Bougainville. After years of battling rising sea levels, they now feel they have no choice but to leave. The relocation of people is a topic that is not discussed inside the climate talks, so organisations like Ursula's *Tulele Peisa* are forced to find funding to relocate themselves.

There were also stories of the impacts of some supposed "solutions" to climate change, such as the expansion of the biofuel (or agrofuel) industry. Indonesian representatives from the People's Alliance of the Archipelago talked about the dispossession of Indigenous people from their land as it gets turned into palm oil plantations. In another poignant presentation, Ana Filipini from the World Rainforest Movement showed pictures of deforested areas throughout the world, and finished off saying "If you do not want the whole world to become this, please help us".

Indonesia plans 20 million hectares of new palm oil plantations in the coming years, which has huge ramifications for land rights, greenhouse emissions, and loss of biodiversity. While the UN negotiations are attempting to address deforestation in the Majority World (or the 'developing' world), they do not focus on the drivers of this process. In fact, it is the demand for biofuels from industrialised nations which is driving the expansion of these plantations.

A diverse range of groups participated in the international day of action, held on the Saturday in the middle of the negotiations. Jubilee South called for industrialised nations to drop the debt owed by the Majority World. This would enable them to channel funds into adaptation projects, as well as contribute to a low-carbon path to development.

La Via Campesina, the international peasants movement, was also out in force, promoting positive solutions to climate change such as sustainable small-scale farming and local, decentralised energy systems.

In the conference centre itself, a number of protests were held which aimed to highlight the problems with some of the false solutions to climate change such as the use of biofuels and carbon financing, and the problems associated with the involvement of international financial institutions.

One such demonstration criticised the establishment of the World Bank's Forest Carbon Partnership Facility, which aims to include forests in carbon markets. Ironically, the World Bank is the largest carbon broker in the world, yet continues to provide substantial funds to fossil fuel projects despite its own Extractive Industries Review recommending it phase out the funding of these projects.

At the end of the two weeks, a diverse group of NGOs established an international network, *Climate Justice Now!* These groups are working on issues ranging from climate refugees to carbon trading and biofuels to trade and climate change. This network will continue to work to bring voices of affected communities to the negotiations, and to the world, so that we can create climate justice for all.

Emma Brindal is the Climate Justice Co-ordinator with Friends of the Earth, Australia.

BURNING COAL AT THREE MINUTES TO MIDNIGHT

Louise Morris

In the past few months Australia has taken steps to address climate change, with the Labor federal government ratifying the Kyoto Protocol in December and setting an improved renewable energy target. However, behind these iconic and important decisions lies a business-as-usual approach.

Australia is the world's largest exporter of coal, a position it has held since 1984. In 2005-06, Australia exported 230 million tonnes of coal, while states such as Victoria rely on brown coal for up to 89% of their electricity supply.

Common sense would dictate that Victoria – the 'garden state' of the 'clever country' – would embrace alternatives such as solar energy and wind power rather than continuing to burn coal for electricity. Sadly, this is not the case. Plans are being developed to allow HRL Ltd. to build a 400 megawatt coal-fired power station in the Latrobe Valley. The station would emit an estimated 2.4–2.7 million tonnes of carbon dioxide annually by burning 2.4 million tonnes of brown coal a year in a process known as Integrated Drying Gasification Combined Cycle (IDGCC).

The reason for increasing reliance on brown coal, according to Victorian energy and resources minister Peter Batchelor, is that Victoria is "endowed with an almost unfathomable bounty of brown coal – a subterranean mountain estimated at 33 billion tonnes awaits barely scratched just beneath the Latrobe Valley floor." The obvious response is that Australia is endowed with an endless bounty of solar and wind energy

potential – resources that neither pollute nor deplete.

IDGCC is a process in which brown coal, which is up to 70% water, emitting an average of 1.4 tonnes of carbon dioxide per megawatt hour, is dried to the water content of black coal with an emissions intensity of 0.8–1.1 tonnes. This dried brown coal is then gasified and combusted to turn electricity turbines.

Proponents of the HRL proposal claim it will be so called 'clean coal' – 30% cleaner than a standard brown coal power plant, and about the same emission levels as a black coal plant. However, as the Climate Institute points out, "there is no such thing as 'clean coal' for climate change. The description is a marketing triumph for the coal industry, like 'safe cigarettes' for the tobacco industry" (Hamilton et al., 2007).

The use of the term 'clean coal' to promote the HRL station led the Australian Climate Justice Project and Greenpeace to lodge a complaint with the Australian Competition and Consumer Commission last year on the grounds that to call coal of any sort 'clean' is a breach of the Trade Practices Act.

The HRL proposal alone has amassed $150 million dollars in state and federal government grants from schemes such as the federal government's Low Emissions Technology Development Fund. Taxpayers are being asked to provide 20% of the capital for this $750 million power station.

We need targets that keep global temperature rise well under 2°C to avoid dangerous climate change. As Spratt and Sutton (2008) note in the recently-released Climate Code Red report, "Australian emissions are five times the global average, and the world population will be half as large again by 2050, these scenarios require Australian per capita emissions be cut by around 95% by 2050".

Ongoing reliance on coal is incompatible with that requirement. We need to stop building new coal-fired power plants, to phase out existing ones, and to invest instead in the renewable energy solutions that ensure power supply, jobs, and a future free of dangerous climate change.

Download a copy of 'HRL Ltd: Burning Coal at Three Minutes to Midnight', by Corporate Watch for Friends of the Earth, at <www.melbourne.foe.org.au>.

Louise Morris is the FoE Climate Change Campaigner based at Friends of the Earth Melbourne. In 2007 Louise coordinated the Melbourne Walk Against Warming, Victorian BigSwitch.org campaign and worked as the Environment Victoria climate change campaigner. The FoE climate change campaign is working to achieve deep cuts to Victorian and Australian greenhouse gas polluting emissions, with particular focus on stopping the proposed HRL coal fire power station in the Latrobe Valley.

