

# NATURAL ADVANTAGE

A BLUEPRINT FOR A SUSTAINABLE AUSTRALIA

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Australian  
**Conservation**  
Foundation

*This balanced Blueprint for a Sustainable Australia calls for leadership; leadership by governments, business and all members of society. Those of us in business need to decide whether to sit on the sidelines and watch our country degrade or to engage, be progressive and play our part in securing our natural advantage. It's time to decide. It's time to lead.*

GREG BOURNE, REGIONAL PRESIDENT, BP AUSTRALIA AND NEW ZEALAND

*Far from being mutually exclusive, the concept of sustainable development and the driving forces of business share much common ground. Indeed, the future belongs to those businesses who play a proactive role in devising ways in which we can meet our commercial needs and sustain the world we live in. At the same time those industries which do not embrace the principles of sustainable development will find that their licence to operate will come under increasing pressure. Natural Advantage makes an important contribution towards our level of understanding how we can achieve true sustainability.*

RICHARD PRATT, CHAIRMAN, VISY INDUSTRIES

*There is no question that sustainable development and its related issues is one of the most important agendas facing every Australian. The ACF's Blueprint for a Sustainable Australia is a thoughtful and challenging response to this increasingly important agenda. BHP and the ACF have not always agreed in the past and no doubt that will also be the case in the future. I am, however, pleased to see that we have plenty of common ground on which to base future constructive engagement on these issues.*

PAUL ANDERSON, MANAGING DIRECTOR AND CHIEF EXECUTIVE OFFICER, BHP

*Environmental problems like climate change, land degradation and loss of biodiversity present people across the world with a serious challenge. Changes in technology are disproving the belief that economies face an unavoidable trade-off between jobs and the environment. Inefficient production methods and costly add-on pollution controls are now being replaced by smart new processes and products that are highly efficient in their use of energy and natural resources.*

*Those who see the environment as a mainstream economic concern and not just a regulatory afterthought are leading this revolution creating enormous opportunities for investment and jobs growth. I applaud the Australian Conservation Foundation for outlining the challenges and opportunities we face in adopting a sustainability agenda.*

BOB CARR, PREMIER OF NEW SOUTH WALES

Natural Advantage: A Blueprint for a Sustainable Australia *is an important and valuable contribution to the debate about Australia's environmental future.*

*In Australia, environmental matters have often been on the backburner. They have not been major matters for political debate. The time has come when they should be. There are many other countries that have made much greater effort to protect and preserve their environment than has Australia. Because we are a large and often sparsely populated continent, we have too often taken the view that we can get away with imperfect environmental practice where others would have taken the most stringent measures. For the future, this is just not good enough.*

*My own concern about the environment is magnified because I believe Australia's effectiveness as a nation depends upon a significantly larger population which, other things being equal, will increase environmental pressures. This will reinforce the need for effective action for sustainable policies to enhance and protect Australia's natural environment.*

*I value this document and hope it will create a significant debate, which is long overdue.*

MALCOLM FRASER, FORMER PRIME MINISTER

Natural Advantage: A Blueprint for a Sustainable Australia *is a visionary agenda for a healthy 21<sup>st</sup> Century. The Australian Conservation Foundation and the authors, Krockenberger, Kinrade and Thorman, outline an agenda for corporate reform that governments must heed.*

*The ACTU welcomes this significant contribution to planning an integrated future where industry, investment, the environment and social protection are afforded a balanced role in shaping a sustainable future.*

SHARAN BURROW, PRESIDENT, ACTU

*There is a very strong relationship between poverty and environmental risk – between social justice and environmental justice. The increasingly inequitable distribution of economic, social and environmental benefits and burdens in Australia is unsustainable. In this context, ACOSS enthusiastically welcomes Natural Advantage. It not only identifies the links between environment, social and economic policy that we must pursue for a sustainable future but also demonstrates how these can positively reinforce each other.*

MICHAEL RAPER, PRESIDENT, AUSTRALIAN COUNCIL OF SOCIAL SERVICE (ACOSS)

I CAN UNDERSTAND THE HESITATION OF MY GENERATION, INDEED IT IS NO LONGER MERE HESITATION; IT IS THE THOUSANDTH FORGETTING OF A DREAM DREAMT A THOUSAND TIMES AND FORGOTTEN A THOUSAND TIMES; AND WHO CAN DAMN US MERELY FOR FORGETTING FOR THE THOUSANDTH TIME?

FRANZ KAFKA, *Investigations of a Dog*

...THERE'S STILL A PERSISTENT HOPE THAT, ON A NATIONAL SCALE, SOMETHING BIG, SOMETHING GOOD – OR, AT LEAST SOMETHING DIFFERENT – MIGHT BE ABOUT TO HAPPEN; A PALPABLE SENSE THAT AUSTRALIA IS IN SOME KIND OF TRANSITION.

HUGH MACKAY, *Turning Point*



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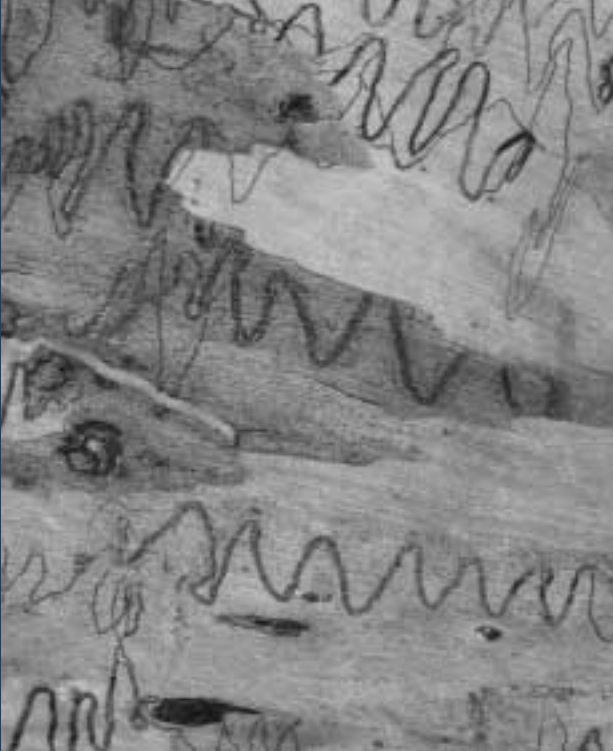
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# PART 1

VISIONS AND OPPORTUNITIES  
FOR THE FUTURE



*It is 2050.*

*During the first 50 years of this century, the Australian economy has been re-shaped to the model of an ecological system, in which nothing is wasted – one person's refuse is another's fertiliser. Production, from farming to manufacturing, is highly efficient and uses minimal materials for maximum output.*

*Corporations are responsible for every step of the life of their products, from digging the raw materials out of the ground, to recycling every component at the end of its life. This has led to great innovation and engendered cooperation across industry sectors.*

*Communities offer a huge choice of living, from cosy villages to dense apartments. They thrive on social and economic equity and possess a powerful sense of self-determination. Walking, cycling and public transport are the easiest and most comfortable ways to get around. Roof gardens adorn urban centres.*

*Our cities work as ecosystems, recycling all waste, capturing water and providing habitat for wildlife. After years of lagging behind with a national building code that didn't mention energy, Australia has become the global leader in ecological building and development, exporting its skills to the world.*

*Australia is now the world's first zero-greenhouse-pollution economy. Hydrogen powers our zero-emission fuel-cell buses, trucks, trains, and cars and is exported to meet the energy demands of Asia. Office buildings create energy from the thin film of photovoltaic cells embedded in their walls and windows.*

*Wind turbine and solar manufacturing plants have replaced coal mines such as those in the La Trobe and Hunter valleys, and jobs are continuing to boom with massive exports of clean technologies to what were previously 'third world' economies, as they leapfrog dirty power to clean energy.*

*Some things never change: we are still a country that loves our beer, and loves our sun.<sup>1</sup>*

Sam van Rood wrote these words for the December 1999 edition of ACF's magazine Habitat. Like Sam himself they are full of energy. Energy to create a new vision of Australia.

AUSTRALIA'S PUBLIC EXPENDITURE FOR EDUCATIONAL INSTITUTIONS AS A PERCENTAGE OF GDP IS THE SIXTH LOWEST OF OECD COUNTRIES. SINCE 1992 EXPENDITURE ON EDUCATION AS A PROPORTION OF OUR GDP HAS DECLINED.<sup>2</sup>

Sam is one of the many talented young people who have worked for ACF over the years. Intelligent, striving and confident that they can make a difference, they have sought out organisations like ACF to help create a new Australia.

They are members of a generation that accept the importance of protecting the environment as a given. They are not afraid of technology to help do this.<sup>3</sup> Too young to be political or business leaders themselves yet, they crave national leadership that will create and implement a vision of a society that is truly modern, because it uses the environment to drive the economy. They believe there is a sustainable Australia waiting to be created.

Their vision may seem utopian to some. But in fact it is already the next industrial revolution. Its details are being planned and implemented as you read this.<sup>4</sup> During the seventy years of the first Industrial Revolution human productivity increased 200 times. Then labour was scarce and natural resources abundant. Now labour is abundant, and natural resources are either scarce or their over-exploitation has led to severe environmental problems. In response to this, in the coming 70 years the productivity of resource use will increase by perhaps 100 times.<sup>5</sup> The technologies and design principles to achieve this are already in development. The digital revolution is merely the first phase of a complete industrial revolution, a sustainability revolution.

The revolution is built on dramatic reductions in environmental impact, whether of waste and greenhouse gas emissions, or on natural living systems. It involves closed loop production systems extending from the micro-scale of nanotechnology to the macro-scale of urban design.

If a company or country is not prepared for this revolution, it will be left behind. If the vision is absent the country will remain in the 20<sup>th</sup> century, drifting into global obscurity like Argentina did in its transition from the 19<sup>th</sup> to the 20<sup>th</sup> century.<sup>6</sup> It is not a picture of Australia we relish.

Australia has tremendous opportunities in the 21<sup>st</sup> century.

Various internal factors will determine whether Australia becomes an economically successful and culturally dynamic nation in the near future. These factors include our:<sup>7</sup>

- electronic communications capacity
- harvesting and applying knowledge
- open society and decision making processes
- cooperativeness
- image
- innovation
- environmental performance.

How does Australia rate on these criteria?

AMONG OECD COUNTRIES, AUSTRALIA IS ONE OF THE LARGEST EMITTERS OF ENERGY-RELATED CARBON DIOXIDE, BOTH PER UNIT OF GDP AND PER CAPITA. BETWEEN 1985 AND 1995, THE OECD AVERAGE FOR EMISSIONS PER UNIT OF GDP FELL BY OVER 10 PERCENT BUT AUSTRALIA'S EMISSIONS WERE STABLE; DURING THE SAME PERIOD AUSTRALIA'S ENERGY RELATED CARBON DIOXIDE EMISSIONS PER CAPITA GREW FOUR TIMES FASTER THAN THE OECD AVERAGE.<sup>8</sup>

Australia has good communications infrastructure, and in terms of Internet connectivity is among the best in the world. However, Australia is slipping badly on education, with expenditure dropping in relation to other OECD countries.<sup>9</sup> This will put us behind in the knowledge society stakes.

Our open and robust democratic institutions, tolerance and multi-cultural society are a strength. Our good record in international cooperative initiatives has taken a battering lately on issues such as greenhouse negotiations and threats to withdraw from UN committees, but is certainly redeemable.

Australia's image is not as good as it was. We would like to be seen as 'clean and green' in the eyes of the international community, but in the absence of any real substance behind this slogan, and with the growing sophistication of consumers in North America, Europe and Japan, we are in danger of losing the advances we have already made in this direction. Recent handling of various Indigenous people's issues has also harmed our international image.

Australian researchers have been fantastic innovators, but the corporate sector has not been very innovative at commercialising research and development.

But the current biggest impediment Australia faces is on the environment. We have a particularly 'hot, heavy and wet' economy; one that requires large amounts of energy, materials and water to produce a unit of gross domestic product (GDP).<sup>10</sup>

Unless we can 'cool, lighten and dry' our economy we will be stuck in the 21<sup>st</sup> century peddling the products of the 20<sup>th</sup> century. Coal, uranium, woodchips, iron-ore and even aluminium<sup>11</sup> will decline in demand and value in the coming decades.<sup>12</sup>

But there is a happy solution to what is both an environmental and economic problem.

We can use the environment to drive the economy and gain an international competitive advantage in the same way that we have previously used natural resource exploitation to drive our economy. Using the environment is a sensible economic development strategy in the 21<sup>st</sup> century for several reasons.

- Consumer demand for products of high environmental integrity – whether they are produced using closed loop processes, are free of genetically modified organisms (GMOs), are recyclable, or minimise impact on land, water and biodiversity – will increase. This trend is evident around the world and is unlikely to reverse.<sup>13</sup> Therefore countries that base their economies on products and services of high environmental integrity will have market advantages.
- The environment will increasingly bear on international relations, whether through international environment treaties such as on climate change, through the integration of environmental measures into trade negotiations, or through treaties that seek to avoid conflict over natural resources like water. Countries that don't measure up will face direct or indirect trade sanctions.

BETWEEN 75 AND 82 PERCENT OF PEOPLE IN AUSTRALIA PURCHASED PRODUCTS IN THE LAST 12 MONTHS ON THE BASIS OF SOCIAL/ENVIRONMENTAL ISSUES.<sup>14</sup>

Australia is a perfect place to have an [environment-led economy](#). First, the image works. It is easy to perceive Australia as 'clean and green'. Indeed we have used the image, without significant substantiation, to attempt to gain market advantage.

Second, we have natural market advantages in certain fields, particularly solar technology (due to our plentiful sunshine and previous research and development), water technologies (due to the problems we face with water and the innovation we are capable of), and rehabilitation services (gained through land management and mining experience).<sup>15</sup>

Third, we can make easy gains. Our energy inefficiency means that it is relatively cheap and profitable to become energy efficient compared to countries that have already undertaken the easy steps. The Australian economy is ripe for environmental modernisation.

Fourth, Australians are craving a big idea. An environment-led economy is an idea that is both inspiring to young people's environmental passions and appealing to older Australians' concern about quality of life. It is a vision that can provide a sense of purpose for coming generations, countering the malaise of inaction and resignation about the future that many young people experience.

Victoria and New South Wales in particular are ripe for an environmental modernisation push, using greenhouse policy to drive the economy.<sup>16</sup>

They have advantages over other states in

establishing an environmental economy. They have mature, rather than frontier, economies. They have strong manufacturing bases suited to environmental modernisation and are at the forefront of the Australian digital economy. Melbourne and Sydney have excellent public transport infrastructure, which is currently under-utilised due to a lack of strategic planning. They have skilled and innovative workforces. Sydney and Melbourne are well connected to global flows of knowledge.<sup>17</sup> And both states have electoral support for progressive government strategies in these areas.

These states, in combination with national leadership, could drive a new environmental economy. However, all states can benefit from aspects of this project. Tasmania and Western Australia have shown leadership in awareness of the advantages of a genetic engineering-free future.

As with all reforms there will be some adjustment pain [but there will be multiple beneficiaries](#).

- Overall business will benefit as it becomes more internationally competitive. Through certification, environmental performance reporting, and triple bottom-line performance, Australian business will be able to compete with world's best practice.
- This environmentally-driven economy will create jobs. Studies in the European Union have shown that a 15 percent reduction in carbon dioxide emissions by 2010 as compared to 1990 will create 1.9 million more jobs than business as usual.<sup>18</sup> In

THE DOW JONES SUSTAINABILITY GROUP WORLD INDEX WAS OUTPERFORMING THE ORDINARY GROUP WORLD INDEX BY MORE THAN 50 PERCENT OVER A FOUR-YEAR PERIOD TO DECEMBER 1999.<sup>19</sup>

Europe there is already reference to 'green-collar' jobs<sup>20</sup> to describe the burgeoning growth in environmentally-related employment.<sup>21</sup>

- Unemployment will fall as new jobs are created in environmental industries and in the environmental modernisation of existing industries.
- Farmers will benefit as the continuing degradation of their resource base is reversed.
- Urban and rural Australians will benefit from improved quality of life.
- Regional and rural Australians will benefit as land restoration creates regional jobs and industries.
- Young people will be given hope in keeping with their aspirations.
- This economy can be used to improve productivity. A number of Australian studies have shown that energy consumption in Australia could be cut by 20-40 percent at no net economic cost.<sup>22</sup>
- Industrial and sharemarket growth will be stimulated. Renewable energy and energy efficiency is the fastest growing industry sector in NSW, outstripping even information technology and tourism.<sup>23</sup> Sustainable industries are proven better economic performers.

New 21<sup>st</sup> century economies are carbon-light economies – the knowledge economy, the digital economy and the environmental economy are natural partners.

As National Competition Policy was a flagship for a previous generation of reform, so environmental modernisation needs a powerful surge of legislative might. It should be treated as seriously as competition reform, with powerful institutional arrangements and a robust analytical and conceptual basis. The National Sustainable Future Policy needs teeth as sharp and as big as the National Competition Policy's. And it will find greater community acceptance than competition policy.



## GAINING A NATURAL ADVANTAGE – OUR NEW NATIONAL PROJECT

Australians will respond positively to a big national project that has the environment as its theme, especially one aimed at prosperity, modernisation and optimism. As Hugh Mackay says "there's still a persistent hope that, on a national scale, something big, something good [...] might be about to happen".<sup>24</sup>

National leadership is essential. Only by sending strong signals from the top can an economy and a society be expected to change direction. Bottom-up reform is important, but unless the top mirrors the messages from the grassroots, progress will be slow. Communities and local governments can only struggle so far against legislative, administrative and entrenched constraints.

The major political party that genuinely adopts this as its manifesto will reap the benefits. It is a manifestation of the vision that is so lacking in today's political climate. A bipartisan approach will ensure Australia can reap its advantages for the 21<sup>st</sup> century.

Australia has been through a series of reforms in the last twenty years – reform of tariffs, competition reform, and tax reform. The next major round of reform needs to be sustainability reform - a combined social, economic and environmental reform program.

This project will ensure that Australia does not become the nightmare scenario of Hugh Mackay's Turning Point – where "being part of a community has lost most of its force"<sup>25</sup> – nor is seen as a selfish, materialistic or timid society without vision of which Doug Cocks warns.<sup>26</sup>

Sustainability is not a luxury that can be adopted as an add-on or optional extra. It is fundamental to the survival of our country and to the fulfilment of our role as custodians of our ancient and fragile continent. No less than a cultural renaissance, with sustainability at its core, is required in Australia.

Some of the measures needed to put Australia on a path to sustainability will be relatively simple and will repay themselves in higher productivity in the short term. Others will be difficult to undertake and expensive to implement. However, the cost of not implementing them, in dollar and human terms, will be greater.

The Anzac spirit is a term that Australians use to describe their best qualities. It refers to self-reliance, tenacity, working together, good-natured independence, endurance and 'mateship'. These are the same qualities we require to achieve sustainability. Australia's youth has reclaimed the Anzac story as a defining myth of our nation and values the qualities of the Anzac spirit.<sup>27</sup> They are also the most environmentally aware generation.<sup>28</sup>

The big project is to create a fair Australia, a thriving Australia and a vibrant Australia – a sustainable Australia.

An Australia in which the economy is competitive in a globalised world; in which education enables us to create a knowledge society; in which meaningful employment is created and maintained; and in which environmental protection is used to help drive the economy. All are linked.

NINETY ONE PERCENT OF VICTORIANS BETWEEN THE AGES OF 16 AND 24 SAID THE THREAT TO THE ENVIRONMENT IS REAL AND MUST BE TREATED SERIOUSLY, EIGHTY PERCENT PLACED ENVIRONMENTAL PROTECTION ABOVE ECONOMIC GROWTH AND EIGHTY-TWO PERCENT THOUGHT SOMETHING MUST BE DONE ABOUT THE GREENHOUSE EFFECT.<sup>29</sup>



Photographer: David Hancock

## KEYS TO THE PROJECT

Some of the key initiatives are:

### **A national project of sustainability reform so Australia can substantially benefit from the next industrial revolution.**

1. Commonwealth government initiated and led sustainability reform with appropriate policies, legislation and practices. This reform would be of comparable magnitude to previous rounds of national reform such as tax reform, tariff reform and competition policy. A whole of government approach, with the Prime Minister leading, would apply.
2. Stronger Commonwealth leadership role on issues of national and international environmental significance.
3. Reform of inter-governmental institutional, administrative and funding arrangements for environmental management and protection including constitutional reform to give the Commonwealth primary responsibility for environmental decisions.
4. A Commonwealth Sustainability Commissioner to provide independent monitoring and assessment of Australia's environmental performance and environmental data. Sustainability Commissioners would also be established in all states and territories.

### **A long-term, strategic commitment to land and water repair to arrest and reverse the decline in Australia's rural landscapes.**

5. Commonwealth government national leadership on natural resource management issues with a national policy statement on natural resource management and a long-term commitment to funding integrated natural resource and environmental management programs through the introduction of a land and water resources levy.
6. Reform of governmental and inter-governmental arrangements for natural resource management.
7. National standards for environmental accreditation of agricultural production.

### **Environmental modernisation through greenhouse gas reductions and eco-efficiency to drive the new economy.**

8. A Sustainable Industry and Regional Development Commission to provide advice on industry and development policy and a Sustainable Industry Council to develop and facilitate implementation of sustainable industry plans – for both 'cleaning and greening' existing industries and promoting new and emerging environmental industries.
9. A zero waste challenge program to reduce pollution and waste from industry to substantially below licensed and regulated levels.

10. Targets for dematerialisation, that is large reductions in resource and fossil energy use, to bring about environmental modernisation of the Australian economy and industry.
11. A challenging but achievable renewable energy target.
12. A program of measures to drive national energy efficiency.
13. A comprehensive national greenhouse gas emissions trading scheme and/or a carbon tax.

**Elimination of perverse subsidies and environmental tax reform to pave the way for the new economy.**

14. A 'Green Shears' program to eliminate subsidies that contribute to environmental damage or over-consumption of resources. The program would also make suggestions for how the subsidies can be transferred to socially equitable and environmentally sustainable ventures.
15. Environmental tax reform for pollution reduction, productivity gains and employment growth.
16. A Bureau of Environmental Economics to undertake strategic environmental economics policy research including on environmental accounting systems and a new indicator of genuine progress.

**Regional development, social justice, job creation and building of social capital to ensure all Australians benefit from the new economy.**

17. A series of regional sustainability taskforces to develop integrated regional strategies for sustainability.
18. Labour market programs reinforced and coordinated with sustainable industry and regional development strategies and a new 'green jobs in industry' integration fund.

**Reconciliation between Indigenous and non-Indigenous Australians to acknowledge our past and to enable us to move forward.**

19. Government support for regional agreements and other Indigenous land use agreements.
20. Stewardship payments by governments and industry for environmental services provided by Indigenous people.

## WHAT IS SUSTAINABILITY?

*Sustainability is a dynamic process that enables all people to realise their creative potential and improve their quality of life in ways that simultaneously protect and enhance the Earth's life-support systems and its variety of life.<sup>30</sup>*

Sustainability is not the pursuit of a steady state, but a dynamic process. It is for all people, of this generation and those following. And it has a primary goal of ensuring fresh air, clean water, healthy soil and protection of nature.

Fairness is embodied in the concept of sustainability – fairness to this generation, to following generations and to other species.

Sustainability policies must be people-friendly. They must counter the less fair society Australia is becoming.

They must be policies that enhance the **health** of people, for example through reducing air pollution. They must promote **social justice**, for example by ensuring no section of the community suffers worse from environmental degradation than any other. They must ensure **prosperity**, for example by maximising the economic and employment opportunities that Australia can derive from environmental industries and energy and resource use efficiency. They must ensure **democracy**, for example through the building of strong participatory institutions.

IN 1996 TWO MILLION AUSTRALIANS LIVED BELOW THE POVERTY LINE. THE TOP 20 PERCENT OF HOUSEHOLDS HAD 44 PERCENT OF PRIVATE INCOME WHILE THE BOTTOM 20 PERCENT HAD JUST 3 PERCENT. THIS MAKES AUSTRALIA ONE OF THE MOST UNEQUAL OF ALL DEVELOPED COUNTRIES (HAVING SLIPPED FROM SEVENTH TO FIFTEENTH ON THE UN INDEX OF HUMAN DEVELOPMENT).<sup>31</sup>



Photographer: David Hancock

## MAJOR CHALLENGES FOR THE FUTURE

At the beginning of the 21<sup>st</sup> century, we are faced with a series of major challenges. These challenges take on a special significance as the world moves from the closed blocks of the Cold War to the open world of globalisation. Maintaining healthy rivers, soil, forests, air and food will be more important than it has ever been. While global forces such as free trade will put enormous pressure on the environment, counter-vailing pressures, through global environment treaties and citizens' movements, will protect the environment.<sup>32</sup> Participation in either set of pressures, globalised economics or globalised environmental protection, will not be optional. Failure to participate in either will leave nations isolated and vulnerable.

### **Economic, environmental, social and cultural challenges to a Sustainable Australia**

Many of the challenges Australia faces are integral to its journey to sustainability. Some of the fundamental challenges are:

- How to wean the Australian economy off climate-warming fossil fuel energy.<sup>33</sup>
- How to manage the transition to sustainable energy.<sup>34</sup>
- How to get off the under-priced water drip.<sup>35</sup>
- What the future of agriculture is.<sup>36</sup>
- How to restructure an economy to benefit not just the commodities sector.<sup>37</sup>
- How to protect the natural assets of the tourism industry.<sup>38</sup>
- How to halt the fall in the Australian dollar.<sup>39</sup>
- How to regulate the communications and information industries.<sup>40</sup>
- How to take advantage of environmental industries.<sup>41</sup>
- What the future of Australian manufacturing is.<sup>42</sup>
- How to make Australia a less wasteful society.<sup>43</sup>
- How to keep up in education.<sup>44</sup>
- How to create jobs.<sup>45</sup>
- How to deal with the changing nature of work.<sup>46</sup>
- How to stop the growing social divide in the community.<sup>47</sup>
- What sort of social safety net Australia should have.<sup>48</sup>
- How to deal with industrial relations.<sup>49</sup>
- What level of taxation Australia should have.<sup>50</sup>
- What Australia's population should be.<sup>51</sup>
- How to cope with the increased influx of refugees.<sup>52</sup>
- How to manage the move from the inland to the coast.<sup>53</sup>
- How to maintain a multi-cultural society.<sup>54</sup>
- What the role of Australian culture is.<sup>55</sup>
- How to reconcile Indigenous and non-Indigenous Australians.<sup>56</sup>
- How to maintain and nurture positive Australian values.<sup>57</sup>

## THE BLUEPRINT

*Natural Advantage: A Blueprint for a Sustainable Australia* focuses mainly on environmental sustainability as this is ACF's field, but recognises that sustainability has cultural, social and economic dimensions. Many of these are inextricably linked to the environment, and the policy framework we have developed deals with these relationships.

Sustainability must of course be pursued at all levels of society, from the individual to governmental to transnational. Government policies can influence local sustainability, but there is much that can be done at a local level that this work does not explore in any great detail.

The demonstration of local sustainability in practice, through community self-reliance, organic farming, co-operatives, and questioning the status quo in production and transport – as well as the pursuit of simpler more sustainable lifestyles – are valuable conjuncts to a sustainable Australia strategy, but our primary aim here is to tackle the question of national aspirations. It may be true that sustainability can only be achieved by the cumulative effect of it being practised at the local level, but likewise it may be true that it can only come about when it becomes a national goal.

*Natural Advantage: A Blueprint for a Sustainable Australia* places more emphasis on the actions of government than of the corporate sector. This is despite recognition of the substantial role that business can have on sustainability and the leadership being provided by progressive businesses, particularly

in Europe and north America, but also increasingly in Australia.

Consumer pressure for ethical corporate environmental and social responsibility, along with a genuine desire to be good corporate citizens, will ensure that some corporations will be effective change agents in the quest for sustainability. Businesses with retail operations are tested in the market every day, not just at the polls every three years.

A KPMG survey found that 58 percent of respondents confirmed they would want to invest in a company recommended by a well-known environment group.<sup>58</sup>

While the corporate sector, like the community sector, is immensely important in advancing sustainability, it is ultimately governments, and particularly the Commonwealth government, which needs to provide national leadership in this respect.

Governments are increasingly accused of a lack of leadership and of being poll-driven. Despite the goodwill of the community there has been a reluctance by the major political parties to turn the environment into a major plank of economic and social policy. We believe this is primarily through a lack of understanding of how environment, social and economic policy can positively reinforce each other. The environment is treated like an 'end of pipe' solution – to ameliorate the excesses of an unsustainable economy, rather than drive a sustainable economy.



AUSTRALIA SPENDS LESS ON POLLUTION ABATEMENT AND CONTROL THAN ALL 18 OTHER OECD COUNTRIES SURVEYED, ONLY 0.7 PERCENT OF GDP FROM PUBLIC AND PRIVATE SECTORS.<sup>59</sup>

Leadership and investment from both governments and the private sector is required as ACF and the National Farmers Federation have proposed for natural resource management.<sup>60</sup>

This work has costed recommendations (available in the modules of the electronic version).

In many cases the cost of **not** taking measures is far greater – in terms of future human health costs, land degradation costs, lost business opportunities etc – than the cost of the measures.

If the size of the figures is frightening it is because the size of the task is immense. Governments have to consider sustainability investment as defensive – the Commonwealth government spends over \$1 billion a month on conventional defence, dwarfing environmental expenditure.<sup>61</sup> Investing in prevention is prudent and strategic. It is an investment in the public good for the whole community, urban and rural.

The biggest challenge a work such as this faces is the fear that sustainability as a national aspiration is too difficult, or even impossible.

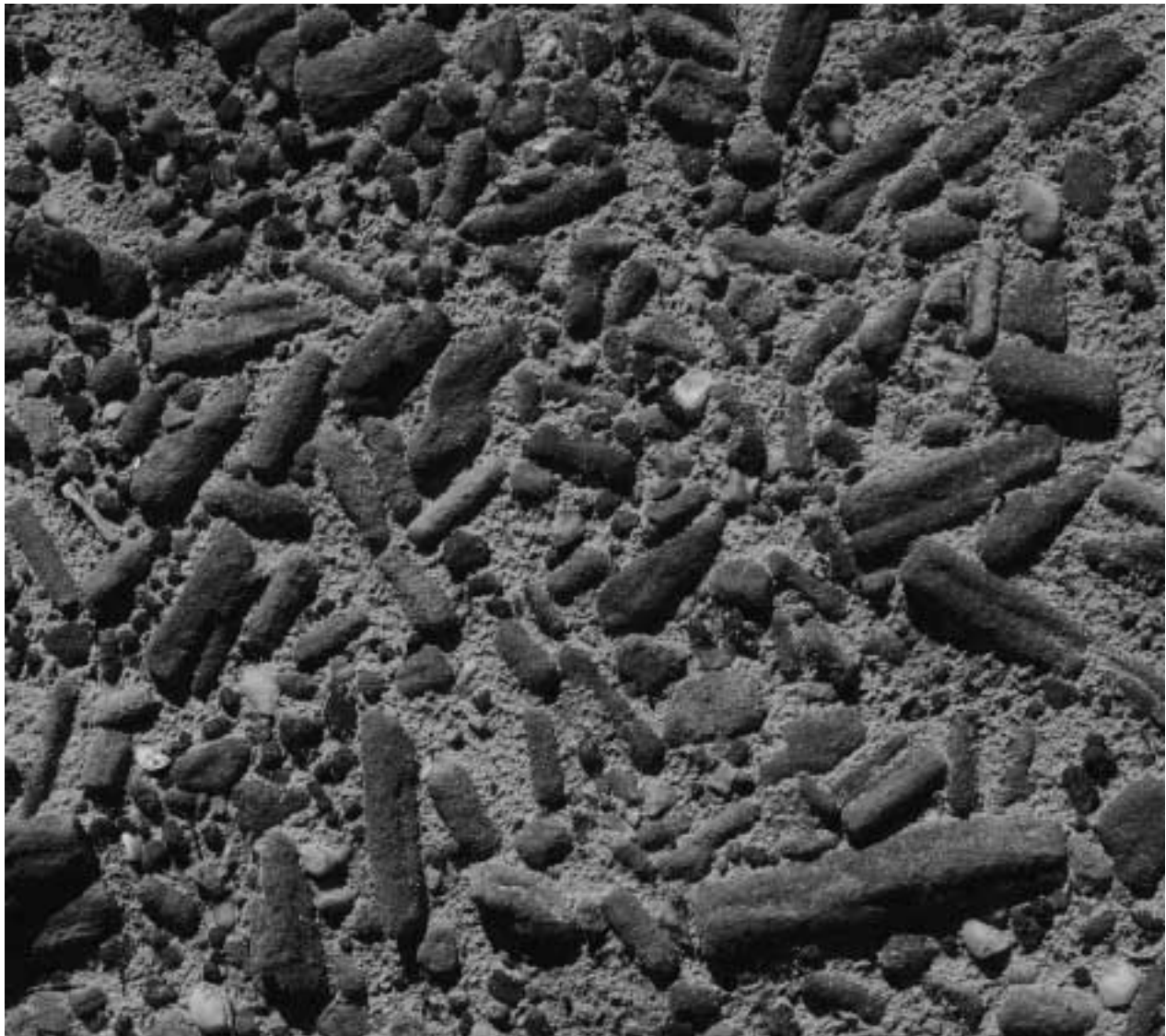
But we don't share that fear. Australians are environmentally concerned. Younger Australians have a special concern for the environment - it is central to their value systems. Older Australians are concerned about quality of life.

Australians know they live in one of the best places on Earth. They increasingly realise that things must change to keep it good.

Sustainability is not a hairshirt. There are many ways that we can find enjoyment, and even be extravagant, without undue cost to our environment. Australia is ideally suited to this notion of 'sustainable extravagance'. It has magnificent natural areas to enjoy, culture to imbibe, sport to be excited by, and food and wine of the highest quality.

As Sam van Rood said, 'we are still a country that loves our beer, and loves our sun'. And so it should be. But let's make sure it's one where our natural advantage leads us to sustainability, prosperity and fairness.