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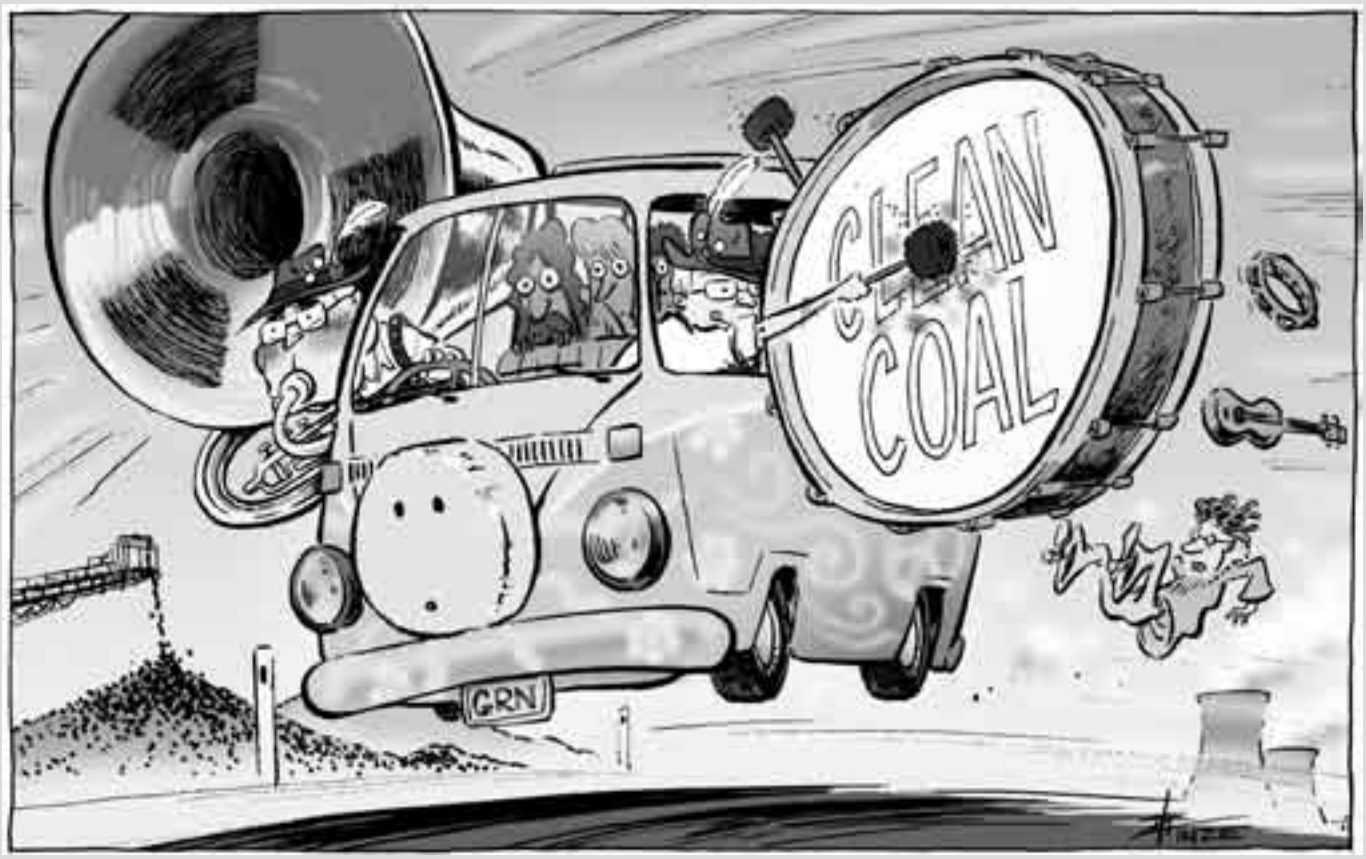

Cartoon by Henirch Hinze. <www.scratch.com.au>

MYTHS, FALLACIES AND 'SPIN' ABOUT GREENHOUSE SOLUTIONS

Mark Diesendorf

For decades the big greenhouse gas emitting industries have disseminated myths, fallacies, 'spin' and outright lies about the science of global warming from the human-induced greenhouse effect. They have deliberately sown doubt and confusion in the minds of politicians, journalists and members of the public at large. In 2006, greenhouse science, supported by observations of widespread and growing climatic impacts and popularised by Al Gore's film *An Inconvenient Truth*, triumphed at last in the minds of the vast majority of Australians, who now accept that global warming is a real, major and urgent issue.

Now the vested interests, with the assistance of some politicians and some uncritical journalists, are disseminating misinformation and confusion about potential solutions to global warming.

This paper provides brief refutations of 12 fallacies about greenhouse solutions, and cites references where more detailed discussions have been published.

Fallacy 1: Since Australia is responsible for only 1.4% of global greenhouse gas emissions, reducing Australia's emissions would have negligible international impact.

Australia's ratification of the Kyoto Protocol in December 2007 received immediate praise from international leaders. This international political impact is not surprising, because Australia is the world's biggest per capita emitter of greenhouse gases (apart from a few oil producing states) and was one of only two industrialised countries that were refusing to ratify Kyoto. If Australia followed up its ratification with support for strong targets for the post-Kyoto international agreement and backed up its words by initiating comprehensive domestic policies and actions to cut its own emissions deeply and rapidly, it would show the whole world that even a country that is highly 'dependent' upon fossil fuels could take its share of the responsibility. This would further isolate the USA and add pressure on the USA to ratify. It would also impact on Canada, which has reneged on its Kyoto commitment, despite being much less 'dependent' upon fossil fuels than Australia.

Ratification of Kyoto by the USA, and strong post-Kyoto policies to slash emissions by both the USA and Australia, are necessary pre-conditions for bringing developing countries such as China and India into an international agreement with targets and a timetable.

Fallacy 2: Coal power with CO2 capture and sequestration (CCS) is the principal greenhouse solution.

Coal power with CCS is an unproven technological system. Although pilot plants could be built before 2020, if the government pours in enough money, this would still be a long way from full-scale commercial production with a high confidence in safety. The risks of CO2 escapes are substantial.

The interdisciplinary expert study on *The Future of Coal* from the Massachusetts Institute of Technology (Ansolabehere, 2007) envisages that coal with CCS may begin to make a noticeable contribution on a global scale around 2025 and may overtake renewable energy on a global scale around 2045. We cannot afford to wait that long.

Fallacy 3: Australia could develop the coal with CCS technology and sell it to China.

This is a delusion of grandeur. To develop this technology requires billions of dollars and a superpower economy (e.g. USA and EU). We should focus on the basic geology, so that, if and when CCS technology is developed overseas, we will have identified underground storage sites. In the foreseeable future, the most important role for CCS in Australia will be to separate and bury CO2 from natural gas at the Gorgon gas field. Fortunately, this is much easier than separating CO2 from coal.

Fallacy 4: Nuclear power is a suitable alternative or supplementary solution to coal with CCS.

Current reserves of high-grade uranium ore will only last several decades at current usage rate. Once they are used up, low-grade ore will have to be used. This means that, to produce 1 kg of yellowcake, 10 tonnes or more of rock will have to be mined and milled, using fossil fuels. Under these circumstances, the CO2 emissions from the nuclear fuel chain will be comparable with those of an equivalent combined-cycle gas-fired power station.

Government Ministers and nuclear experts have admitted that Australia's first nuclear power station and associated infrastructure would take 15 years to construct (assuming

no public opposition).

Therefore, based on existing technology, nuclear power is neither a short-term nor a long-term solution to global warming. See also Diesendorf and Christoff (2006) and other briefing papers in the EnergyScience series on nuclear power <energyscience.org.au>.

Fallacy 5: The spent fuel from nuclear power stations cannot be used to make nuclear weapons.

This false claim has been refuted by many experts, including leading US nuclear bomb designer Dr Theodore Taylor, Commissioner of the US Nuclear Regulatory Commission Dr Victor Gilinsky and the US Department of Energy (Diesendorf 2007a, chapter 12). An ordinary 1000 megawatt nuclear power station produces about 200 kg of reactor-grade plutonium annually, enough for 20 nuclear bombs.

It has also been claimed incorrectly that a nuclear power station based on thorium rather than uranium cannot produce a nuclear explosive. In fact, to use thorium as a fuel, it must first be converted to uranium-233, which is fissile and so can be used either to fuel a nuclear reactor or provide the explosive in a nuclear bomb.

The truth is that nuclear power and nuclear weapons are intimately linked. In addition to the dual uses of nuclear materials, training engineers and technicians for nuclear power provides most of the training required to develop nuclear weapons.

Fallacy 6: We have to choose between coal with CCS and nuclear power.

Neither coal with CCS nor nuclear power could make a significant contribution before the 2020s. Both are dirty and dangerous technologies. Therefore, this is a false choice. However, there is another choice: between unproven, polluting and dangerous coal and nuclear technologies on one hand and safe, proven, sustainable energy technologies on the other hand. Sustainable energy comprises efficient energy use and renewable sources of energy. Natural gas, the cleanest of the fossil fuels, could play a valuable role in the transition to a sustainable energy future.

Fallacy 7: Efficient energy use has little potential.

Detailed studies conducted overseas and within Australia (for example, under the National Framework for Energy Efficiency) show that there is huge potential for cost-effective energy efficiency. It is the cheapest and fastest greenhouse gas reduction measure. Efficient energy use has been held back by market failure (e.g. split incentives between landlord and tenant; lack of information; lack of appropriate institutional structures, such as energy service companies) and other barriers. Energy efficiency will increase rapidly once governments introduce regulations and standards for energy labeling and minimum energy performance standards for all buildings, appliances and energy-using equipment. A ban on new conventional coal-fired power stations is also essential. See also Roberts (2006).

Fallacy 8: Renewable energy cannot provide base-load (24-hour per day) power.

Bioelectricity, solar thermal electricity with low-cost thermal storage, and hot rock geothermal power (soon to be proven) are all base-load. In some circumstances (e.g. in Tasmania), hydro-electricity can provide base-load too. Even large-scale wind power, from geographically dispersed wind farms, can be made as reliable as base-load coal or nuclear power by adding a little peak-load power (e.g. hydro or gas turbines) which does not have to be operated frequently – see Diesendorf (2007a & b). Energy efficiency and solar hot water can reduce the demand for base-load power.

Fallacy 9: Base-load is the only important type of power.

Electricity supply systems cannot be composed of base-load power stations alone. Base-load power stations are inflexible and break down from time to time. They take all day to start up and then have to be operated close to full power day and night.

In Australia a large fraction of base-load coal-fired power is used to provide off-peak electric water heating from midnight to dawn, when electricity demand would otherwise be very low. If off-peak electric hot water were terminated and replaced with solar, gas and electric heat pump hot water, several coal-fired power stations could be retired or not built in Australia and millions of tonnes per year of CO2 emissions would be saved. Additional intermediate-load power from combined-cycle gas-fired power stations would also be required to substitute for the dawn to midnight contribution of those coal-fired power stations.

Most electric power is used during the daytime, so daytime power (from intermediate-load and peak-load power stations) is at least as important as base-load. Even in the absence of cheap electrical storage, solar photovoltaic (PV) electricity will be able to make a large contribution to daytime power as its price declines in the future.

The water heating example shows that base-load power is to some extent an artificial construct. The important thing is to have a generating system that supplies clean, reliable electric power, while limiting wasteful demand growth. Renewable energy, coupled with efficient energy use and backed up with gas power for a transitional period, can do the job.

Fallacy 10: Renewable energy has huge land requirements.

Wind and solar power generally have smaller land requirements than equivalent coal power with open-cut coal-mines.

Wind power is normally installed on agricultural land, where its turbines and access roads occupy only 1–2% of land area. The other 98–99% of land can still be used for agriculture. To replace a 1000 megawatt coal-fired power station with wind power would require 5–20 square km of land actually occupied, depending upon wind speeds of the wind farm sites. Typical open-cut coal mines occupy over 50 square km. Even underground coal mines, using longwall mining technologies, can damage large areas of land.

A square of area only 22.6 km x 22.6 km = 510 square km could supply all of Australia's current electricity demand by converting solar energy at 20% conversion efficiency without concentrators. With solar concentrators, a much smaller area would be required. The residential component of electricity demand could be supplied by covering about 28 square metres (5.3 m x 5.3 m) of rooftop space of each house with flat-plate solar PV modules.

Thus, no additional land would be required for residential solar electricity and the land required for commercial and industrial uses of electricity would be only a few hundred square km.

In practice, neither wind nor solar would supply all electricity, which would be provided by a broad mix of renewable sources.

Fallacy 11: A sustainable energy solution much more expensive than sticking with dirty coal power.

As the ExternE studies and the Stern Report recognise, dirty coal power is very expensive in terms of economic, environmental and health impacts. The costs of drought, increasing prevalence and severity of bushfires, loss of tourism at snow-fields and the Great Barrier Reef, and the impacts of rising sea-levels on urban infrastructure will be huge. But at present these costs are not included in the price of coal power in Australia. They are externalised. Carbon pricing, by means of a carbon tax or emissions trading, is a means of internalising at least some of these external costs.

Before a carbon price is implemented, all clean alternatives

to dirty coal (apart from energy efficiency) appear to be more expensive than dirty coal power. However, the combination of efficient energy use and renewable energy is going to be much less expensive than coal with CCS without energy efficiency. This is because the economic savings from efficient energy use can compensate for much of the additional costs of renewable energy. Another way of stating this is that, although the cost of a kilowatt-hour of electricity will increase, the number of kilowatt-hours used will decline and so the total energy bill will not necessarily increase significantly.

If proponents of so-called 'clean coal' claim that they too can obtain the benefits of energy efficiency, it can be pointed out that energy efficiency has not been implemented to a significant degree with coal power. Indeed, one purpose of developing coal with CCS is to maintain endless growth in demand. Under these circumstances, it is unlikely that more than lip service will be paid to energy efficiency (the present situation).

Fallacy 12: Substituting energy efficiency and renewable energy for coal would lose jobs.

To the contrary, energy efficiency and renewable energy can provide several times more jobs per kilowatt-hour in Australia than coal. This is because the smaller scale of sustainable energy technologies (compared with coal) lends itself to manufacture in Australia. For example, when a wind farm is built in Australia, over 50% of the capital cost is spent in Australia. As the wind industry grows, the Australian content could grow to 75%. Wind power currently employs in Australia 2–3 times the number of job-years per kilowatt-hour of coal power (including the associated coal mining), while bioelectricity employs 3.5 times (mostly in rural areas). Energy efficiency technologies and measures also employ several times more job-years.

As the result of automation, employment in coal mining has halved since 1986, even though the amount of coal mined has increased substantially. When a coal-fired power station is built in Australia, only about 25% of the capital cost is actually spent in Australia. Similarly, large coal-mining equipment, such as dredges for open-cut mining and longwall diggers for underground mining, is imported.

It is simple to show that the job losses from the Australian coal industry from a 25% renewable energy target could be addressed by not replacing a small fraction of the workers who retire annually from the coal industry. According to data from the Australian Bureau of Statistics, this industry currently employs directly about 24,000 people in Australia. Taking account of the fact that 80% of Australia's coal is exported, there are only about 4,800 workers employed in coal mining for coal use in Australia. If renewable energy is increased from its current level of 9% to 25% of Australia's electricity by 2020 and if it substitutes for coal power, this means that 16% of 4,800 direct coal jobs or 768 jobs would be affected. Over the 12 years from 2008 to 2020, this is 64 coal jobs per year, about one-tenth of the expected annual retirements from the coal industry.

Even allowing for a generous multiplier factor of four for indirect coal employment would not change the qualitative result that job losses in the coal industry are easily accommodated by retirements and that many more jobs will be created in renewable energy.

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VICTORIA'S PROPOSED DESALINATION PLANT: AN ENERGY-GUZZLING, CLIMATE-CHANGING WATER FACTORY

By Chris Heislers

2006 was Victoria's worst recorded year for rainfall, yielding only 165 gigalitres of inflow to Melbourne's catchments compared with the pre-vious 10 years' average of 453 Gl. In a panic response, the government opted for what had previously been an option of last resort - a desalination plant.

The proposed plant will industrialise a wild and magnificent piece of Victoria's rural coastline only 90 minutes from Melbourne that is of such significance it is listed on the Register of National Estate.

The proposed desalination plant will produce 150 Gl water per year, upgradable to 200 Gl. Melbourne currently uses approximately 380 Gl per year. At present, 450 Gl of urban storm water and 150 Gl of treated waste water runs into Melbourne's bays and Bass Strait. Independent expert water authorities confirm that at least half of the storm water, and most of the treated water can be easily collected and reused, at less economic and environmental cost than the proposed water factory.

The Victorian government uses throw-away lines to justify its decision. In particular, the government repeats the mantra that Victoria needs a rainfall-independent water source and ignores the wealth of expert evi-dence that water supply can be secured using less environmentally and economically costly methods. The responsible, sustainable solutions in-clude:

• Stop the rain water running off roofs, increase installation of rainwater tanks, and plumb these for use in toilets, laundries and on gardens. This can easily capture the volume of water that the desalination factory will produce, at 20% of the carbon cost (Marsden Jacobs, 2007).