ALREADY 40 PERCENT OF THE ENTIRE GLOBAL DISEASE BURDEN IS ENVIRONMENTALLY BASED. THAT IS EXPECTED TO INCREASE BY 50 PERCENT OVER THE NEXT TEN YEARS.<sup>62</sup>



# PART 2

THE BLUEPRINT MODULES



Full policy modules for the following 25 sections are available at the Australian Conservation Foundation website at <http://www.acfonline.org.au/blueprint>

They give:

- Visions for the future
- Background information
- Plans of action with recommendations and timelines
- Costs and revenue

# 1 LAWS AND LEADERSHIP (THE ROLE OF THE COMMONWEALTH)

Over the last 30 years the Commonwealth has had increasing constitutional capacity to lead on environmental management decisions. This shift from the states has occurred for a number of reasons: increased centralisation within the federation, increased recognition of the importance of a national approach to environmental issues, agreement between the states, the High Court's recognition of the use of the constitutional external affairs power, and increased negotiation of and accession to international conventions on the environment. Environmental issues are geographically and institutionally broad ranging and require broad ranging responses.

The ad hoc development and use of the Commonwealth's environmental powers was recently reviewed by the Commonwealth government, which then made an effort to streamline the Commonwealth and state roles and responsibilities in relation to the environment. This resulted in the Environmental Protection and Biodiversity Conservation Act 1999. However, key environmental groups and environmental lawyers see the Act as being too limited in its scope. They are concerned the Act can allow the Commonwealth to return significant powers to the states and leaves too much to the discretion of the Minister for the Environment. The mainstream environmental groups in Australia are calling for a major overhaul of the legislation.

Greater leadership is required on many international environmental issues including world heritage and climate change, as well as national

leadership on issues such as the degradation of the Murray-Darling Basin, and land clearing. Greater consistency and long term commitment is also required in Commonwealth funding for environment programs.

A stronger national approach to the environment is required. The reasons include:

- Environmental issues are often geographically broad ranging, globally and nationally.
- The size and nature of some of the problems means that only the Commonwealth has the money and the strategic capacity to respond appropriately.
- States do not necessarily have national and international interests in view when making land-use decisions – the Commonwealth is more likely to.
- Broader health and economic considerations depend upon a national strategic approach to well-managed natural assets.

*The legislation [Environment Protection and Biodiversity Conservation Act 1999] provides a framework under which the states may be free to make 'environmentally unsound' decisions. Equally, because of strict drafting of the agreements and the high standards set by the Commonwealth, state approval powers may be tightly constrained. Once again, neither approach is required by the legislation but both are permitted.*

RON CASTEN QC AND DAVID MOSSOP.<sup>63</sup>

ACF proposes:

- A stronger leadership role by the Commonwealth government on issues of national and international environmental significance.
- Strengthened national environmental legislation with broader areas of responsibility, removal of the capacity to hand back approval powers to the states, and tightened ministerial discretion.
- A Sustainability Commissioner.
- Reform of inter-governmental institutional, administrative and funding arrangements for environmental management and protection including constitutional reform to give the Commonwealth primary responsibility for environmental decisions.

## 2. GREEN SHEARS (CUTTING ENVIRONMENTALLY DAMAGING SUBSIDIES)

If extraterrestrial visitors were informed that human governments had been subsidising businesses to destroy the environment and then spending millions of dollars to clean up the mess, surely their reactions would be 'what a strange world!' Yet this is precisely what is happening in Australia. In recent years there has been growing community awareness of the hidden subsidies made by Australian taxpayers to environmentally destructive activities such as woodchipping, land clearing, fossil fuel use and overuse of water. This has led not just to environmental damage, but also to health impacts, for example where the health costs of air pollution are not accounted for in road and fuel charges.

Indeed, one report undertaken for the Commonwealth Environment Department a few years ago estimated that the total level of government subsidies to environmentally-damaging activities was billions of dollars a year – far more than governments around Australia were spending on environmental protection.

The proposed Green Shears Program would highlight and remove government subsidies and programs that contribute to environmental damage, thereby speeding progress towards a sustainable Australia.

*Better pricing for natural resource use and the application of economic instruments are critical measures in achieving environmental goals and improving economic efficiency.*

SENATOR ROBERT HILL, COMMONWEALTH MINISTER FOR THE ENVIRONMENT AND HERITAGE.<sup>64</sup>

For both environmental and economic reasons it is inappropriate for environmentally destructive industries and projects to be supported through 'hidden', taxpayer-funded subsidies. ACF proposes:

- An inquiry into environmentally damaging government programs and subsidies along with the proposed inquiry into environmental tax reform. The inquiry will reveal the subsidies to business and individuals that currently contribute to environmental damage and over-consumption of resources.
- A 'Green Shears' program, modelled on the successful Friends of the Earth 'Green Scissors' program in the United States, to eliminate those subsidies that contribute to environmental damage or over-consumption of resources. The program would also recommend how the subsidies can be transferred to socially equitable and environmentally sustainable ventures.

GOVERNMENT FINANCIAL SUBSIDIES TO THE ENERGY PRODUCTION, WATER AND WASTE-WATER, SOLID WASTE DISPOSAL, FORESTRY IN NATIVE FORESTS, AGRICULTURAL CHEMICALS AND FISHERIES SECTORS (INCLUDING COMMONWEALTH, STATE AND LOCAL GOVERNMENT TAX INCENTIVES AND REBATES, UNDERPRICING OF RESOURCES AND SERVICES AND DIRECT SUBSIDIES) TOTALLED AT LEAST \$5.7 BILLION IN 1993-94, EQUAL TO 4.4 PERCENT OF TOTAL REVENUES OF AUSTRALIAN GOVERNMENTS.<sup>65</sup>





### 3. TAXING WASTE, NOT WORK (ENVIRONMENTAL TAX REFORM)

Numerous overseas studies have also shown that by putting taxes on environmental 'bads', such as waste, and taking them off social 'goods', such as work, environmental protection and job creation can both be achieved. This outcome is often referred to as the environment and jobs 'double dividend'. Studies also show that the double dividend boosts economic growth and enhances competitiveness.

The United Kingdom, Netherlands, Belgium, Finland, Sweden, Norway, Denmark, Slovenia, Austria, Switzerland, Italy, France, and Germany have all undertaken or are about to undertake some form of environmental tax reform.<sup>66</sup>

The pursuit of the double dividend should be a major focus of future tax reforms. Unfortunately, recent tax reforms undertaken in Australia have overlooked the potential for linking taxes to environmental protection.

*Danish experience through many years is that we have not damaged our competitiveness because of green taxes. In addition, we have developed new exports in the environmental area.*

DANISH MINISTRY OF ECONOMIC AFFAIRS.<sup>67</sup>

*I think a carbon tax makes more sense [than greenhouse credits and trading]. I think that if I had to choose between emissions credits and the trading of those, and a carbon tax as to which one would be more effective, I'd choose the tax.*

PAUL ANDERSON, MANAGING DIRECTOR, BHP.<sup>68</sup>

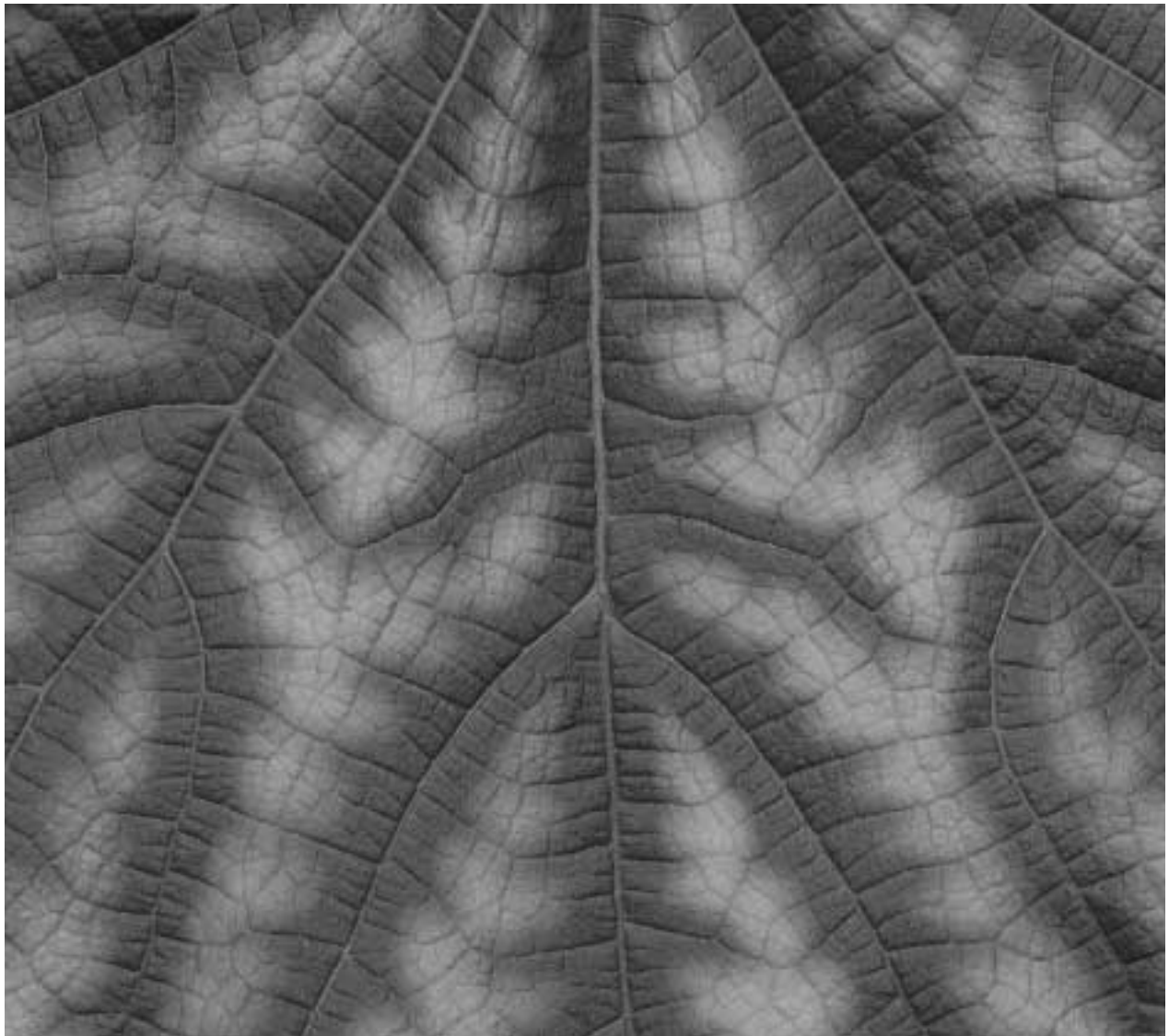
*A future Labor government [...] should seek to gradually incorporate environmental concerns into the taxation system, building in disincentives to environmentally damaging activities such as land clearing, and rewarding alternative energy use, environmental rehabilitation and low-impact methods of production.*

LINDSAY TANNER, SHADOW MINISTER FOR FINANCE.<sup>69</sup>

Fortunately, the opportunity for environmental tax reform is not lost and it should be placed onto the national agenda as a key driver for environmental modernisation and for a sustainable Australia. ACF proposes:

- A Green Tax and Environmental Subsidies Inquiry as the first step to taxing for environmental protection and sustainability.
- Removal of existing distortionary taxation incentives and rebates that encourage damage to the environment.
- Environmental tax reform for pollution reduction, productivity gains and employment growth – the environment/employment double dividend.

A VARIETY OF MODELS IN EUROPE ALL SHOW THAT ENVIRONMENTAL TAX REFORM BOOSTS EMPLOYMENT. MOST ALSO SHOW A BOOST IN GDP. THE ORANI - E MODEL HAS SHOWN A RECYCLED CARBON TAX IN AUSTRALIA WOULD RESULT IN A BOOST OF 0.69 PERCENT IN EMPLOYMENT (53,000 NEW JOBS) AND AN INCREASE IN GDP OF 0.2 PERCENT.<sup>70</sup>



#### 4. BUILDING SOCIAL CAPITAL (COMMUNITY PARTICIPATION)

People who are alienated from decision-making processes will often decry their inability to change the world. 'But what can one person do?' is a common refrain. In Australia, where cynicism and disillusionment with decision-makers and decision-making processes seem to be at an all time high, this refrain has a particularly strong resonance. As Margaret Mead has stated, however, even small groups of people can change the world for the better, especially if it involves decisions about their own 'local' world and their own collective futures.

Improving opportunities for community participation in decision-making is an essential ingredient for a truly democratic and open society. It is also an important element of what is sometimes referred to as 'social capital' – the idea that people are citizens and not simply consumers. A sustainable and just future will depend upon strengthening community participation and social capital.

Promoting social capital – measured in terms of trust, community involvement in decision-making and a high level of voluntary association – means promoting people as members of a society and not just as instruments of the market. It also means that societal goals – environmental, social and economic – are shared goals that are achieved through a process of engagement and productive compromise.

*The Netherlands National Environmental Policy Plan (NEPP) has also changed the relationships between the government and environmental and other community groups. Increasingly, government has come to see these non-governmental organisations (NGOs) as implementors and monitors of the NEPP, better able than the government itself to educate the public and build support around environmental issues. To that end, the government provides substantial subsidies to environmental groups and funds specific educational projects. [...] But the work of NGOs in the Netherlands goes far beyond educating the public and stimulating environmentally responsible behaviour. They continue to act as critics and watchdogs over environmental policy and the NEPP process, keeping all the parties on track toward the goal of sustainability.*

RESOURCE RENEWAL INSTITUTE (USA).<sup>71</sup>

*Networks of trust, mutuality and social capital are central to efficient functioning of any society. Professor Robert Putnam's comparison of different regions in Italy found that areas rich in social capital and civic organisation performed much better economically than those with more individualistic, nuclear-family based cultures.*

LINDSAY TANNER, SHADOW MINISTER FOR FINANCE.<sup>72</sup>

THE NETHERLANDS NATIONAL ENVIRONMENT POLICY PLAN WAS FIRST ADOPTED BY PARLIAMENT IN 1989. STRONG INTERACTION BETWEEN GOVERNMENT, BUSINESS, ENVIRONMENTAL AND CIVIC GROUPS AND THE PUBLIC IS INVOLVED IN DEVELOPMENT OF NEPPS. MANAGEMENT TOOLS AND CONCEPTS HAVE BEEN DEVELOPED TO ENSURE THAT SOCIETY CAN GRASP COMPLEX ENVIRONMENTAL ISSUES AND DEVELOP COMPREHENSIVE SOLUTIONS.

2001 is to be celebrated as the International Year of the Volunteer. It would be fitting that Australian decision-makers renew their commitment to strengthening social capital in that year. ACF proposes:

- A series of regional sustainability taskforces.
- A community involvement fund to increase the capacity of communities to participate in sustainability planning.
- Improved public funding of community based non-government organisations.



Photographer: M @ Lee Photography

## 5. MEASURING REAL PROGRESS (GREEN AND SOCIAL ACCOUNTING)

'You can't stop progress'. This refrain has justified all manner of dubious activities – the implication being that if the activities generate income and contribute to economic growth they must be good for society. There is increasing recognition that this is far from the case. Real progress cannot be measured simply by the amount of money that is changing hands. For example, money spent on cleaning up an oil spill adds to our economic growth, but it would be ludicrous to suggest that we go out and spread oil everywhere in order to improve the economy.

There is a need to redefine what we mean by 'progress', gain an understanding of what real progress might mean and develop a measure that more accurately reflects the economic, social and environmental wellbeing of Australia than the current measures of economic growth. Only then can we be sure the nation's economic and social strategies are really enhancing the quality of life.

This requires greatly improved environmental economics capacity within government and national accounting systems that measure environmental degradation, resource depletion and social change.

*I'd be the first to admit that we would have a very long way to go before we could call the Federal Budget a triple bottom line document. Just one of its more obvious shortcomings is that it predicts economic growth but doesn't factor in the cost of environmental degradation which results from that growth.*

SENATOR ROBERT HILL, COMMONWEALTH MINISTER FOR THE ENVIRONMENT AND HERITAGE .<sup>73</sup>

ACF proposes:

- A Bureau of Environmental Economics to undertake strategic environmental economics policy research including on environmental accounting systems and a new indicator of genuine progress.
- Increased funding for the environmental accounting work of the Australian Bureau of Statistics.
- An indicator that measures real progress for Australia.

THE GENUINE PROGRESS INDICATOR DEVELOPED BY THE AUSTRALIA INSTITUTE USES PERSONAL AND PUBLIC CONSUMPTION EXPENDITURE ADJUSTED FOR: INCOME DISTRIBUTION, UNEMPLOYMENT AND DEPLETION OF NON-RENEWABLE RESOURCES; VALUE OF HOUSEHOLD AND COMMUNITY WORK; AND DEFENSIVE ENVIRONMENTAL AND HEALTH EXPENDITURE. IT SHOWS THAT FROM 1950 TO THE LATE 1970s GDP AND GPI INCREASED, ALTHOUGH GDP AT A HIGHER RATE. BUT FROM THE LATE 1970s TO 1996 PER CAPITA GDP INCREASED BY ALMOST 50 PERCENT, WHILE PER CAPITA GPI REMAINED CONSTANT.<sup>74</sup>



## 6. TRACKING SUSTAINABILITY (STATE OF THE ENVIRONMENT REPORTING AND ENVIRONMENTAL AUDITING)

Knowledge is power. This maxim is certainly true of environmental protection. If social capital is to be harnessed for a sustainable future then communities must have access to quality information such as:

- the condition of our environment;
- activities that cause environmental damage;
- what governments and industry are doing to promote environmental protection;
- and
- whether policies and other measures are working.

This information needs to be available at the national, state and regional levels. It is integral to building a clever country or knowledge society.