• Stop the rain water running into the bays via Melbourne's drains by regional storm water capture and storage systems.

• Reduce consumption: Melbournians still use over 280 litres water per person per day, double what residents of south-east Queensland and much of Europe are using. Significant further improvements in water ef-ficiency are possible with wider use of low-flow shower heads, low flush toilets, grey-water reuse systems and broader embracement of a general water saving mentality. Likewise, substantial savings in industry and from public buildings can be made through government (dis)incentives and upgrading of technologies such as that of old and thirsty cooling systems.

• Use recycled water for industry and irrigation, rather than continuing with ocean outfalls. The Eastern Treatment Plant upgrade and Water Substitution project would recycle 135 Gl of water.

• Reduce infrastructure inefficiencies - currently 8% of Melbourne's wa-ter is lost through leakage according to an Australian Water Resources Assessment report.

• Stopping logging in Melbourne's Thomson and Yarra catchments would yield an extra 30 Gl per year.

Desalination and climate change

The desalination plant will require a massive 90 megawatts of power (120 MW if upgraded as proposed). In real terms that means one million tonnes of CO2 per year, equivalent to 280 000 new cars driving our roads.

Melbourne's current water delivery comes at a low energy cost due to the passive system of catchments and the use of gravity from the catch-ment dams to the points of

use. According to the 2005-06 Victorian Wa-ter Review, Melbourne Water's average energy use for treatment and water delivery was 0.4 megajoule/kilolitre and the total urban weighted average across Victoria was 0.24 MJ/kL for 2005-06. In contrast the de-salination plant's power consumption will be approximately 19 MJ/kL assuming it is powered by brown coal.

Ironically, it is global warming and air particulate pollution that are largely responsible for reducing rainfall projections.

The Victorian government argues that the desalination plant will be 'carbon neutral'. The current Victorian maximum wind power capacity is 134 MW. The desalination project will require 90-120 MW. To be true to federal emission reduction targets, all potentially available "green energy" should be used to satisfy current requirements, or for new demands that have no better alternatives. Desalination certainly does have preferable environmental and economical alternatives.

Using carbon trading or offset schemes to justify any project that may have more sustainable alternatives is against the spirit and intent of such schemes. The desalination plant will be financed and operated through a Public Private Partnership, essentially guaranteeing profits to a multinational company for years to come, with profits and costs including those of any necessary carbon credits to be paid by water con-sumers.

Marine ecosystems

In order to produce 150 Gl of water per year, the four-metre diameter ocean intake pipe will suck in approximately 14,000 litres of seawater every second, taking with it and killing approximately 300,000 plank-tonic organisms per second. The affected organisms are the base of the food chain for higher species, and are larval life stages of the species that colonise the ocean's reefs and provide for recreational and commercial fisheries. The dead organic mass will likely be deposited to landfill, contributing further to carbon emissions via its decomposition.

Seven thousand litres of effluent will be discharged back to the ocean every second. This will comprise biocides (e.g. chlorine) and other chemicals, heavy metals and concentrated brine.

Despite government claims to the contrary, the chosen site has poor mixing characteristics. Thus, despite mitigation efforts, salinity of the re-ceiving waters will increase, and especially during periods of calm weather a proportion of the concentrated brine will sink and accumulate in protected holes and caverns that characterise the rocky ocean floor of the chosen site. The risk of a salty layer in and over the substrate is the negative effect on base food chain organisms and larvae of higher species via osmotic effects and via reduced oxygenation.

More information:

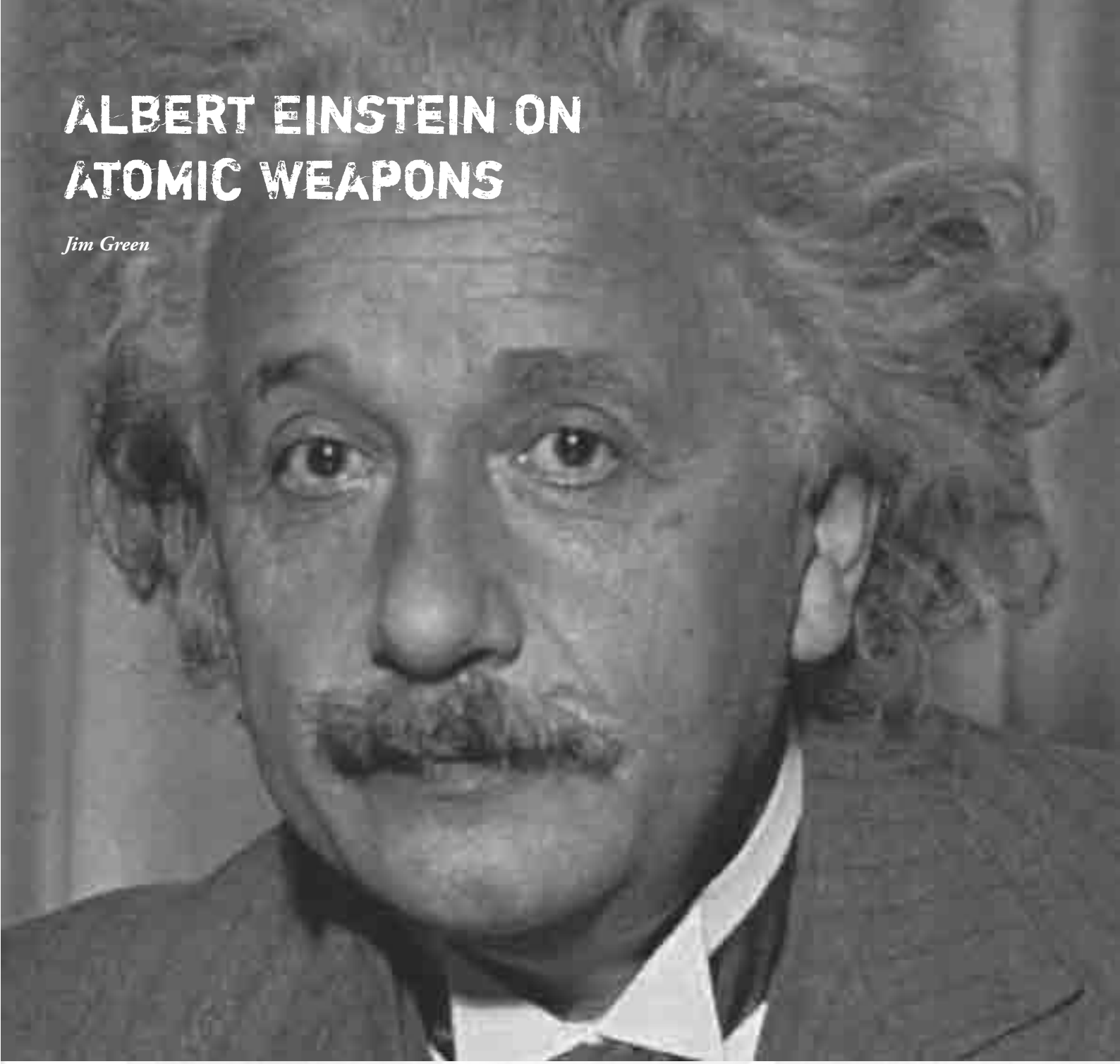
- *Your Water Your Say <www.yourwateryoursay.org>*
- *WWF, "Making Water: Desalination - option or distraction for a thirsty world?", <www.panda.org/news_facts/newsroom/index.cfm?uNewsID=106660>.*
- *Marsden Jacobs Associates, April 2007, "The economics of rainwater tanks and alternative water supply options", report prepared for ACF, <www.acfonline.org.au/uploads/res/res_rainwater_tanks.pdf>.*

Greens Leader, Senator Bob Brown of Tasmania at the site of the proposed desalination plant in Victoria.