Equally important is the question of how information of this nature is used by decision-makers once it has been generated. Reliable information about the state of our rivers, soil, air, fauna and flora has improved in recent years. Some State of the Environment (SoE) reporting is now undertaken and Auditors General audit the operations of Commonwealth and state government environment departments. Commonwealth and state Sustainability Commissioners are required for governments and the community to effectively track environmental conditions and ensure that environmental information is used to inform decision making.

*Fundamental to building an ecologically sustainable economy is the ability to benchmark our actions, so that we have some measure as to whether we are heading in the right direction.*

SENATOR ROBERT HILL, COMMONWEALTH MINISTER FOR THE ENVIRONMENT AND HERITAGE<sup>75</sup>

ACF proposes:

- Commonwealth and state/territory Sustainability Commissioners to provide independent monitoring and assessment of Australia's environmental performance and environmental data.
- Legislation and resources in all jurisdictions for regular, comprehensive and coordinated State of the Environment reporting.
- Tracking of government decision-making by Sustainability Commissioners to determine whether sustainability principles and criteria are being effectively incorporated into those decisions. This would include ensuring that existing environmental data are utilised in decision-making.
- A consolidated Commonwealth Green Budget.

## 7. MAKING IT OUR BUSINESS TO BE GREEN (CORPORATE ENVIRONMENTAL RESPONSIBILITY)

Since the industrial revolution the corporate world has always been driven by one goal – profit. But in the last ten years we have witnessed the roots of a corporate revolution. Environmental and social responsibility are increasingly being seen as essential ‘bottom line’ goals of business along with profits. The most progressive companies are now adopting these goals, not only because they are keen to be good ‘corporate citizens’, but because it makes good business sense.

Interface, a carpet manufacturer that operates in approximately 110 countries world wide including Australia, has aspired to be the world’s first sustainable corporation. It also hopes to be the first restorative company by influencing other corporations to be sustainable.

Corporate Australia needs encouragement from governments and the community to take up the revolution. Government’s role is principally as a regulator ensuring that Australian companies perform to the highest environmental and social standards, both in Australia and overseas, and that information about corporate performance is readily available to the community. Community members, in turn, can push Australian companies towards greater environmental and social responsibility through their purchasing power and their role as investors. For the market to work well consumers need information.

*We did not pay sufficient attention to the environmental and community aspects of our mining activities [at Ok Tedi] and it had a negative impact on our reputation and financials.*

PAUL ANDERSON, MANAGING DIRECTOR, BHP.<sup>76</sup>

*The biggest issue is that most companies are dealing with problems after they’ve been created and not really building environmental considerations into the way they do business.*

DOUG HOLMES, COORDINATOR, MONASH UNIVERSITY CENTRE FOR ENVIRONMENTAL MANAGEMENT.<sup>77</sup>

*The Wall Street guys did not cook [socially responsible investments] up. They’ve been dragged kicking and screaming into it. They would have lost business if they didn’t respond.*

STEVE SCHUETH, PRESIDENT US SOCIAL INVESTMENT FORUM.<sup>78</sup>

ACF proposes:

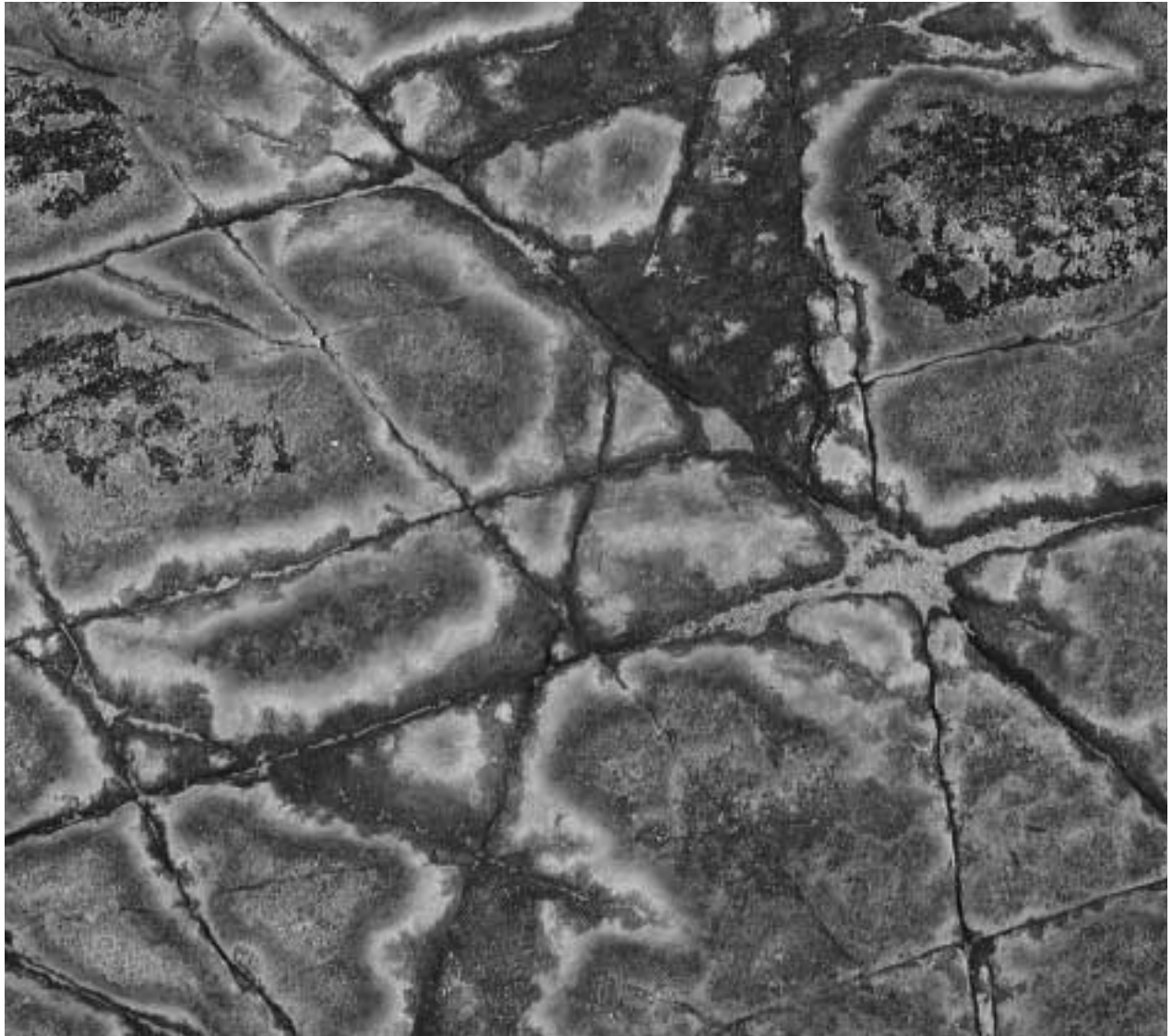
- A corporate environmental commission within the Australian Securities and Investment Commission to ensure compliance with mandatory corporate environmental reporting and to advise on corporate environmental law reform.
- A mandatory corporate code of conduct for Australian companies operating overseas.
- A national product eco-labelling scheme to inform consumers about the environmental and health aspects of the products they are purchasing.



IN THE USA SOCIALLY RESPONSIBLE INVESTMENT PORTFOLIOS IN 1999 WERE WORTH US \$1,497 BILLION IN COMPARISON TO US \$529 BILLION IN 1997. THIS REPRESENTS A GROWTH RATE TWICE THAT OF THE GENERAL MARKET.<sup>79</sup> IN THE UK SOCIALLY RESPONSIBLE INVESTMENTS GREW FROM \$1.7 BILLION IN 1998 TO MORE THAN \$7.2 BILLION IN 1999.<sup>80</sup>

- Comprehensive environmental performance programs by Australian financial institutions (in particular banks and insurers) including policies relating to their lending and investment decisions.
- An Australian sustainability index within the Australian Stock Exchange.
- Subsidies and/or tax incentives for the use of environmental consultants by small and medium-sized companies.
- Encouragement of emerging socially responsible investment (SRI) products with the introduction of mandatory disclosure laws requiring the disclosure of SRI investment policies on the sale of any financial product with an investment component.

IN SEPTEMBER 1999 DOW JONES IN PARTNERSHIP WITH SAM SUSTAINABILITY GROUP, A ZURICH BASED COMPANY, INTRODUCED THE DOW JONES SUSTAINABILITY GROUP INDEXES (DJSI) BASED ON THE WORLD'S FIRST SYSTEMATIC METHODOLOGY FOR IDENTIFYING SUSTAINABILITY DRIVEN COMPANIES WORLD WIDE.



## 8. HOW MANY PEOPLE DOING WHAT? (POPULATION, CONSUMPTION AND TECHNOLOGY)

The ability of a country or region to sustain its people and other species indefinitely is dependent on the interaction of a complex range of factors including the natural resources of the country or region; the number of people; the lifestyles and consumption of those people; the economic structure of the region; and the use of technology. Too often debates about population in Australia overlook one or more of these factors, focussing simply on absolute numbers and the benefits or costs of increasing or decreasing the total population.

Easy answers such as 'technofixes' or the cessation of immigration are unlikely to provide long-term solutions. Instead, we need careful analysis and the implementation of a range of government, business and community actions.

To achieve a sustainable Australia difficult issues such as population policy must be addressed. We must also tackle our wasteful patterns of consumption and the way in which society uses and abuses technology.

Australians have an ecological footprint of 9 hectares, compared to Americans 10.3 hectares, Canadians 7.7 hectares, Britons 5.2 hectares and Indians 0.8 of a hectare. The available sustainable footprint for the entire Earth is 2.1 hectares per person.<sup>81</sup>

*Contrary to what some people believe, a population policy is not, and should never be, merely about targets for immigration, birth rates or any other single demographic measure. This debate is about a philosophy that encourages a 'whole of government' approach that will allow Australia to develop and grow – in a way that is sustainable.*

MARTIN FERGUSON, SHADOW MINISTER FOR POPULATION.<sup>82</sup>

ACF proposes:

- A national population policy developed with bipartisan support.
- A comprehensive inter-governmental strategy to promote a conserver society.
- Targets for dematerialisation, that is large reductions in resource and fossil energy use, to bring about environmental modernisation of the Australian economy and industry.

## 9. THINKING GLOBALLY (ENVIRONMENTAL SECURITY AND INTERNATIONAL RELATIONS)

'Think globally, act locally' is one of the best known catch-cries of environmental action. Local action is crucial to achieving a sustainable and just future for everyone. Of equal importance is a global perspective – the recognition that we are all part of a global community and either we swim together or we sink together. Australia cannot afford to adopt a 'lifeboat' mentality, hoping to save our natural environment for ourselves by shutting out the rest of the world. The global ecology, community and economy are too interconnected for that approach. Equally, we cannot afford to view the world simply as a 'dog eat dog' market place in which we are competing with everyone else. It is essential that Australian governments, business and the broader community rethink our approach to the world. Global cooperation for environmental protection and social justice, rather than global competition, are ultimately the only pathways to national prosperity and sustainability.

*Large-scale environmental degradation, exacerbated by rapid population growth, threatens to undermine political stability in many countries and regions.*

US PRESIDENT BILL CLINTON.<sup>93</sup>

ACF proposes:

- Redefining the national interest in treaty making processes, the allocation of foreign aid and in bilateral relations to include global environmental protection and social justice.
- Reforming Australia's export credit agency (EFIC) to include rigorous environmental and social impact assessment.
- A national inquiry to assess the environmental impacts of trade liberalisation in Australia.
- A substantial increase of Australia's overseas aid program and the program refocussed on environmental protection and local capacity building.
- Recognising global environmental threats as important threats to Australia's national security and including the Environment Minister on the National Security Committee of Cabinet and creating a Parliamentary Secretary for Environmental Security.

The United States federal administration has an Assistant Secretary for Environmental Security, as well as an Assistant Secretary for Global Environmental Affairs. Both of these secretaries are members of the President's National Security Council.



Photographer: Alicia Alit Trewati/Communique Images

## 10. LAND AND WATER REPAIR

Natural resource management is complex and deals with the way we manage our land, our water and our vegetation. Australia needs a more integrated approach to natural resource management to address the interlinked issues of agriculture (and other rural land uses), land degradation, river and coastal health, water quality and biodiversity conservation.

Natural resources are the basis for the food we eat, the fibre we use, and exports worth billions of dollars every year. However, European land management practices have led to significant degradation of our natural resources. This is imposing a heavy cost through soil erosion, salinity, habitat destruction and fragmentation, loss of plant and animal species, declining river health and water quality, and loss of ecosystem services such as pollination and natural pest control.

Over the last decade rural and regional communities in particular, have become more aware of the problems we face and more active in tackling them through programs such as Landcare and Bushcare. Strategic planning at the catchment or regional scale has improved markedly.

Despite these successes, we are failing to make many serious inroads in arresting trends in landscape degradation. Things are getting worse, not better, and they are getting worse at an accelerating rate. The cost of not acting is greater than the cost of acting.

*Governments are increasingly being obliged to look at a range of issues to do with the quality of our natural resources: the quality of our water – the water we drink and the water that's in our rivers – the quality of our land and its erosion, the quality of our air – [things] some may call environmental issues and they are that, but they're more than that. They go to the very basis of Australia's productive base – what we have been doing to it and what is needed to ensure we have a sustainable natural resource base in this country.*

TED EVANS, COMMONWEALTH TREASURY SECRETARY.<sup>84</sup>

*Some practices are just not sustainable in their current form, with many communities battling increasing costs and decreasing productivity from accelerating salinity, acid soils and erosion for example. These threats aren't just confined to agriculture and biodiversity; increasingly, problems like salinity are affecting tourism, coastal fisheries, water supplies – even urban and regional infrastructure like roads, pipes and buildings.*

IAN DONGES, PRESIDENT, NATIONAL FARMERS FEDERATION.<sup>85</sup>

THE VALUE OF POLLINATION SERVICES PROVIDED BY INSECTS AND BIRDS IS ESTIMATED TO BE WORTH MORE THAN \$1 BILLION PER YEAR TO AUSTRALIAN AGRICULTURE.<sup>86</sup>

Together, ACF and National Farmers' Federation released a *5-Point Plan for Repairing the Country* in May 2000.<sup>87</sup> Our 5 Point Plan includes:

1. A ten year bipartisan commitment
2. National leadership involving national targets, a national policy framework and accountability in providing funds
3. A new scale of strategic investment totalling \$6.5 billion per year for ten years
4. Strong private sector engagement providing about half the investment required
5. The active involvement of all Australians

Consistent with this five-point plan, ACF proposes:

- National leadership by the Commonwealth government on natural resource management issues with a national policy statement on natural resource management.
  - A long-term Commonwealth government commitment to funding integrated natural resource and environmental management programs through the introduction of a land and water resources levy.
  - Reform of governmental and inter-governmental arrangements for resource management by:
    - improving Commonwealth and state cooperation on funding, delivery and monitoring of natural resource management programs;
    - developing transparent cost sharing principles for funding of resource management programs;
  - reviewing the roles of the Agricultural and Resources Management Council of Australia and New Zealand (ARMCANZ) and the Australian and New Zealand Environment and Conservation Council (ANZECC);
  - regional delivery of integrated natural resource management programs against national standards and benchmarks, including an accreditation system for regional strategies and a comprehensive system of monitoring and reporting; and
  - improving accountability by decentralising and making funding processes more transparent.
- Increased landholder and community involvement in land and water management by:
    - giving greater emphasis to the social dimensions of land resource management activities;
    - raising broader community awareness of land degradation through a national education campaign;
    - increasing incentives to landholders to pursue conservation outcomes; and
    - improving the capacity of landholders and community groups to participate in land and water management programs.

IN THE UK A MAJOR RETAILER, SAINSBURY'S, HAS ANNOUNCED THAT ALL PRODUCTS STOCKED WOULD BE EITHER ORGANIC OR PRODUCED USING SYSTEMS THAT COMPLY WITH INTEGRATED PEST MANAGEMENT GUIDELINES.<sup>88</sup>

- Private sector involvement in land and water management by:
  - encouraging private investment in land management programs;
  - encouraging industry and business incentives for whole farm planning; and
  - supporting the development of industry codes and certification programs for sustainable agriculture.
- National standards for environmental accreditation of agricultural production.
- Improvements in government and industry support for research and development in environmental and natural resource management.
- Devolving more funding and decision making for key land management tasks to the regional or catchment level, where appropriate, and provide suitable levels of skills and resource support.
- Integrated regional strategies by:
  - incorporating natural resource management into local government and land use planning; and
  - improving the community's ability to monitor local and regional changes to our environmental and natural resource base over time and report these changes periodically at the national scale.
- Valuations of natural resources and the opportunity costs of not protecting ecosystem health by the proposed Bureau of Environmental Economics.



## 11. LICKING THE SALT (A NATIONAL SALINITY ACTION PLAN)

Salinity is a pressing national issue, costing the Australian economy hundreds of millions of dollars each year. Salinity occurs in both dryland and irrigation areas and is reducing the productivity of some of our best agricultural land, particularly in the Murray-Darling Basin and the WA wheatbelt.

Salinity is damaging infrastructure such as building foundations, roads and pipes, and is reducing the quality of water for urban centres including Adelaide. Salinity is also having serious ecological impacts on many areas of native vegetation, wetlands, floodplains and rivers. An estimated 500 plant species face extinction from salinity in the WA wheatbelt alone.