The proposed plant will industrialise a wild and magnificent piece of Victoria's rural coastline only 90 minutes from Melbourne that is of such significance it is listed on the Register of National Estate.

ALBERT EINSTEIN ON ATOMIC WEAPONS

Jim Green



Albert Einstein was declared "Person of the Century" in the December 31, 1999 edition of *Time* magazine. Einstein's accomplishments in the field of theoretical physics were stressed; he was, according to *Time's* Frederic Golden, "the embodiment of pure intellect," "unfathomably profound – the genius among geniuses."

Time's managing editor Walter Isaacson put Einstein's scientific accomplishments in a social context. For Isaacson: "If you had to describe the century's geopolitics in one sentence, it could be a short one: Freedom won. Free minds and free markets prevailed over fascism and communism." The explosion of science and technology, Isaacson argued, "helped secure the triumph of freedom by unleashing the power of free minds and free markets." As the most famous scientist of the century – and one of the most gifted – Einstein deserved *Time's* "Person of the Century" accolade. QED.

There is a major flaw in Isaacson's line of reasoning, though we might still agree with his conclusion. Einstein was an outspoken critic of the triumphalism implicit in the rhetoric of "free minds and free markets." Far from celebrating capitalism's alleged freeing of the mind, Einstein argued in his 1949 essay, *Why Socialism?*, that the "crippling of individuals" is "the worst evil of capitalism" and that the "economic anarchy of capitalist society as it exists today is, in my opinion, the real source of the evil."

The only hint of Einstein's radicalism in the *Time* article is contained in a reference to its sister magazine, *Life*,

which in April 1949 listed the 70-year-old Einstein as one of 50 prominent U.S. "dupes and fellow travelers" used as "weapons" by the communists. Frederic Golden deals with Einstein's politics by patronising him as "well meaning if naive" and "a soft touch for almost any worthy cause." There is no mention in *Time* of the fact that after World War II, Einstein became a prominent target of the anticommunist crusades in the United States, or that he was an "enemy of America," according to no less an authority than U.S. politician and inquisitor Joseph McCarthy.

The real Albert Einstein – left-wing, pacifist, internationalist – is far more interesting than the airbrushed, inaccurate versions to be found in corporate media, where the image of a brilliant, absent-minded professor looms large. Einstein was an agitator, more than willing to challenge authority and to support a range of progressive causes.

Einstein on atomic weapons

In August 1939, just prior to the outbreak of war in Europe, Einstein sent a letter to US President Roosevelt. It was conceivable, Einstein wrote, that uranium could be fashioned into "extremely powerful bombs of a new type." He expressed his fear that the Nazi regime may be working on an atomic weapons' program, and urged a speeding up of experimental work on nuclear fission and for closer contact to be maintained between the U.S. Government and the group of physicists working on fission in the United States.

In October 1939, partly due to Einstein's prompting, the President's Advisory Committee on Uranium was formed. Though he continued to urge expansion and greater coordination of atomic weapons' research, Einstein declined an invitation, the following year, to become a member of an expanded committee.

At the end of the war, with the nuclear strikes on Japan, Einstein spoke out against them, arguing that they were unjustified and motivated by U.S.-Soviet politicking. With the benefit of hindsight, he regretted having urged an atomic weapons' program in the United States during the war.

Following the war, Einstein gave strong support to organisations fighting against militarism and atomic weapons in particular. In May 1946, he became chair of the newly-formed Emergency Committee of Atomic Scientists, which was primarily concerned with education on the dangers of atomic weapons and acted as an umbrella and fund-raising group. Funds raised assisted other organisations such as the Federation of American Scientists and activities like the publication of the Bulletin of the Atomic Scientists.

In 1955, scientist-philosopher Bertrand Russell approached Einstein, suggesting that a group of scientists be convened to discuss nuclear disarmament and ways in which war could be abolished. The first such meeting was held in July 1957, in Pugwash, Nova Scotia. Shortly before his death in 1955, Einstein was one of 11 scientists, nine of them Nobel laureates, to sign an initial statement – the Russell-Einstein Manifesto – calling for the abolition not only of atomic weapons but also of war itself, regardless of the necessary "distasteful limitations of national sovereignty."

For Einstein, the issue of atomic weapons was subordinate to the broader issues of militarism and nationalism. In Atomic War or Peace, he wrote: "As long as there are sovereign nations possessing great power, war is inevitable. That is not an attempt to say when it will come, but only that it is sure to come. That was true before the atomic bomb was made. What has changed is the destructiveness of war."

Einstein hoped that the added threat of atomic weapons might facilitate his broader objective of establishing a supranational authority, and wanted the "secret" of the atomic bomb to be monopolised by such an authority.

Einstein wanted the U.S. Government to agree to supranational authority over atomic weapons. He did not advocate unilateral nuclear disarmament by the United States, but he wanted the United States to renounce the use of atomic weapons pending the creation of a supranational authority or if supranational control was not achieved.

Though it is possible that the serious pursuit of an atomic weapons' program in the United States might have been delayed if not for Einstein's urgings, the impact of his letters to Roosevelt has often been overstated. The Manhattan Project – large-scale, coordinated work on atomic weapons – did not begin until late 1941, and Einstein himself was blacklisted from the project by U.S. security agencies. He did do some consultancy work on high explosives for the U.S. Navy during the war years, but this work was unrelated to atomic weapons.

There is no truth to the widespread view that Einstein's scientific research led to, or provided the foundations for, the development of atomic weapons.

In February, 1950, Einstein appeared on an NBC network program called "Today With Mrs. Roosevelt," discussing the U.S. Government's plans to build hydrogen bombs far more powerful than the fission bombs dropped on Hiroshima and Nagasaki. Einstein's speech on the program (included below as National Security), was typically punchy, warning that the "idea of achieving security through national armament is… a disastrous illusion," that the arms race between the United States and the Soviet Union had assumed a "hysterical character," and that with the advent of hydrogen bombs, "radioactive poisoning of the atmosphere and hence annihilation of any life on Earth has been brought within the range of technical possibilities."

Jim Green is the national nuclear campaigner with Friends of the Earth, Australia.

More information: <www.foe.org.au/anti-nuclear/issues/weapons-various>

LABOR'S URANIUM CHALLENGE

Jim Green

We're often told that the nuclear safeguards system 'ensures' that Australian uranium will not be diverted to produce nuclear weapons. That's a lie. There is a risk of diversion, and claims to the contrary are dishonest. Indeed there is growing recognition of the serious flaws with the safeguards system.

The International Atomic Energy Agency (IAEA) is responsible for nuclear safeguards and the head of the IAEA, Dr Mohamed El Baradei, is remarkably frank about the limitations of safeguards. In speeches and papers in recent years, El Baradei has noted that the IAEA's basic rights of inspection are "fairly limited", that the safeguards system suffers from "vulnerabilities" and "clearly needs reinforcement", that efforts to improve the system have been "half-hearted", and that the safeguards system operates on a "shoestring budget ... comparable to that of a local police department ".

Another cause for concern is the ever-growing volume of nuclear exports. Uranium and its by-products through the nuclear chain – low-enriched uranium, depleted uranium and plutonium – are collectively known as Australian-Obligated Nuclear Materials. Of greatest concern is the plutonium, since it can be used directly in nuclear weapons (once extracted from spent nuclear fuel by reprocessing).

Irradiation of Australia's uranium exports in power reactors around the world has resulted in the production of over 103 tonnes of plutonium as at the end of 2006 (an increase of 39 tonnes, or 61%, over the past five years). That 103 tonnes of plutonium is enough to build over 10,000 nuclear weapons. If 99% of the plutonium is adequately safeguarded, the remaining 1% would suffice to build 100 plutonium bombs.

Labor Party policy

Federal Labor Party policy states that the government will "strengthen export control regimes, and the rights and authority of the IAEA, and tighten controls on the export_ of nuclear material and technology." The policy also states that the Labor government will "only allow export of Australian uranium to countries which observe the _Treaty on the Non-Proliferation of Nuclear Weapons, and which are_ committed to non-proliferation and nuclear safeguards."

There are one or two things the Labor government can do to marginally improve safeguards without generating any adverse political reaction – the most obvious being increasing Australia's contribution to the safeguards budget of the IAEA.

But if the government is serious about improving safeguards, it will need to take steps which are likely to generate opposition from uranium mining companies and from some of the countries which purchase Australian uranium. For example, none of the nuclear weapons states are serious about their obligations under the Nuclear Non-Proliferation Treaty (NPT) to seriously pursue nuclear disarmament and therefore they ought not be eligible to purchase Australia's uranium. Yet uranium export agreements are in place with the US, France, the UK and China.

Russia

In 2007, the Coalition government signed a uranium export agreement with Russia and the Labor government will have to decide whether to approve the agreement. The Labor Party has already expressed support for the proposed exports to Russia based on its policy of supporting sales to any NPT signatory state, even undemocratic, murderous and militaristic regimes such as those that rule China and Russia.

Russia is not at all serious about its NPT disarmament obligations. Indeed Russian President Vladimir Putin said on national television in October 2007 that Russia is developing new types of nuclear weapons and expanding its delivery capabilities via missiles, submarines and strategic bombers. He described the nuclear expansion plans as "grandiose" and "fully realistic".

Another concern is inadequate security of nuclear materials in Russia. On December 1, 2007, New Scientist reported that there are "gaping holes" in the arrangements meant to prevent the theft of nuclear materials in Russia. From 2001 to 2006, there were 183 reported trafficking incidents involving nuclear materials in the former Soviet Union.

Then there is the lack of democracy in Russia and the disrespect for the rights of protesters and whistle-blowers – all factors that could adversely effect the safeguarding of Australian uranium. One notorious recent incident was the murder of dissident Alexander Litvinenko, who was poisoned in London with the radioactive material polonium-210. The Russian government has refused to extradite a former KGB operative suspected of involvement in the murder.

Allowing uranium sales to Russia would not only be unconscionable, it would also be a breach of the Labor Party's policy to allow uranium exports only to countries which are "committed to non-proliferation".

Plutonium and spent fuel reprocessing

In addition to IAEA safeguards, countries purchasing Australian uranium must sign a bilateral agreement. The most important provisions are for prior Australian consent before Australian nuclear material is transferred to a third party, enriched beyond 20% uranium-235, or reprocessed.

However no Australian government has ever refused permission to separate plutonium from spent fuel via reprocessing. Even when reprocessing leads to the stockpiling of plutonium, ongoing or 'programmatic' permission has been granted by Australian governments. Hence there are stockpiles of 'Australian-obligated' plutonium in Japan and in some European countries.

At one level there is a simple solution – the Labor government should simply ban the reprocessing of spent fuel generated from Australian uranium. After all, precious little of the uranium is recycled from reprocessing plants, the plutonium is a curse, and reprocessing is so polluting that even a director of the World Nuclear Association describes it as 'environmentally dirty'. The problems with reprocessing are such that the Coalition government made it illegal to build reprocessing plants in Australia, and the Labor Party assented to this legislation.

At another level, banning reprocessing of Australian-origin nuclear materials will be difficult – the uranium mining companies will bleat, and some customer countries will insist on their 'right' to do as they please with Australian nuclear materials.

Mike Rann – then a young Labor Party researcher and now the pro-uranium Premier of South Australia – noted in his 1982 booklet on uranium mining that: "Again and again, it has been demonstrated here and overseas that when problems over safeguards prove difficult, commercial considerations will come first." Let's see if Prime Minister Rudd takes a principled stand on this issue of nuclear reprocessing or if he continues the long Australian tradition of putting profits ahead of WMD proliferation risks.

Material Unaccounted For

Perhaps the most intractable problem with safeguards is that nuclear accounting discrepancies are commonplace and inevitable due to the difficulty of precisely measuring nuclear materials. The accounting discrepancies are known as Material Unaccounted For. This problem of imprecise measurement provides an obvious loophole for anyone wanting to divert nuclear materials for weapons production. In a large plant, even a tiny percentage of the annual through-put of nuclear material will suffice to build one or more weapons with virtually no chance of detection by IAEA inspectors.

The Coalition government refused to publicly reveal any country-specific information, or even aggregate information, concerning accounting discrepancies involving Australian uranium or its by-products such as plutonium. It is to be hoped that the incoming Labor government will be more transparent.

Of course, releasing information about unaccounted Australian-origin nuclear materials will likely pose a problem for the government. More Australians would oppose the uranium export industry if they knew the extent and frequency of nuclear accounting discrepancies.

Australians would be further disenchanted with the uranium industry if its negligible contribution to export revenue was better understood. Uranium accounts for less than one-third of one percent of Australia's export revenue – significantly less than the export revenue from cheese or wines. And the industry's contribution to employment is

even more underwhelming – uranium mining accounts for one-hundredth of one percent of Australian jobs.

As the Labor Party explores and details its fairly vague promises to improve safeguards, perhaps it could reopen discussion on the broader question: do the meagre economic benefits from uranium mining outweigh the weapons proliferation risks associated with the industry?

Jim Green is the national nuclear campaigner with Friends of the Earth, Australia.

More information:

• Nuclear Safeguards and Australia's Uranium Exports <www.foe.org.au/campaigns/anti-nuclear/issues/mining/UraniumSafeguards.doc/view>

• Medical Association for the Prevention of War, "An Illusion of Protection: The Unavoidable Limitations of Safeguards", <www.mapw.org.au/Illusion%20of%20Protection%20index.html>

• Professor Richard Broinowski, "Fact or Fission? The Truth About Australia's Nuclear Ambitions", Melbourne: Scribe, 2003.

• EnergyScience Coalition Briefing Paper #19, "Who's Watching the Nuclear Watchdog? A Critique of the Australian Safeguards and Non-Proliferation Office", <www.energyscience.org.au>.

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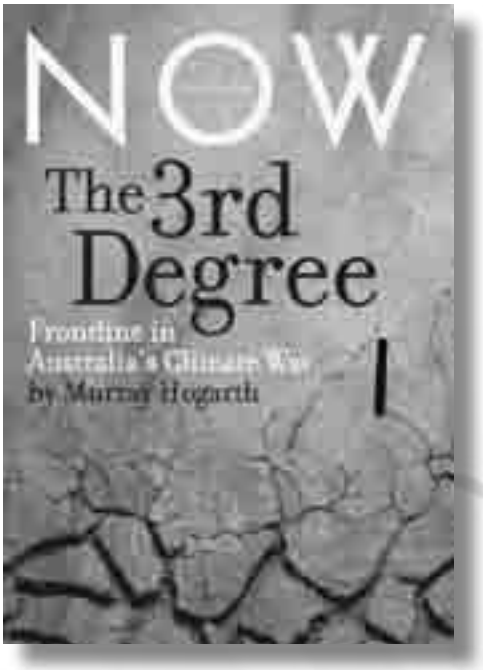

AUSTRALIA'S CLIMATE WAR

Murray Hogarth
The 3rd Degree,
Frontline in Australia's climate war 2007
Pluto Press Australia, 'Australia Now' Series
RRP $17.95

Review by Cam Walker
National liaison officer, Friends of the Earth, Australia.