The problem of salinity has been caused by a number of factors – particularly land clearing, as well as irrigation and the effects of weirs and other water storages. The situation is predicted to get worse unless we revegetate cleared areas and change farming practices.

Tackling salinity requires a major coordinated effort on a national scale. It is also important that salinity not be tackled as a 'stand-alone' issue. We can achieve synergies between tackling salinity and protecting biodiversity and enhancing habitat, addressing other forms of soil degradation, and establishing timber plantations. Rural productivity will benefit from concerted action.

*Salinity is bigger than tax reform. You can always fix a broken policy, but you can't fix ruined food-bowl country.*

JOHN ANDERSON, DEPUTY PRIME MINISTER.<sup>89</sup>

*The costs associated with meeting these challenges [on salinity] are high, the costs of doing nothing are incalculable.*

DR TOM HATTON, CSIRO.<sup>90</sup>

*Dryland salinity resulting from over-clearing of native vegetation is one example where the environmental and economic consequences have been so catastrophic that I would hope we had learned our lesson.*

SENATOR ROBERT HILL, COMMONWEALTH MINISTER FOR THE ENVIRONMENT AND HERITAGE.<sup>91</sup>

ACF proposes:

- National leadership and commitment to addressing salinity by the Commonwealth government by:
  - implementing a national policy statement on salinity;
  - using cross-compliance funding powers; and
  - introducing national legislation on vegetation clearing in salinity prone regions, backed up with incentives and assistance to landholders.

- Governments agreeing to a nationally coordinated approach to addressing salinity by:
  - developing integrated strategies at the national, regional and property scale;
  - setting priorities and targets, such as salinity targets for rivers, and regional vegetation cover targets and strategies; and
  - undertaking institutional reforms to overcome the reluctance of states to cooperate in effective salinity management, particularly in the Murray-Darling Basin.
- Further research into ecosystems at risk and priority regions for action, including developing an effective mechanism for resolving trade-offs between tree establishment and the reduced surface water run-off that can sometimes result.
- An education campaign to raise community and landholder awareness of salinity and gain broad public support for taking action.
- A major national vegetation program including vegetation retention, revegetation, plantations and trees on farms.
- A salinity rural readjustment package to assist farmers out of non-viable agricultural enterprises in salinity-prone regions.
- Governments, farmers and the community encouraging long-term land use change, including land retirement and major changes in agricultural production systems including the shift from annual to deep-rooted perennial crops.
- Implementing measures to address salinity in the Murray-Darling system including:
  - tightening the cap on water extraction in the Murray-Darling Basin and formalising environmental flow regimes in all rivers; and
  - developing weir management strategies in parts of the Murray River.

## 12. GOING WITH THE FLOW (A NATIONAL RIVERS AND WATER PLAN)

Water is the basis of all life, and although Australia is a dry continent, we have allowed the quality of our rivers and waterways to decline dramatically.

Water is relatively scarce in Australia, and hence has become a highly valuable, but under-priced, commodity, especially in agriculture, an industry that accounts for over 70 per cent of Australia's water use.

Most river systems across southern and eastern Australia are seriously degraded. Water quality is increasingly affected by pollution from agricultural and other sources, and in many cases from the effects of rapidly increasing salinity problems on the land. The range and abundance of native fish, invertebrates (crustacea, insects, molluscs) and waterbirds are in serious decline. Wetlands, flood plains, billabongs, and aquatic and riverbank vegetation are similarly affected.

There are enormous challenges in turning the state of our rivers around, both in fixing up problems of the past, but also in ensuring that we have learnt lessons from these mistakes.

The diminishing health of our waterways is leading to a long-term decline in productivity. Australia will benefit economically and environmentally if we develop a comprehensively updated Rivers and Water Action Plan, building on the now-outdated COAG Water Resources Policy.

*Inland waters in southern Australia are in poor shape, largely because of poor management. Too much water is being taken from some systems,*

*and nutrient and salt levels are of concern. Algal blooms may be becoming a more serious problem. In northern Australia, there is still time to prevent deterioration.*

AUSTRALIA STATE OF THE ENVIRONMENT REPORT 1996.<sup>92</sup>

*The impacts of weirs and dams on our water quality and availability cannot be underestimated. Before European settlement an average of 14,300 gigalitres of water flowed to the mouth of the Murray. Today total diversions are around 11,000 gigalitres. The salt loads and toxic algal blooms are an indication that this situation is not sustainable.*

DR SHARMAN STONE, COMMONWEALTH PARLIAMENTARY SECRETARY FOR THE ENVIRONMENT AND HERITAGE.<sup>93</sup>

ACF proposes:

- Reducing water extraction in all stressed rivers and ensuring environmental flow regimes are put in place that can restore riverine ecosystem functioning.
- Establishing environmental flows in all other river systems.
- Accelerating and strengthening water reforms applying principles of user pays and removal of all water subsidies, including for new dams and weirs. A rigorous review of both river health and the performance by state jurisdictions in acting on existing environmental obligations under the COAG Water Resource Policy framework should be undertaken.

- Governments and water authorities reforming irrigation infrastructure policy and management so as to reduce the environmental impacts of dams and weirs.
- Developing a national comprehensive, adequate and representative (CAR) reserve system for rivers based on their natural heritage values.
- Protecting rivers in northern Australia from the mistakes of southern Australia.
- Conserving groundwater, including acceleration of bore capping programs in the Great Artesian Basin.
- The Commonwealth and states cooperating in developing river management strategies for all rivers, including flows, water quality, restoration of river frontage and floodplain vegetation, and habitat enhancement. This will also require monitoring outcomes and a review process for strategies.
- Governments and regional communities supporting initiatives to protect long-term catchment and estuarine health, including protection of river frontages from grazing, and re-establishment of riparian ecosystems.



Photographer: David Hancock

## 13. SAVING OUR SPECIES, RESCUING OUR RICHES (BIODIVERSITY CONSERVATION)

Australia has an enormous diversity of ecosystems and species. They have evolved in isolation from other continents, and therefore a high proportion of Australia's native plants and animals occur nowhere else.

Australia's temperate and coastal ecosystems in particular have been extensively altered since European settlement. Australia has lost and continues to lose much of its biological diversity. Protection of biodiversity is essential to the Australian economy through the retention of ecosystem services.

Ecosystem services in Australia have been valued by CSIRO at \$1327 billion per year.<sup>94</sup>

Threats to biodiversity include clearing, grazing, introduced species, climate change, urbanisation and pollution. Urgent and coordinated national action is required to control these threats. Regional planning and management should be undertaken across private and public land to achieve whole-of-landscape conservation, thereby allowing the integration of conservation and production systems.

*[Land clearing] is the single largest threat to biodiversity. The situation is deteriorating as the threatening activities continue.*

AUSTRALIA STATE OF THE ENVIRONMENT REPORT 1996.<sup>95</sup>

ACF proposes:

- Immediately ending the greatest threat to Australia's biodiversity, broadscale land clearing.
- Completing the national reserve system, and managing and resourcing existing reserves properly.
- Protecting and managing bushland and wildlife on both private and public lands through partnership arrangements between governments, landholders and conservation trusts.
- Managing the rangelands for biodiversity conservation.
- Fully funded recovery plans to protect threatened species.
- Encouraging private initiatives that assist the maintenance and recovery of species.
- Controlling weeds and feral animals through stringent controls on the introduction of new organisms, rigorous screening programs and research into the biological control of weeds and pests.
- Coordinating the national revegetation effort for salinity, catchment management, carbon credits and soil erosion to maximise biodiversity benefits.
- Improved information on biodiversity by developing monitoring systems to provide early warning of species in danger and undertaking comprehensive mapping of the conservation status of vegetation communities.

THE 1996 STATE OF THE ENVIRONMENT REPORT FOUND THAT THE LOSS OF BIODIVERSITY IS THE SINGLE MOST IMPORTANT ENVIRONMENTAL ISSUE FACING THE NATION.

- Restoration of ecosystems, as far as is possible, in key strategic areas.
- Regional conservation strategies.
- Strengthening the capacity of local government and other regional organisations to undertake biodiversity conservation programs.



Photographer: Phil Ingamells

## 14. SAVING OUR BUSH (FORESTS AND WOODLANDS PLAN)

Well over half of the forests and woodlands that existed at the time of European settlement have been cleared, and in some agricultural regions more than 95 percent of the native woodlands have gone. As well as causing significant loss of species of birds and animals, basic ecological services, such as healthy rivers and clean water, have been impaired and land degradation costs agricultural productivity in excess of \$2 billion per year.

Currently plantation-based timber industries are disadvantaged by unfair competition from subsidised native forest industries. The challenge ahead is to ensure that Australia's forests and woodlands are managed to ensure ecosystem protection and that industries based on them are restructured on a sustainable basis. The benefits are clean water, sustainable jobs and value-added regional development.

*Some types of forest are threatened with disappearance and we cannot be certain that others are adequately protected to ensure their survival.*

AUSTRALIA STATE OF THE ENVIRONMENT REPORT 1996.<sup>96</sup>

*It is not just ironic, but tragic, that the most divisive issues and the greatest lost opportunities all involve hanging on to old paradigms. These old paradigmatic issues include [...] maintaining dependence on high volume/low value exports in the timber industry, and discounting the impact of deforestation on soil, rivers and air quality.*

BARRY JONES, IMMEDIATE PAST PRESIDENT, ALP.<sup>97</sup>

ACF proposes:

- Strict land clearing control legislation in all states and territories as well as at the Commonwealth level.
- A forest industry restructuring package containing:
  - an accelerated transition towards ecologically sustainable farm forestry and mixed species plantation production of timber;
  - the removal of inappropriate subsidies and perverse incentives for native forest and woodland logging;
  - an ecologically sustainable government and industry wood and paper purchasing policy;
  - codes and accreditation procedures for sustainable plantation production; and
  - a forest industry structural adjustment package to manage industry readjustment and social change.
- Forest and woodland ecosystems and species protection through:
  - education and incentives to protect woodlands on private land;
  - a secure and adequate national forests and woodlands reserve system; and
  - recovery plans for threatened species in forests and woodlands.
- An education campaign to raise landholder and consumer awareness of the values of forests and woodlands.

THE REGIONAL FOREST AGREEMENT (RFA) PROCESS HAS FAILED TO PROVIDE ECOLOGICAL OR ECONOMIC SECURITY. WITHIN A YEAR OF TASMANIA HAVING SIGNED ITS RFA, OVER 310 OF ITS WORKERS, OR 10 PERCENT OF THE INDUSTRY, HAD BEEN RETRENCHED DUE TO CORPORATE COST SHEDDING.<sup>98</sup>



Photographer: David Hancock



## 15. LOOKING AFTER NATURE'S JEWELS (WORLD HERITAGE, NATIONAL PARKS AND NATIONAL ESTATE)

Although some of Australia's greatest natural treasures are protected in national parks and world heritage areas, our land and marine reserve systems are incomplete in terms of conserving the full range of ecosystems and species.

Protected areas are the most cost-effective solution to the problem of biodiversity maintenance.<sup>99</sup> Biodiversity and intact ecosystems provide a range of ecosystem services: catchment protection, water production, soil stability, climatic controls, carbon sinks, genetic resources, pollination of agricultural species, habitat for pest insect-eating birds, and hatcheries for commercial fisheries.<sup>100</sup>

We need to complete the National Reserve System (Australia's system of land-based protected areas) and to greatly expand Australia's system of marine reserves, which compared with its terrestrial counterpart, is in its infancy. Adequate funding to properly manage existing reserves is also required.

With increasing pressures for user pays and for parks to generate their own income, there are risks that the core values of protected areas, nature conservation, will be lost to commercial and user pressures. The challenge is to provide a high quality visitor experience yet maintain the primary function of nature conservation.

A properly managed reserve system offers a sustainable source of income in regional Australia. The Great Barrier Reef alone contributes nearly \$1 billion, of which over \$600 million is from tourism, directly to the economy per year.<sup>101</sup>

*Many places remain unprotected for a number of reasons: their heritage values are not recognised; the community is not involved; [...] or resources to identify and conserve places are inadequate. Tourism has significant effects - both positive and negative - on many natural and cultural places. It can lead to better management, renewed cultural activity and increased understanding, but it can also result in pollution, vandalism and cultural exploitation and debasement.*

AUSTRALIA STATE OF THE ENVIRONMENT REPORT 1996.<sup>102</sup>

ACF proposes:

- Increased efforts to develop a comprehensive, adequate and representative (CAR) terrestrial reserve system by:
  - increasing Commonwealth funding for the CAR system;
  - increasing funding core for the restoration and management of the existing reserve system; and
  - agreeing to rigorous and transparent cost sharing arrangements for the management of the reserve system.
- Additional marine protected areas with adequate 'no take' or strict protection zones.

- Governments and industry resisting commercial pressures in national parks and other protected areas by:
  - establishing buffer zones outside of reserves where appropriate developments can take place;
  - rejecting 'multiple use' of protected areas; and
  - supporting greater control of tourism in national parks.
- Governments and the community ensuring world heritage areas are managed to protect and pass on their world heritage values.
- Assessing additional sites for potential world heritage listing.
- Support for private protected areas.
- Increased government support for Indigenous management programs such as the Indigenous Protected Areas program.

## 16. SAVING OUR SEAS

### (A PLAN FOR COASTS, OCEANS AND SUSTAINABLE FISHERIES)

Australia manages over 16 million square kilometres of marine area, an area larger than our continental landmass.

The sea has shaped our national character. Modern Australia is highly urbanised with virtually all our major urban centres located on the coast. Our self-image as a people is linked with the sea; most Australians have fond memories of summer days at the beach or going out fishing.

However, our coastal areas, oceans and fisheries are under enormous pressure, with many of the impacts going largely unnoticed, hidden below the surface of the water. There are major challenges for Australia in maintaining and improving the quality of our coastal and marine systems.

Protecting our coastal and marine areas is an economic insurance policy. Together they contribute a disproportionately high degree of ecosystem services (estimated globally at 63 percent, possibly higher for Australia).<sup>103</sup>

*On the whole, our marine and estuarine environments are in good condition. In areas of high population density or intense human activity, however, they are often degraded as a result of urban, agricultural and industrial development and tourist and recreational activities.*

AUSTRALIA STATE OF THE ENVIRONMENT REPORT 1996.<sup>104</sup>

ACF proposes:

- Oceans legislation to provide a framework for the Oceans Policy and upgrading the National Oceans Office to a statutory National Oceans Commission with powers to implement integrated regional ocean ecosystem management.
- A Marine Mammals Protection Act that can be used to mitigate the threats to all marine mammals (whales, dolphins, porpoise, seals, sea-lions and dugongs).
- A series of programs and measures to provide further protection of marine and coastal ecosystems including:
  - completion of Critical Habitat Assessments and Management Plans for all threatened marine and coastal species;
  - prevention by state and local governments of any further clearing of coastal vegetation communities including seagrass and wetlands;
  - increased funding for the control of introduced marine pests;
  - a coastal and marine pollution prevention program;
  - risk assessment of the petroleum industry to coastal and marine ecosystems;
  - cessation of military bombing of sensitive coastal targets; and
  - increased research into and action on the impacts of climate change on the marine and coastal environment.

- A properly resourced Integrated National Coastal Policy to operate either as part of or in close association with the Oceans Policy.
- Formal recognition by governments to Indigenous marine native title and rights to control access and exploitation of marine resources in an ecologically sustainable manner.
- An independent Commonwealth inquiry into sustainable fisheries management.
- Reviewing fisheries access and property rights based on the principles of environmental protection, community involvement in fisheries management and marine native title.
- National standards for ecologically sustainable aquaculture.
- A national program of education and awareness of the coastal and marine environment.
- Integrated sustainable coastal plans.
- A coordinated approach to improving the management of the environmental risks posed by domestic and international marine shipping and transport.



## 17. GENETIC JEOPARDY (GENETIC ENGINEERING)

Genetic engineering technologies may be used to alter the basic structures of living organisms by transferring genes between unrelated life forms. A growing legion of doctors, nutritionists, scientists and food buyers have expressed concern about genetic engineering of food both in Australia and overseas, especially in Europe and Asia.<sup>105</sup>

The health issues focus on the possibility that genetically modified food may impair the effectiveness of antibiotics, it may be less nutritious, it may create allergens, toxins and new viruses; and it may contain more herbicide residues because most genetically engineered crops are altered to withstand more of these chemicals.

Environmental concerns include fears that gene transfers may occur between species in ways that override our current evolutionary safeguards so that, for example, a new pathogen may jump the species barrier. Herbicide-resistant genes may escape into weeds creating herbicide-tolerant 'superweeds'.

Economic concerns include limited food ownership – world food production could eventually be controlled by about five multinational agrochemical companies, which hold patents and seeds for genetically engineered food, and sell the chemicals needed to grow this food.

Ethical questions include 'patenting' life, manipulating plant, animal and human genes for commercial gain and 'right-to-know' labelling.

There is no evidence that genetic engineering can deliver healthier, more plentiful and more sustainable food production. Genetically engineered crops currently yield less than conventional crops. Other claimed benefits, such as feeding the world, are a myth. There is currently a 50 percent global food surplus but the politics and economics of distribution lead to food shortages and hunger.

The uncertainties and considerable risks of genetic engineering and its products justify tight precautionary controls on its use. The onus of proof for health and safety needs to rest with industry proponents.

*Australia stands to gain a premium on agricultural exports if we can guarantee they are GM free.*

DOUG SHEARS, EXECUTIVE CHAIRMAN, ICM AUSTRALIA.<sup>106</sup>

*Without labelling it will be very difficult for scientists to trace the source of new illnesses caused by genetically engineered food.*

DR JOHN FAGAN, MICROBIOLOGIST AND CANCER RESEARCHER.<sup>107</sup>

*[With genetic engineering] technical ability has evolved faster than social institutions; skill has outrun wisdom.*

AMORY LOVINS & HUNTER LOVINS, ROCKY MOUNTAIN INSTITUTE.<sup>108</sup>

ACF proposes:

- A five-year freeze on any release of genetically engineered organisms into the environment or food.
- New precautionary national laws and the Office of Gene Technology Regulator to control all genetic engineering activities, to prevent patenting of genetically modified organisms, and to prohibit all genetic engineering for the production, stockpiling or use of biological warfare agents.
- Mandatory labelling of all foods, processing aids, food additives and prepared foods produced using gene technology.
- Australia becoming a party to the Biosafety Protocol for the safe international transfer and use of genetically engineered organisms.
- A marketing strategy for Australian GMO-free produce.
- Public education and awareness programs on gene technology that facilitates all points of view being heard.
- Maintaining the freeze on genetic engineering until it can be proven conclusively that genetic engineering can be used in ways that are socially, ecologically, economically and ethically benign, with the onus of proof on the proponents.
- A long-term monitoring and assessment program to monitor the impact on native species and ecosystems of any GMOs that are released if a permanent freeze is not maintained.



## 18. REGIONAL FUTURES (SUSTAINABILITY IN OUR REGIONS)

The growing divide between the different types of regions in Australia is increasingly in the political spotlight. Many economic indicators point to the fact that Australia is experiencing an economic boom, but the benefits are concentrated in just a few areas, generally the central areas of our biggest cities.

Those regions that tap into the global economy are booming, while those regions based on traditional rural and industrial enterprises tend to be falling behind. The discontent in regions that are getting left behind expressed itself most dramatically with the rise of the One Nation Party, highlighting the political volatility of the rural and regional electorate.

A new agenda to support regional development is required. While the focus has tended to be on the social and economic aspects of the regional divide, a truly sustainable long term future for all regions must be underpinned by a healthy environment as Oregon recognised in its economic development strategy. Indeed environmental action in the regions can build social and economic sustainability.

It is essential for Australia to develop regional sustainability plans, recognising that the needs of different regions will vary greatly.

*We Australians enjoy tremendous natural advantages. Our country is among the most beautiful and resource rich on the globe. Currently, we're experiencing sustained economic growth. Yet the divisions among us – between the haves and the have nots and even the city and the country – give cause*

*for concern.*

SIR WILLIAM DEANE, GOVERNOR GENERAL .<sup>109</sup>

*The economic benefits of sustained economic recovery over the nineties were unevenly distributed across Australia. The winners are the global centres of Sydney and Melbourne, and a small group of resource based regions in northern Australia. The losers are rural regions based on traditional agricultural and industrial areas.*

NATIONAL ECONOMICS.<sup>110</sup>

*In the late 1980s, the [Oregon] state economy faced serious economic, social and environmental challenges associated with declining opportunities for traditional industries, regional inequalities, high unemployment, poverty and environmental degradation of forests and water systems. [...] To address the crisis, the Oregon State government, business and community leaders initiated [...] a 20-year economic development strategy that set out clear goals and actions... Major achievements include the highest education outcomes in the US, export growth at twice the national average, better environmental outcomes and high employment growth in knowledge-based industries.*

NATIONAL ECONOMICS.<sup>111</sup>

ACF proposes:

- Regional Sustainability Taskforces, involving local government, business and community groups, to develop regional strategies for sustainability.
- Commonwealth government funding, on a cost-sharing basis, for implementation of integrated regional packages for sustainability to meet the objectives of accredited regional strategies. Packages could comprise regional training programs, regional planning, rural readjustment, regional employment programs and environment and resource management funding.
- Commonwealth government for regional information technology and training hubs.
- Maintaining or improving regional environmental standards.
- Commonwealth, state and local governments support for local learning centres.
- Regional development promotion through technology and information transfer.
- Industry and government support for the development of regional industry clusters.



Photographer: David Hancock



## 19. LOOKING AFTER COUNTRY (INDIGENOUS LAND MANAGEMENT)

The land and waters of Australia have sustained and nurtured Indigenous peoples for tens of thousands of years.<sup>112</sup> This long occupation has resulted in a profound cultural and spiritual relationship between Indigenous people and their country and a continuing desire to manage Australia's lands and waters.

Although Indigenous people in Australia have been dispossessed of much of their land, there has been growing legal recognition of Indigenous prior occupation and continuing ownership of land.

This increased legal recognition has provided Indigenous people with greater opportunities to become involved in land management and biodiversity conservation. Currently, Indigenous people manage approximately one-fifth of the continent and have strong native title rights over nearly two-thirds of the land.

In the spirit of reconciliation, Indigenous and non-Indigenous Australian communities must now share in the task of land management and restoration. This requires that all Australians recognise the legitimate role that Indigenous people can play in the management of Australia's natural and cultural resources and to recognise the importance of Indigenous peoples' knowledge of the Australian environment. We need to use both Indigenous and western scientific knowledge systems in land and water management. We all benefit from the stewardship of Indigenous land management through maintenance of intact ecosystems.

Additional benefits arise from Indigenous ecological knowledge of the pharmaceutical and food properties of native plants and animals.<sup>113</sup>

Australia needs a comprehensive plan for Indigenous land management that is developed in a genuine partnership with Indigenous people.

*There will be no reconciliation unless a general consensus is reached about the minimum that must be done and set in train to redress past oppression and injustice. In turn, the necessity of compromise on both sides will not be accepted unless there is a general and genuine recognition of the fact that national reconciliation is of vital importance to national pride, true national unity and national reputation.*

SIR WILLIAM DEANE, GOVERNOR GENERAL.<sup>114</sup>

*Indigenous knowledge has not been, in all cases, superseded by western conservationist knowledge, nor is it a subset of the latter. It brings different and applicable views of the world to the task of conserving biodiversity. Indigenous knowledge exists wherever there are living Aboriginal customary systems, and wherever this is the case, Aboriginal and western systems of knowledge are parallel, co-existing, but different, ways of knowing.*

PROFESSOR MARCIA LANGTON, FOUNDATION PROFESSOR OF AUSTRALIAN INDIGENOUS STUDIES, UNIVERSITY OF MELBOURNE.<sup>115</sup>

ACF proposes:

- Expanding the scope of Native Title rights and pursuing the benefits of negotiation rather than litigation.
- Increasing support for the Indigenous Protected Area program and for land acquisition programs.
- Governments and Indigenous communities continuing to develop and explore joint management of national parks and other protected areas.
- The development of regional agreements and other indigenous land use agreements provided that Indigenous people initiate the agreements.
- Resources for culturally appropriate training and employment opportunities for Indigenous people in land management.
- Legislative protection for Indigenous intellectual property rights.
- Reconciliation on land and water management between Indigenous and non-indigenous Australians.
- Governments supporting Indigenous people's self-determination.
- Governments and the non-Indigenous community providing greater recognition of Indigenous people's role in land ownership and management.
- Governments and industry providing stewardship payments for environmental services provided by Indigenous people.



Photographer: David Hancock

## 20. GREEN JOBS (ENVIRONMENTAL EMPLOYMENT)

How often do we see governments and industry shying away from environmental protection because of fears that it will cost jobs? Yet jobs and the environment go hand in hand.

Environmental employment is one of the fastest growing labour market segments worldwide. Millions of jobs are being created directly in new, clean and green industries. Millions more are being created through savings made as industries reduce their waste and pollution. If Australia is to capture its share of this market then it is essential that governments vigorously pursue a range of policies that promote employment and environmental protection in tandem. This means comprehensive environmental industry and regional development strategies and environmental tax reform, as well as labour market and training programs that specifically target environmental employment opportunities.

Australia can have jobs *and* the environment.

*[Environmental management is likely to be] a huge industry worldwide by 2010, [presenting] significant opportunities for Australia.*

AUSTRALIAN SCIENCE, TECHNOLOGY AND  
ENGINEERING COUNCIL.<sup>116</sup>

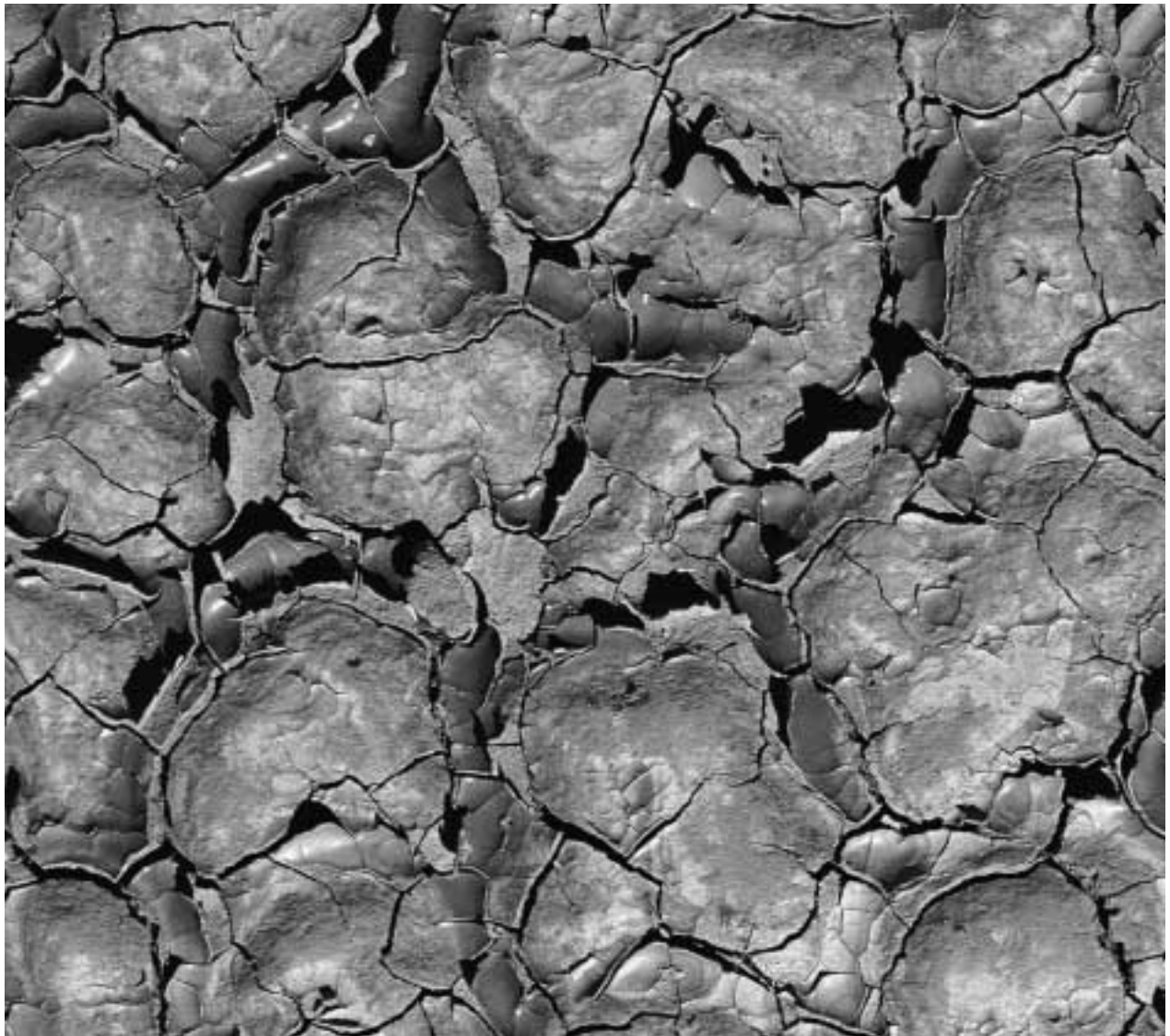
*Within the European Union [the environment] industry [in 1994] already supplied 90 billion ECU of goods and services per year, provided direct employment for over 1 million people, generated indirect employment for at least 1.5 million people and stimulated 36 billion ECU investment funds each year. Despite these figures the EU recognised that the environment industry as a source of socio-economic and employment growth was, as yet, largely untapped.*

GREEN JOBS UNIT.<sup>117</sup>

ACF proposes:

- Reinforcing labour market programs and coordinating them with sustainable industry and regional development strategies.
- A 'green jobs in industry' integration fund.
- A new environmental traineeship program to focus on the major environmental management and protection growth areas.

IF AUSTRALIA COULD CAPTURE JUST 2 PER CENT OF THE WORLD POLLUTION CONTROL MARKET 150,000 JOBS AND \$8 BILLION IN BUSINESS WOULD BE GENERATED.<sup>118</sup>



## 21. CLEAN AND GREEN INDUSTRY (ENVIRONMENTAL MODERNISATION OF AUSTRALIAN INDUSTRY)

Over the past twenty years some Australian companies have made commendable efforts to reduce their pollution and waste. Overall however, improvements have been patchy. Dirty and polluting companies remain and in most cases Australian industries are still behind world's best practice for environmental protection. The Australian economy continues to rely far too heavily on the 'dig it up, rip it down and ship it out' industries.

Sustainable energy in NSW had direct jobs growth of 9 percent per annum in 1996-98 and growth of 19 percent was expected in 1999-2000. Other (unsustainable) energy industries had substantial job losses in the 1990s.<sup>119</sup>

If Australia is truly to become a clever country then industrial activity in Australia must be transformed. This means taking on world leadership of clean and green industry - Australian manufacturers need to aim for zero wastes and emissions, and dirty and polluting industries will have to be transformed into environmentally-friendly ones. To achieve this transformation will require sustained efforts from governments and industry. Governments must play an active role in promoting the development of green industries such as solar energy, waste reduction and pollution control technologies and sustainable agriculture. Specific programs and incentives are needed to encourage industry to adopt clean and green practices.

These changes need to be seen as part of the emerging movement towards dematerialised economies, economies that use dramatically fewer materials and fossil fuels to provide the services needed for their populations. Researchers now agree that only dramatic reductions in material and fossil energy use will suffice to stabilise adverse environmental trends such as climate change. These changes have profound implications for the future development of Australia's economy.

Australia's continued reliance on low and diminishing value resource industries means environmental modernisation - the cleaning and greening of existing operations and the developing of new and emerging green technologies and industries - is not just an environmental imperative but a long-term economic necessity.

*New technologies and management practices are showing we can protect the environment and create jobs. [...] This revolution is led by companies and countries that treat the environment as a mainstream economic concern, not a regulatory afterthought. These leaders recognise that smart environmental policies can drive innovation, lowering business costs and providing a competitive advantage. Australia is well placed to be a world leader in this economic and environmental race. Our technologies and industrial innovation, geography and strong environmental awareness all provide key advantages.*

BOB CARR, PREMIER OF NSW.<sup>120</sup>

IN THE UNITED STATES REMANUFACTURING (REUSING WASTE MATERIALS) IS A US \$53 BILLION A YEAR INDUSTRY EMPLOYING 480,000 PEOPLE DIRECTLY. WIND POWER SUPPLIES 10 PER CENT OF DANISH ELECTRICITY AND WIND TURBINES ARE DENMARK'S FOURTH LARGEST EXPORT WORTH US \$1 BILLION A YEAR AND EMPLOYING 12,000 PEOPLE.<sup>121</sup>

*...it is no longer necessary to choose between growing the economy and preserving, and even improving, the environment. But it is necessary to abandon the Industrial Age energy use patterns... there are presently available technologies, and those just on the horizon, which will permit us to get richer by cleaning, not by spoiling, the environment.*

US PRESIDENT BILL CLINTON.<sup>122</sup>

*Clearly, environmental issues are going to be a big driver in getting business to improve their efficiency. [...] Companies that are more eco-efficient will gain market share from those that aren't.*

BJORN STIGSON, PRESIDENT, WORLD BUSINESS COUNCIL FOR SUSTAINABLE DEVELOPMENT.<sup>123</sup>

ACF proposes:

- A Sustainable Industry and Regional Development Commission to provide advice on industry and development policy.
- A Sustainable Industry Council to develop and facilitate implementation of sustainable industry plans – for both ‘cleaning and greening’ existing industries and promoting new and emerging environmental industries.
- Improved government and industry research and development.

- Extending the National Pollutant Inventory so that it meets international best practice for the tracking of industrial pollutants.
- Incentives for more environmentally sustainable commercial buildings.
- A zero waste challenge program to reduce pollution and waste from industry to substantially below licensed and regulated levels.
- Product stewardship responsibility initiatives including ‘take-back’ legislation that obliges manufacturers and/or retailers to accept back used products or packaging.

In the early 1990s Germany introduced legislation holding producers responsible for most of the packaging waste they generate. Since then the use of packaging by producers has been cut by 17 percent and recycling of the remaining packaging has increased to 80 percent.<sup>124</sup>

## 22. LIVABLE CITIES

### (SUSTAINABLE URBAN AND TRANSPORT PLANNING)

Australians' attachment to 'the bush' is a strong component of Anglo-Australian mythology. We like to identify with the bush and with the men and women who have been part of it. In reality, over the past century Australians, for the most part, have become city dwellers. Our day to day experiences are not so much of "...sweeping plains, ragged mountain ranges and... jewel seas" <sup>125</sup> but of congested roads, urban sprawl, polluted air and contaminated land and waterways. The health, social and environmental costs are extensive, including air pollution and noise, congestion, car accidents and social alienation. But our ever-growing cities can be greatly improved.