The 3rd Degree looks at climate politics in Australia. It is written by Murray Hogarth, a former ABC and Sydney Morning Herald journalist now with the Ecos Corporation where, Pluto Press tells us, he "has been helping major companies to understand and respond to their social and environmental challenges since 1999".

The book annoyed me in a number of ways, from its 'I met someone important and they told me this' story-telling approach to his naive 'let's move beyond ideology and do what is required' analysis. The solution he offers makes me think of Francis Fukuyama's claims about 'the end of history'. He offers the solution of a benevolent green capitalism, where the markets will drive innovation and deliver us from global warming.

Ostensibly the focal point of the book is what would happen once we get past a 3 degrees celsius overall warming and what we can do to avoid this level of warming. It is full of one-dimensional analysis and platitudes. One that stood out was his intention not to spend any time 'blaming' greenhouse culprits, as revenge is 'not my thing'. Instead he argues for the need to concentrate on solutions and moving forward together. Given the role of corporations in driving global warming this is a bit like talking about the threat of bushfires but not wanting to chase the arsonists lighting the fires in case it is considered a form of revenge.

In many ways this book is just an update of the 'business will save the planet' analysis popular a half decade ago (sometimes called natural capitalism), but updated to include climate change. I think Murray is right to say the issue of climate change has moved beyond the environment movement – something that many within the movement have been working towards for years. But I disagree with his analysis that business must become the centre-piece of our attempts to deal with climate change.

There is a nasty undertone to this corporate friendly (and corporate aligned) form of environmentalism which Murray completely ignores. He talks in neutral terms about nuclear power as a solution for global warming and describes the political space that could be taken up by a conservative party, which would focus on issues like 'border control' given the fact that many environmental refugees will be seeking refuge throughout our region in coming years. This is exactly the same as Tim Flannery raising the spectre of Australia refusing to accept more immigrants on the basis of the country being 'full', without overtly spelling out his personal position on this.

Murray takes up a lot of space talking about markets and how wonderful they are and especially the benefits of emissions trading. Admittedly he at least starts by saying we need to establish a cap on greenhouse emissions before we can trade, but he is incredibly optimistic about the ability of the market to deliver results once we price carbon. He is especially fond of the company Easy Being Green which started operations in Victoria and then moved to NSW to take advantage of the carbon trading market in that state, only to crash badly as that market collapsed. I'm sure Murray's response to this would be 'we are learning as we go', yet for me it shows the dangers on relying on the market to deliver environmental outcomes. In discussions within the green movement, for instance at the Mittagong Forums, where peak green groups gather, I have often been

amazed at the lack of analysis within some parts of the movement of the pitfalls of market-based initiatives. This overly optimistic approach to market-based solutions is consistent with a movement that has placed a lot of emphasis on engaging with corporates, often for very limited tangible outcomes and sometimes at a real cost to other forms of environmental campaigning.

The 3rd Degree has some strange analysis in the chapter which critiques the green movement. Hogarth says that the movement is 'terrified' of actually succeeding. His argument is similar to that of the first environment minister in the Howard government, Robert Hill, who said that 'we are all environmentalists now', meaning 'business, with all of its resources and innovation and marketing skills is simply better at driving future action than traditional activists'. Just because someone has resources doesn't make them right and certainly, while business has to be a part of the required solutions, suggesting it should be the driving force (where ultimately profit motives will rule) is very similar to the proverbial fox in charge of the chickens because by definition businesses will only do what is profitable. Hogarth writes about the failures of the movement and the claim that it is too idealistic, yet he goes on to talk about companies in such glowing terms that it is hard to believe he really is from the 'raw and aggressive' world of journalism (his words). BP is his favourite beacon of sustainability, yet no where does he even list any of the widely-available critiques of this company. BP is the world's third largest oil and gas company and one of the largest polluters on the globe. In recent years it has been involved in the controversial Baku-Tbilisi-Ceyhan (BTC) oil pipeline, amongst many other clearly unsustainable projects.

Another element of the book that just didn't work is the 'war' analogy – the suggestion that we are at war with global warming (and consumers will be the battalions in the war, etc). This doesn't work on many levels (for the 'enemy' after all, is us, as Murray acknowledges). We are certainly way past a 'business as usual with a green twinge' stage in our collective history and this requires a profound change in how we do everything. But I think that the idea of a climate or sustainability emergency and the need to recalibrate our societies and economies accordingly works far better for our current problems than a war analogy.

There will be many elements at the core of a meaningful response to global warming. The first step must be our recognition that the rich world has an enormous historical and contemporary carbon debt to the rest of the planet. Secondly, if we are to keep warming to a manageable level, we need to accept that there is already too much carbon in the atmosphere and we need to take radical action to not only greatly reduce emissions but also pull carbon out of the air. We cannot, however, throw ideology or ethics out in our mad scramble for solutions. This means we need to be as careful as ever when it comes to looking for solutions, especially those being sold by people who stand to make a lot of cash from the uptake of their ideas. Once we accept the need to reign in our emissions, we will need to determine what would constitute a sustainable level of greenhouse emissions each person could produce, then allocate this at the national level as an annual carbon budget we would need to live within.

Then and only then will emissions trading actually be able to deliver serious outcomes, as will a range of other market-based options. But these approaches are only one element of a response. Behavioural change is another but these first two options are the current darlings of many environmental thinkers such as Murray who neglect the other key element of an equitable response – robust and enforceable policy regimes which set the framework for business to operate in. No wonder this voluntary, 'opt in' approach is so loved by business – it is exactly the self regulation that many industrial sectors have been arguing for decades. In the past, environmentalists were their opponents in this argument, now, many of us are effectively part of their cheer squad. His assumption that we need to place a price on carbon in order to drive innovation into low carbon futures makes sense but unless we place social dimensions at the core of this, then it will lead to more people suffering (low income families not able to pay power bills, coal workers thrown on the unemployment scrapheap, etc).

One of the things that annoyed me the most was Murray's assertion about the nature of the problem of global warming. He says (rightly) that it is not primarily an environmental or economic problem. But he posits it as a personal problem, ultimately being about whether we want to create a sustainable future. I would argue that at its core it is about human rights and social justice, as some parts of the human population have been driving global warming for generations while other elements – the majority world – are suffering from it, despite having contributed very little to the carbon that is currently in the atmosphere. To miss this pivotal understanding, beyond mentioning it in passing, means it is easy to slip into a mind-set where a benevolent and sustainable capitalism seems possible. While he does mention the need for good policy which will make it easier for consumers to do the right thing, such as laws on deposits on beverage containers, he is silent on the fact that industry is almost totally committed to voluntary measures. For example, where are the companies demanding legislated levels of minimum behaviour around extended producer

responsibility? It's a very short list, and this omission alone shows an enormous gap in Murray's overly kind analysis of how business operates.

After his relentlessly positive spin on corporates through most of the book, he does vent a bit of outrage at the end at the failure of the Howard government, the Business Council of Australia, the ALP, the media, the environment movement, consumers, and everyone else who has been either dragging the chain or completely ignoring climate change.

He briefly addresses a lot of interesting turf for such a brief book – from the fact that wilderness is a fallacy, the question of the role of green consumerism in bringing about change (no mention of the class dimensions here), about the need to reach out beyond the Anglo middle-class heartland of the traditional movement, discussion on the idea that we will need to 'farm' nature if we are to maintain ecosystems at a functioning level, the evolution from 'environmentalism' to concepts of sustainability, the priorities of the movement (which long favoured forest protection over climate campaigning), and more.