Vancouver does not have an urban freeway and has had few road capacity increases in the last 30 years. Instead it has built an extensive light rail service and developed dense urban villages around its stations where people do not need a car. Toronto has been undertaking public transport orientated developments for decades and has an efficient public transport with frequent and well-integrated services. City parking has been made scarce and expensive. Both cities have increased urban density and have low urban sprawl compared to similar, non-transit focused cities.

In the 1970s plans for a new expressway in Portland were dumped in favour of a light rail system. Through creating a less car dependent city downtown jobs have increase 50 percent with no increase in car commuting. <sup>126</sup>

A key to making our cities more livable in the future will be the development of sustainable transport systems. The Australian love affair with their cars is an 'urban myth'. While it is true that Australians rely on their cars more than other nationalities, with the exception of Americans, this dependency is often born more of necessity than desire. By providing accessible, affordable and safe public transport, bicycle networks, and well-connected and people-friendly urban centres, governments, developers and transport providers can hope to reduce our car dependency. Reducing car dependency can, in turn, be the first part of a comprehensive livable cities program that encompasses urban renewal, affordable housing, urban bush and parkland protection and clean air and waterways.

*The big cities are generally more efficient in their metabolic flows than smaller cities and country towns. The large cities also tend to enjoy better livability. This suggests there is little to be gained environmentally by dispersing urban populations into other areas, especially the non-urban coastal zones, which are growing rapidly. Much can be done to reduce metabolic flows while further improving livability within cities. On the other hand, the large cities, notably Sydney, are experiencing 'capacity' problems associated with photochemical smog, stormwater and waste water that demand changes if the cities are to continue to grow. Global constraints must also be faced, especially those arising from the greenhouse effect. Within the large cities, the more compact core and inner areas*



*consume fewer resources and produce less waste per head than outer and fringe areas, although there are some pressures on their infrastructure. Livability levels are similar across each large city, except the urban fringe, which suffers poorer social amenity (access to public transport, and health, educational, sporting and recreational facilities etc).*

AUSTRALIA STATE OF THE ENVIRONMENT REPORT 1996.<sup>127</sup>

ACF proposes:

- That the allocation of Commonwealth transport funds to the states be reassessed and funding made contingent on the development of integrated transport strategies.
- A federal fund for service improvements to improve public transport patronage.
- Employer provided, tax-exempt public transport passes to promote public transport use.
- Re-invigorating the National Bicycle Strategy.
- A new, national sustainable and livable cities program encompassing urban renewal, accessible and affordable public transport and housing, clean air and waterways, energy efficiency and urban bush and parkland protection.
- Increased funding for public transport infrastructure improvements and extensions.
- Improved logistics of freight handling.
- An upgraded rail link between Sydney and Melbourne instead of a new Sydney airport.



## 23. PROTECTING OUR CLIMATE (A GREENHOUSE ACTION PLAN)

As Australians we pride ourselves on having the best climate in the world. It's a climate that can support a healthy and relaxed lifestyle. It also supports our unique and diverse plants and wildlife. Much of our economy – agriculture, fisheries and tourism in particular – depends on the climate we enjoy.

Scientists now agree that the release of greenhouse gas emissions into the atmosphere, due to land clearing and the burning of coal, oil and gas, is threatening to change our climate, raise sea levels and to harm life on earth.<sup>128</sup>

The good news is that there is enormous potential in Australia for reducing our greenhouse gas pollution. A comprehensive and well-managed plan of action by governments, industry and the broader community can reduce Australia's greenhouse gas pollution significantly below 1990 levels by 2010, contributing to international efforts to protect the global climate. Along the way we can strengthen our economy, create new jobs and enhance our quality of life. The plan of action will focus on using our energy more wisely and shifting away from greenhouse polluting fuels to clean and unlimited renewable energy sources such as solar and wind.

The plan can transform Australia's energy sector by 2050 to one that relies principally upon the efficient use of renewable energy. A 'Factor 4'<sup>129</sup> revolution – that is using half the resources to achieve twice the productivity – will also see enormous improvements in energy efficiency, contributing to annual energy cost savings of billions of dollars.

*I think there is a general acknowledgment that Australia got away easily at Kyoto, but I warn that the Kyoto agreement does not last forever. Australian business must heed our message, which is that good environment policy makes good business sense.*

BJORN STIGSON, PRESIDENT, WORLD BUSINESS COUNCIL FOR SUSTAINABLE DEVELOPMENT.<sup>130</sup>

*A huge reduction [in greenhouse gas emissions] has to happen [in Australia] and it's still not clear how it's going to be made.*

GREG BOURNE, REGIONAL PRESIDENT, BP AUSTRALIA & NZ.<sup>131</sup>

*The [aluminium] industry is in favour of the concept of emissions trading. It, at least in economic theory, should be a mechanism to deliver abatement in the areas of highest energy cost and thus highest abatement benefit.*

DAVID COUTTS, DIRECTOR, AUSTRALIAN ALUMINIUM COUNCIL.<sup>132</sup>

*The Australian Gas Association believes that emissions trading is the best mechanism through which the market can discover the lowest marginal cost options for abatement. While structural and administrative changes to the energy market may also help natural gas and other low emitting fuels challenge the dominance of coal as a primary energy source, the most direct opportunity will come through the market establishing a cost for greenhouse gas emissions.*

AUSTRALIAN GAS ASSOCIATION.<sup>133</sup>

UP TO 320,000 NEW JOBS IN WIND ENERGY, 294,000 NEW JOBS IN PHOTOVOLTAICS AND 250,000 NEW JOBS IN SOLAR THERMAL ARE ANTICIPATED IN THE EUROPEAN UNION BY 2010. MORE THAN 350,000 NEW RENEWABLE ENERGY JOBS ARE ANTICIPATED IN THE USA BY 2010.<sup>134</sup>

*If we set as a goal for Australia that by 2010 we were at the OECD average for end-use efficiency we would reduce the growth of electricity demand by something like 30,000 gigawatt hours. We would reduce the amount of greenhouse gases by between 20 and 30 million tonnes.*

KEITH ORCHISON, MANAGING DIRECTOR, ELECTRICITY SUPPLY ASSOCIATION OF AUSTRALIA.<sup>135</sup>

*It is a serious mistake for Australia when Government does not insist that the cost of greenhouse gas emissions are factored into current power decisions. The Government must be careful not to make grandfathering [giving away permits] provisions, and in doing so give protection to the highest CO<sub>2</sub> emitters, so perpetuating higher CO<sub>2</sub> emissions.*

AUSTRALIAN GAS ASSOCIATION.<sup>136</sup>

*We believe businesses should immediately face the cost of greenhouse emissions on a 'pay-as-you-go' basis, with industry adjustment to the scheme facilitated via lower business taxes. Allocating permits on the basis of past emission levels by individual companies rewards large emitters and provides no incentive for business to act now. To encourage an industry commitment to reducing greenhouse emissions, we see the implementation of a credit scheme for early action very much interlinked with an auction system for the allocation of emissions permits.*

PAUL ANDERSON, MANAGING DIRECTOR, BHP.<sup>137</sup>

*It is not just ironic, but tragic, that the most divisive issues and the greatest lost opportunities all involve hanging on to old paradigms. These old paradigmatic issues include [...] maintaining coal as Australia's largest single primary export and working against international agreement on setting global greenhouse targets.*

BARRY JONES, IMMEDIATE PAST PRESIDENT, ALP.<sup>138</sup>

ACF proposes:

- Ratifying the Kyoto Protocol plus enabling legislation to give force to the Protocol.
- A challenging but achievable renewable energy target.
- National electricity market reform aimed at environmental outcomes.
- A program of measures to drive national energy efficiency.
- A vehicle fuel efficiency improvement program.
- Ending broad-scale land clearing.
- GST exemptions for renewable energy equipment, best-practice energy efficiency technologies, public transport charges and renewable energy.
- A more challenging national reduction target.
- A comprehensive national greenhouse gas emissions trading scheme and/or a carbon tax as part of the process of environmental tax reform.
- Regional assessment of mitigation opportunities.

## 24. BREATHING EASY (REDUCING AIR POLLUTION)

For Australians living in our cities breathing can come at a price. Pneumonia, loss of lung function, asthma, other respiratory problems, heart disease and lung cancer are some of the health risks associated with urban air pollution. Although the air quality in Australian cities improved between the 1980s and mid 1990s, urban air pollution remains at unacceptably high levels. Furthermore, air quality is set to deteriorate again unless new measures are found to combat the extra 50,000 to 200,000 motor vehicles that are being added to our roads each year.

Air pollution regularly ranks as the number one environment issue of concern to Australians in Australian Bureau of Statistics surveys.

In recent years Commonwealth and state governments have made some effort to address urban air pollution. For the first time, national air quality guidelines have been developed and new vehicle emission standards are to be introduced in the future. However, both the guidelines and standards are considerably weaker than world's best practice and government measures, such as the 1999 decision to reduce diesel excise, will actually worsen the problem.

Considerable effort is required of Commonwealth and state governments to ensure that air quality continues to improve. A commitment is needed by governments to bring Australian air quality and emissions standards into line with the best in the world. Only then can Australians start to breathe easy.

*Medical evidence is mounting on the dangers of fine particles in diesel exhaust. I am particularly concerned by the evidence that these fine particles may lead to the premature deaths of 1000 Australians every year. My medical colleagues have linked these fine particles to increased risk of lung cancer and a variety of respiratory disorders.*

DR DAVID BRAND, IMMEDIATE PAST PRESIDENT,  
AUSTRALIAN MEDICAL ASSOCIATION.<sup>139</sup>

ACF proposes:

- That national ambient air quality standards be extended to include very fine particles (PM2.5) and benzene plus strengthened compliance mechanisms.
- A national ambient air quality monitoring network to cover each capital city and major regional industrial centres.
- A national vehicle emissions testing program.
- That new vehicle emission standards be expedited and strengthened.
- New fuel standards for sulphur and benzene contents.
- Measures to reduce emissions from domestic wood heaters.
- A range of indoor air quality education, product labelling and building design initiatives.

FINE PARTICLE POLLUTION COMING FROM A RANGE OF SOURCES INCLUDING MOTOR VEHICLES AND WOOD HEATERS IS ESTIMATED TO CONTRIBUTE TO ALMOST 400 PREMATURE DEATHS EACH YEAR IN SYDNEY ALONE. THE HEALTH COSTS ASSOCIATED WITH FINE PARTICLES IN ALL OF AUSTRALIA IS AT LEAST \$3.7 BILLION EACH YEAR.<sup>140</sup>



## 25. NUCLEAR, NO THANKS (A NUCLEAR FREE AUSTRALIA)

The nuclear fuel cycle involves production of the most dangerous weapons, the most dangerous energy supply and the most dangerous wastes known to humans. There is a push on in Australia for more uranium mines, a new nuclear reactor and national and international radioactive waste dumps. This is Australia acting as the repository of a dying industry.

Nuclear power is dying from an attack of market forces.<sup>141</sup> Global uranium supply will continue to exceed demand. Nuclear energy cannot compete with cheaper and newer forms of energy such as combined cycle gas turbines. Nuclear power is the most expensive way to replace the climatic risks of fossil fuel burning. The problems of nuclear waste remain unsolved and subject to intense community concern such as in South Australia. Nuclear facilities are subject to massive cost blow-outs as is already anticipated for the new Lucas Heights reactor.

The anti-nuclear aspirations of the community need to be heeded. There is no economically or environmentally rational reason to expand Australia's participation in the nuclear industry. Nuclear waste dumps need to be prohibited and environmentally friendly alternatives to the technologies and products of the Lucas Heights reactor need to be encouraged.

*[Nuclear fission] is a fit technology for a wise, far-seeing and incorruptible people.*

ROBERT SINSHEIMER, NOBEL LAUREATE.<sup>142</sup>

*It is not just ironic, but tragic, that the most divisive issues and the greatest lost opportunities all involve hanging on to old paradigms. These old paradigmatic issues include [...] promoting uranium despite declining world demand, even when (as at Jabiluka) it threatens world heritage listing, with negative implications for eco-tourism.*

BARRY JONES, IMMEDIATE PAST PRESIDENT, ALP.<sup>143</sup>

ACF proposes:

- That all government and opposition parties commit to preventing new uranium mines in Australia including those already in the development phase.
- Comprehensive national nuclear waste legislation prohibiting any waste dump and requiring appropriate on-site storage.
- That the Commonwealth government reject the proposed new research reactor at Lucas Heights and instead increase funding for the development and production of medical alternatives to Lucas Heights' products.
- Negotiating a charter of rights for Aboriginal traditional owners that allows for a veto on nuclear activities on their land.
- That enhanced management, decommissioning and rehabilitation plans for existing mine sites be produced, adequately funded and implemented.



# APPENDICES



## APPENDIX 1

### THE COST OF INACTION

Australia is not yet an environmentally sustainable society and will not become one unless fundamental changes are made.

Australians, uniquely, are custodians of an entire continent.

Australia is a mega-diverse country. It is one of only twelve that hold a disproportionately large amount (together about 75 percent) of the earth's plants, animals and ecosystems. And it is the only one of the twelve that is a developed country.

But Australia is a leader in the loss of bio-diversity. More mammal species have become extinct in Australia than in any other country in the last 200 years.<sup>144</sup>

The 18 introduced mammal species now make up 10 percent of all of Australia's terrestrial mammal fauna.<sup>145</sup>

Australia fares little better in preserving its diverse ecosystems. Of Australia's 80 land-based bioregions 56 are substantially altered and 16 are almost totally modified.<sup>146</sup>

Clearing of native vegetation, draining of wetlands, and modification of grasslands continue at rates that disregard the extent of the current problem and the exacerbation they will cause. Australia has the highest vegetation clearance rate in the developed world and is only exceeded by four other countries on earth.<sup>147</sup>

Biodiversity is a major foundation of the economy providing ecosystem services such as clean water and natural pest controls the value of which only becomes apparent when artificial substitutes, if available, for example water purification or chemical pesticides,

are required. The value of pollination services provided by insects and birds is estimated to be alone worth more than \$1 billion per year to Australian agriculture.<sup>148</sup> The estimated total worldwide value of ecosystem services is US\$33 trillion per year. This exceeds the global gross national product of US\$18 trillion per year.<sup>149</sup> Ecosystem services in Australia have been valued by CSIRO at \$1327 billion per year.<sup>150</sup>

Australia has the worst land degradation, in terms of percentage of arable land affected, in the developed world.<sup>151</sup> Land degradation, in the form of soil structure decline, soil acidification, salinity, soil and water erosion, soil nutrient decline and soil contamination, leads not just to a loss of ecological integrity, but to a loss of agricultural productivity and destruction of assets such as roads, buildings and pipelines. While some aspects of land degradation, for example erosion, are improving due to better land management practices, others, such as salinity, are only just beginning.

In 1996 two and half million hectares were affected by salinity. If measures are not taken, that figure will grow to over fifteen and a half million hectares, an area equivalent to over two thirds of Victoria.<sup>152</sup>

Many of Australia's inland waters, as well as some coastal waters are also in poor condition. The Murray-Darling river system, which is the artery of Australia's agriculture, is one of the worst, with flow sometimes not sufficient to reach the sea because



IN 1999 AUSTRALIA CLEARED OVER HALF A MILLION HECTARES OF NATIVE VEGETATION. ONLY FOUR OTHER COUNTRIES IN THE WORLD, BRAZIL, INDONESIA, CONGO AND BOLIVIA, EXCEED THIS RATE.<sup>153</sup>

of water removed for irrigation. Despite living on the driest inhabited continent we consume more water per person than anyone else except North Americans (who live on a far wetter continent).<sup>154</sup>

Australians use more than 1 million litres of fresh water per person annually. This compares to North America's 2 million, Central America's 900,000, Europe's 600,000, Asia's 550,000, South America's 350,000 and Africa's 200,000 litres per person annually.<sup>155</sup>

The cost of land and water degradation is about half the net annual value of agricultural production.<sup>156</sup>

Australia is the highest per capita emitter of greenhouse gases in the developed world.<sup>157</sup>

Australians emit 27 tonnes of carbon dioxide per person per year compared to Americans 21 tonnes, Britons 11 tonnes and Swedes 4 tonnes.<sup>158</sup>

Australia is one of the least energy efficient countries in the developed world, a legacy left by cheap fossil fuel energy and a lack of commitment to improving this situation.<sup>159</sup>

The Australian economy is the 20th least energy efficient out of 29 OECD countries.<sup>160</sup>

Of the four major environmental problems facing the globe in the early 21<sup>st</sup> century – the state

of the oceans, loss of biodiversity, land and water degradation, and greenhouse gas emissions – Australia is the worst performer of all developed countries on three of the four.

We have undoubtedly received past economic and social benefits from this environmental abuse. The vast wealth from agriculture and mining has come at the cost of native ecosystems and species, and land and water quality. Our vast coal reserves have produced cheap electricity for industry and households, but have been a major cause of greenhouse pollution.

Our sprawling suburban lifestyles, which for many Australians are a superior way of life, have pushed nature back and through their car dependency have created transport patterns that are greenhouse unfriendly and cause hardship in the face of rising fuel prices.