The audience, I assume, is people in the business sector, presumably who will respond to the historical role being presented to them by global warming, whereupon they will adopt the mantle of saving the planet, helped by us consumers who will take the decisions and drive the opinion polling that will force the government over its own 'tipping point'. That sounds about as convincing as saying there should be a conservative political party taking on the task of 'future proofing' Australia against climate change, as Murray suggests. Regardless of whatever contribution this book might make to the broader discussion about future societies, I know I don't want to live in either of these two Australia's outlined above.

We do live in a remarkable time, where the terrain is shifting profoundly as all sections of our society begin to grapple with the realities of climate change. This offers immense opportunities for forging new movements and alliances. We must not lose sight of the fact that all of this will be driven by enormous ecological, economic and human rights imperatives. If we do believe what climate science is telling us, we must move beyond business as usual in the shortest time humanly possible, which means defining a new role for corporations, not simply expecting them to lead the way. A few years ago there was a t-shirt doing the rounds with the message that 'green is the new black'. If this is true, then climate change is clearly the new green. But in looking for a solution to the onslaught of climate change, we should remember that not everyone looks good in that colour. As growing numbers of companies pull on the green t-shirt, we need to be more wary than ever about their intentions and their ability to actually bring about meaningful change.

THE FOREST WARS

The Forest Wars
Judith Ajani
2007
Melbourne University Press
$34.95, 368 pages

Review by Anthony Amis
Friends of the Earth Forest Network

This is an important, yet fundamentally flawed contribution to the history of Australian forest issues. The book tells the story of the mismanagement of Australian native forests by "morally bankrupt" business interests and inept government bureaucracies. It is definitely worth a read, and the section concerning the profits associated with export woodchipping offers valuable insights into the real driver behind the clearfelling that has laid waste to many Australian native forests since the late 1960's.

However, in its haste to promote plantations, the book glosses over the environmental impacts of plantations. Ajani is highly critical of the current Managed Investment Scheme hardwood plantation expansion, however the criticism is based on economic rather than environmental reasoning.

Ajani's argument hinges on the fact that since the 1920's Australian foresters have argued that pine plantations would be the only means to meet Australia's increasing appetite for timber products. This vision was finally brought to fruition by the Menzies government in the mid 1960's with the first federal intervention into forestry issues – funding for a three million acre softwood expansion throughout Australia via loans to state governments. At today's prices Ajani claims the loans would be worth $460 million.

Estimates about the volumes of timber that were required to be planted at the time were optimistic, so by the early 1990's Australia had a huge stockpile of plantation pine. Ajani claims that this supply could adequately supply all of Australia's sawn timber and imported timber requirements. This theory fits into the black-and-white analysis favoured by many economic rationalists and native forest campaigners alike. With such a supply of plantation pine, there is, Ajani argues, no need to log native forests at all. This argument is not new and has been pushed by numerous conservation groups and Ajani (then Judy Clarke) since the early 1990's.

Ajani explains that the expansion of softwood initially raised the ire of environmentalists as native forests were cleared for the plantation establishment. The criticism was crystallised by the 1973 publication The Fight for the Forests written by Richard and Val Routley. This seminal work looked at the two main forest issues of the day – opposition to softwood expansion and opposition to the then nascent export woodchip industry. The book had a huge impact in exposing the flawed ecological nonsense inherent in forest policy at that time. One wonders how the Routley's would feel 30 years later with conservationists now supporting the land use which they so vehemently opposed in the 1970's.

Another interesting point made by Ajani is that pine producers were also active in funding industry associations that were set up to defend native forest woodchipping. The Radiata Pine Association of Australia had been absorbed into the National Association of Forest Industries. The pine producers were actually not willing to make the break from the native forest woodchippers until well into the 1990's, so until then profits from pine plantation companies were being directed to support export woodchipping companies working against the interests of the conservation movement.

Friends of the Earth has always opposed the export woodchip industry and logging of old growth forests. We have always argued that if logging is to occur in native forests then the volumes would be exceedingly small (a point not discounted by Ajani). However FoE has been vocal in its criticism of plantations, particularly the use of pesticides, the use of toxic timber treatments and impacts on waterways and local communities which have had plantations foisted on them. This issue has been a problem in many areas, especially northern Tasmania with widespread pollution of drinking water by forestry herbicides such as Simazine and Atrazine. FoE would also argue that by remaining uncritical of the plantation industry, the environment movement has actually done many communities a disservice, leaving them no support in opposing poor land use decisions in their communities. The Ajani book will do nothing to ease their concerns.

The only problems with plantations mentioned by Ajani are: "Plantings on steep slopes or in gullies, water catchments and potential habitat corridors were the prime environment problems. Managing these areas, in some cases withdrawing them completely from the plantation estate, corrected the mistakes made by the foresters' earlier rush to plant" (p.122).

Perhaps Ajani should make a visit to the Strzelecki Ranges or even the Otways where a large percentage of plantations are planted on steep slopes on highly erodable soils. Every time these plantations are logged mass soil movement occurs. Many of these plantations have been privatised and are now in foreign hands. Governments would have to fork out many millions of dollars to buy back the land in question, which could total up to 50% of plantations in these regions. The Otways scenario is interesting in that pine plantations established for pulp are now being replanted with bluegum plantations. The pines were to be logged every 30 years, the bluegums every ten. A large proportion of these plantations lie in the domestic water supply for 50,000 people. Aerial spraying of insecticides commenced in the Otways for the first time in November 2007. Is this really a sustainable outcome?

A novice reading The Forest Wars would presume by Ajani's assumptions that the plantation industry is clean and green when a more cynical view holds that it is reliant on toxic chemicals and is responsible for catchment degradation on a massive scale. One of Ajani's corporate heroes Auspine gets the thumbs up throughout the book. Nothing is said about Auspine being the largest tropical timber importer in Australia, its use of the 'gender bender' herbicide Atrazine in pine plantations or that it is the largest producer of Copper Chrome Arsenate (CCA) toxic timber in the country. CCA treated pine threatens the health of

thousands of Australians, yet like pesticides is not mentioned in Ajani's book.

Ajani also fails to mention that predicted growth rates have been questioned not only by industry hacks but also by conservationists. Duclos in 2002 highlighted that ex state managed pine plantations in Victoria were only getting a 30% sawlog recovery not 50% as predicted by Ajani in an earlier work. Duclos also noted that in the Ballarat region, MAI's (Mean Annual Increment) from Spargo plantation was almost 50% less than what Ajani had predicted. MAI in Gippsland's Strzeleckis Ranges is much lower than predicted growth rates due to logging of native forest under the guise of plantation logging.

Earlier this year, Hancock Plantations started bulldozing bluegum plantations that had failed to grow in central Gippsland. Ajani's understanding of the Gippsland scenario shows a lack of clear understanding about the plantation sector in that region. If Australia has more than enough radiata pine, why in the past six months have pine producers been claiming that more plantations need to be grown to meet future demand? If there were enough plantations to meet all of Australia's needs in the early 1990's, why is PaperlinX now planting 20,000 hectares of plantations, with Gippsland water supplies being increasingly targeted?

That said, it is not beyond the realms of possibility that Australia's forest industry could eventually become sustainable, with possibly 50% of Australia's plantation base having to be retired/'reforested' and the use of most pesticides and toxic timber treatments used in plantation products banned. Export woodchipping from native forests would also have to be banned (which in turn would collapse most of the native forest sawlog sector) and all plantation woodchips used domestically. The odds of this occurring in the near future – particularly in Tasmania, Victoria and NSW – are extremely limited due to the influence of forestry unions and timber industry associations.

The question then would be how to manage a plantation in a sustainable fashion (an issue discussed at: <www.forest-network.org/Docs/Plantations.htm>).

For more details on plantation mismanagement in Victoria see: <www.hancock.forests.org.au>, <www.baddevelopers.green.net.au>.

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