Australians produce more waste than any country other than the USA – 690 kilograms of municipal waste per person per year.<sup>161</sup>

Whatever benefits we have derived in the past are now outweighed by the economic, social and environmental costs. And because of the changing global economy the benefits will not continue. Yet our economy is structured to carry on with *business as usual*. Subsidies that have the effect of destroying biodiversity, damage land and water, and increase greenhouse gas emissions are undiminished.<sup>162</sup>

\$14 BILLION OF DIRECT AND INDIRECT SUBSIDIES PER YEAR GO TO NATURAL RESOURCE INDUSTRIES THAT DAMAGE THE ENVIRONMENT.<sup>163</sup>



MOST AUSTRALIANS AGREE THAT THE QUALITY OF LIFE IS NOT IMPROVING. IN 1997 ONLY 13 PERCENT OF US THOUGHT THAT IT WAS IMPROVING, 52 PERCENT THOUGHT IT WAS GETTING WORSE, AND 33 PERCENT THOUGHT IT WAS ABOUT THE SAME.<sup>164</sup>

Macro-economic policies geared to benefit the commodities industries – and that harm non-resource and emerging industries – remain in place.<sup>165</sup>

The reforms of the GST package have entrenched fossil fuel use and discriminated against renewable energy, public transport and energy efficiency.

According to the work of the Australia Institute on the Genuine Progress Indicator (GPI) for Australia, the quality of life in Australia has not risen since the late 1970s despite continuing growth in Gross Domestic Product (GDP).<sup>166</sup> Indeed the Institute suggests that living standards may be dropping and attributes this to unsustainable levels of foreign debt, the combined impact of a number of environmental problems and the growing costs of unemployment and overwork.<sup>167</sup>

Although we still fare well on international comparisons of quality of life, on economic performance we are slipping.<sup>168</sup> For example the World Competitiveness Index of 1996 places us 21<sup>st</sup> of 46 nations (and 17<sup>th</sup> in the OECD, having slipped from 13<sup>th</sup> in 1989).<sup>169</sup>

Yet the World Bank Real Wealth Rating of 1995 places us first of 192 countries.<sup>170</sup>

The Real Wealth Rating factors in natural capital, produced assets, human resources and social capital. Though so well endowed we are not turning our assets into sustainable economic outputs. And we are running down natural capital in the abuse of our land, water, fauna and flora, rather than living off its interest.

It doesn't matter whether one is the wealthiest country or not. But it does matter how a country uses, or abuses, its assets, both natural and human. And it matters how one utilises, or forgoes, one's opportunities.

The cost of inaction is a declining economy, accelerated degradation of water, soil, air, climate and biodiversity, sliding international competitiveness and diminishing quality of life.

## APPENDIX 2

### SOCIAL HEALTH IN OECD COUNTRIES: AUSTRALIA<sup>171</sup>

	Indicator	Australia		
		Actual	Rank	% best practice
Income	Real GDP per head (US\$000)	19.6	14 <sup>th</sup> of 23	52
	Population below income poverty line (%)	13	15 <sup>th</sup> of 17	46
	Real earning growth by employee pa 1980-92	0.5	12 <sup>th</sup> of 19	28
Work	Total unemployment rate (%)	8.5	13 <sup>th</sup> of 21	73
	Long term unemployment (12 months +)	2.6	10 <sup>th</sup> of 20	83
	Labour market participation (%)	51	7 <sup>th</sup> of 23	69
Housing	Home ownership rate (%)	70	2 <sup>nd</sup> of 12	93
	Proportion of public and supported housing (%)	5.7	10 <sup>th</sup> of 12	11
Health	Life expectancy at birth (years)	78	5 <sup>th</sup> of 23	75
	Spending on public health (% GDP)	5.8	14 <sup>th</sup> of 23	48
	Life satisfaction/happiness (index/100)	76.7	7 <sup>th</sup> of 23	96
Education	Full-time students per 100 people aged 5-29 years	55	19 <sup>th</sup> of 21	19
	Public education spending (% GDP)	5.6	11 <sup>th</sup> of 23	41
	Population with higher education (%)	24.3	7 <sup>th</sup> of 18	42
Culture	Ownership of TV per 1000 people	641	3 <sup>rd</sup> of 23	71
	Telephone lines per 1000 people	510	11 <sup>th</sup> of 23	46
	Daily newspapers copies per 1000 people	257	13 <sup>th</sup> of 22	39
Social Stress	Suicides per 100,000 people	19	7 <sup>th</sup> of 18	66
	Prisoners per 100,000 people (excludes USA)	120	19 <sup>th</sup> of 19	0
	Intentional homicides by men per 1000 people	2.5	18 <sup>th</sup> of 23	83
Equity/ Democracy	Income inequality (top 20% by bottom 20%)	9.6	17 <sup>th</sup> of 18	1
	Women in Parliament	24	4 <sup>th</sup> of 23	47
	Central government social security spending (% CGS)	1.0	11 <sup>th</sup> of 17	12
	UN human rights conventions compliance (%)	91	16 <sup>th</sup> of 22	65
	Perceived corruption (Transparency International)	8.7	10 <sup>th</sup> of 23	76
	Development aid (ODA) (\$ per capita of donor country)	62	13 <sup>th</sup> of 20	13
Environment	Energy use (000 kg oil equivalent per head)	5.3	18 <sup>th</sup> of 23	42
	Environmental pollution (CO2 emissions kg per capita)	16.2	21 <sup>st</sup> of 23	28
	Protected areas as total land area (%)	8.7	14 <sup>th</sup> of 23	25

## FURTHER READING

- Brain, Peter, *Beyond Meltdown: The Global Battle for Sustained Growth*, Scribe Publications, 1999
- Brown, L R, Flavin, C and French, H, *State of the World 2000: A Worldwatch Institute Report on Progress Toward a Sustainable Society*, Norton, 2000
- Cocks, D, *Future Takers, Future Makers: Life in Australia 2050*, UNSW Press, 1999
- Diesendorf, M and Hamilton, C, *Human Ecology, Human Economy*, Allen and Unwin, 1997
- Eckersley, R, *Perspectives on Progress: Is life getting better*, CSIRO Resource Futures Program, Working Paper Series 97/27, 1997
- Eckersley, R and Jeans, K (Editors), *Challenge to Change: Australia in 2020*, CSIRO, 1995
- Hamilton, C and Saddler, H, *The Genuine Progress Indicator: A new index of changes in well being in Australia*, Australia Institute Discussion Paper no. 14, 1997
- Hamilton, C, Schlegelmilch, K, Hoerner, A and Milne, J, *Environmental Tax Reform*, ACF Tela series, 2000
- Hawken, P, Lovins, A B and Lovins, L H, *Natural Capitalism: The Next Industrial Revolution*, Earthscan, 1999
- KPMG Consulting, *Socially Responsible Investment Research*, August 2000
- Mackay, H, *Turning Point*, Macmillan, 1999
- Mark Ellis and Associates, *Contribution of the Sustainable Energy Industry to the NSW Economy*, Sustainable Energy Development Authority, July 1999
- National Economics, *State of the Regions*, 1999
- National Institute of Economic and Industry Research for the Department of the Environment, Sport and Territories, *Subsidies to the Use of Natural Resources*, Environmental Economics Paper no. 2, 1996
- OECD, *Environmental Performance Reviews: Australia*, 1998
- Tanner, L, *Open Australia*, Pluto Press, 1999
- Virtual Consulting Group and Griffin nrm Pty Ltd, *National Investment in Rural Landscapes: An Investment Scenario for NFF and ACF*, April 2000
- Weizsäcker, E von, Lovins, A B and Lovins, L H, *Factor 4: Doubling Wealth – Halving Resource Use*, Allen and Unwin, 1997
- Yencken, D and Wilkinson, D, *Resetting the Compass: Australia's Journey Towards Sustainability*, CSIRO Publishing, 2000

# ENDNOTES



- <sup>1</sup> Sam van Rood thanks Paul F Downton for his vision and substantial contribution to the eco-city section of this material. *Habitat*, vol. 27, no. 6, December 1999.
- <sup>2</sup> In 1995 Australia's public expenditure for educational institutions as a percentage of GDP was the sixth lowest of OECD countries. OECD, *Education at a glance – OECD Educational Indicators*, 1998. Since 1992 expenditure on education as a proportion of our GDP has continued to decline. ABS, *Expenditure on Education*, Australia, 1997-98 (catalogue no. 5510.0).
- <sup>3</sup> Australia is at the forefront of embracing the use of new technologies such as mobile phones, the Internet and videos. As at March 1999, 86.8 percent of households owned a video recorder, 44.8 percent owned a computer while as at February 1998 42.3 percent owned a mobile phone. 1.1 million Australians use the Internet. These are among the highest percentages in the world. ABS, *Environmental Issues*, March 1999 (catalogue no. 4602.0) and ABS, *Household use of Information Technology*, February 1998 (catalogue no. 8128.0).
- <sup>4</sup> See Weizsäcker, E von, Lovins, A B and Lovins, L H, *Factor 4: Doubling Wealth – Halving Resource Use*, Allen and Unwin, 1997 and Hawken, P, Lovins, A B and Lovins, L H, *Natural Capitalism: The Next Industrial Revolution*, Earthscan, 1999.
- <sup>5</sup> See Hawken et al 1999, op cit.
- <sup>6</sup> "In the early decades of the 20<sup>th</sup> century Argentina became the world's leading exporter of corn, flax and meat". However, it botched its transition to a modern industrial economy, despite manufacturing contributing more to the economy than agriculture by 1960. By the end of the 20<sup>th</sup> century "Argentina had agricultural and industrial sectors similar to those of developed countries, but they were considerably less efficient" and "a foreign debt comparable to third world countries". *Encyclopedia Britannica* CD 99 International Edition.
- <sup>7</sup> Compare 'Eight Habits of Highly Effective Countries' in Friedman, T, *The Lexus and the Olive Tree*, Harper Collins, 1999.
- <sup>8</sup> OECD, *Environmental Performance Reviews: Australia*, 1998.
- <sup>9</sup> See endnote 2 and also *The Age*, 17 May 2000.
- <sup>10</sup> OECD 1998 op cit. See also Picton T and Daniels P L, Ecological restructuring for sustainable development: evidence from the Australian economy, *Ecological Economics*, Vol 29, No 3, 1999. Australia did not make the necessary adjustments after the 1970s oil crisis. Energy use per unit of GDP in 1987 as a percentage of 1972 levels – Australia (92 percent), Western Europe (83 percent), USA (71 percent), and Japan (62 percent) from: Diesendorf, M and Hamilton, C, *Human Ecology, Human Economy*, Allen and Unwin, 1997 "Agriculture consumed the vast majority [70 percent] of [Australia's] water, but the economic return per unit of water used was relatively low. The agricultural sector earned \$588 of industry gross product per megalitre [one million litres] water used. In comparison industry gross product for manufacturing ranged from \$32,000 per megalitre to \$680,000 per megalitre and service industries ranged from \$2,317 per megalitre to \$1.1 million per megalitre". ABS, *News Release*, 49/2000, 3 May 2000.
- <sup>11</sup> Hawken, Lovins and Lovins predict that Hypercars, the cars of the near future, will reduce the use of iron and steel by 92 per cent and aluminium by one third. Car manufacture will leapfrog from iron over aluminium straight to carbon fibre, reducing its price to such an extent that it becomes competitive with steel in most other industrial applications. Hawken et al 1999 op cit.
- <sup>12</sup> Australia's main export commodities in June 1999 were coal (\$9283 million), non-monetary gold (\$6335 million), iron ore (\$3843 million), wheat (\$3396 million), alumina (\$2843 million), aluminium (\$3298 million). Woodchip exports were worth \$590 million and uranium and thorium ores and concentrates \$288 million. ABS, *The International Trade Database*, August 1999.
- <sup>13</sup> Project Cassandra, Australia's biggest attempt to determine the future of food found that more consumers were demanding organically grown fruit and vegetables. They wanted minimal packaging, no pesticides, allergy warnings and farming method information on the label. *Sydney Morning Herald*, 2 December 1999. See also Alexandra, J, *Environmental Management Systems for Australian Agriculture*, Issues and Opportunities. Alexandra and Associates, April 1999
- <sup>14</sup> KPMG Consulting, *Socially Responsible Investment Research*, August 2000.
- <sup>15</sup> Developing domestic markets will assist export markets. Australia needs to become a solar economy to drive a solar export industry the same way Denmark has with wind power.
- <sup>16</sup> That greenhouse policy can drive the economy rather than inhibit it is understood by US President Bill Clinton. "The greatest environmental challenge of the new century is global warming... If we fail to reduce the emission of greenhouse gases, deadly heat waves and droughts will become more frequent, coastal areas will flood, and economies will be disrupted. That is going to happen, unless we act. Many people ...will believe you cannot cut greenhouse emissions without slowing economic growth. In the Industrial Age that may well have been true. But in this digital economy, it is not true any more. New technologies make it possible to cut harmful emissions and provide new growth". President Bill Clinton, *State of the Union Address*, 27 January 2000.
- <sup>17</sup> National Economics, *State of the Regions*, 1999.
- <sup>18</sup> An extrapolation of eight studies. Details at <http://sme.belgium.eu.net/climnet/pubs/jobs/Exec.html>
- <sup>19</sup> World Business Council for Sustainable Development, *Annual Review*, 1999. The Dow Jones Sustainability Group World Index tracks the leading sustainability-driven companies worldwide.
- <sup>20</sup> See for example Christie, I, *Sustaining Europe: A common cause for the European Union in the new century*, Demos/Green Alliance, 1999.
- <sup>21</sup> Germany now has the largest installed capacity of wind turbines in the world. Already the wind industry has created 25,000 jobs. By 2010 the industry expects to have an average turnover of 4 billion Euros (approximately A\$6 billion) with 80,000 new and sustainable jobs in the medium term. *Renewable Energy*

World, March – April 2000.

<sup>22</sup> For example, Bureau of Industry Economics, *Energy efficiency and greenhouse gas abatement: the role of the cooperative agreements in Australia*, AGPS, 1996; and National Institute of Economics and Industry Research, *Measuring the Economic Impact of Reducing Greenhouse Gas Emissions – a report for the Electricity Supply Association of Australia*, ESAA, 1994.

<sup>23</sup> Mark Ellis and Associates, *Contribution of the Sustainable Energy Industry to the NSW Economy*, Sustainable Energy Development Authority, July 1999.

<sup>24</sup> Mackay, H, *Turning Point*, Macmillan, Sydney 1999.

<sup>25</sup> Ibid

<sup>26</sup> Doug Cocks, the author of *Future Takers, Future Makers*, warns that based on current trends in the perceptions of Australia internationally, this nation may be increasingly seen as a selfish, materialistic and timid society without vision.

<sup>27</sup> See Mackay, 1999. Sir William Deane has defined the Anzac spirit as: "courage and endurance, and duty, and love of country, and mateship, and good humour and the survival of a sense of self-worth and decency in the face of dreadful odds. It also means mutual dependence." Australia Day Message 2000 at <http://www.gg.gov.au/textonly/speeches/000126.html>

<sup>28</sup> Saulwick Research Poll undertaken for ACF and Melbourne Water Corporation in December 1999 of 600 Victorians between the ages of 16 and 24 found 91 percent said the threat to the environment is real and must be treated seriously, 80 percent placed environmental protection above economic growth and 82 percent thought we must do something about the greenhouse effect. Protecting the environment, creating a fairer society and reducing unemployment were seen as the major goals facing Australia today.

<sup>29</sup> Ibid

<sup>30</sup> Adapted from a definition used by Forum for the Future, a London-based sustainability organisation.

<sup>31</sup> ACOSS *INFO 202*, 21 January 2000, NATSEM research published in the *Weekend Australian* (July 2000), ACOSS *INFO 113*, 22 October 1998 (updated July 1999).

<sup>32</sup> The relationship of trade and the environment displays a tragic irony. The economic impacts of the chaos from climate change may eventually outweigh the benefits of trade in the products responsible for climate change, eg coal.

<sup>33</sup> Australia's traditional economy virtually rests on cheap energy. But fossil fuels will not remain cheap. Cheap conventional oil supplies are limited and we will become increasingly dependent on imports from the Middle East. See for example Campbell, C J, *The Myth of Spare Capacity*, Oil and Gas Journal, 20 March 2000 or Campbell, C. J and Laherrere, J H, *The End of Cheap Oil*, Scientific American, March 1998.

<sup>34</sup> Australia will never be short of energy. We have enormous potential for solar energy and the cost of this will fall and meet rising fossil fuel prices. While photovoltaic power is still considerably more expensive than coal-fired power in Australia (perhaps about ten times) it is already economic in some remote locations where

linking to a grid is too expensive and where it is a substitute for diesel generation. Of course coal-fired power has not internalised the cost of greenhouse pollution. A KPMG report commissioned by Greenpeace in 1999 found that if one factory were built producing five million panels a year, this would cut the cost of solar power fourfold and make it competitive for domestic consumers. Australia also has enormous potential for wind energy with some of the most suitable coastal locations in the world. The huge potential for energy efficiency is the cheapest and most sensible transition strategy of all. Industry can actually benefit from more expensive energy by using efficiency to drive productivity as long as increases in price are small and steady, not large and abrupt. But the longer we leave change the harder it becomes and the more likely that the changes will be abrupt. See Weizsäcker et al 1997 for information on how the Swiss economist Rudolf Rechsteiner has shown that a positive correlation can be found between economic performance and average energy prices in OECD countries, ie countries with more expensive energy have outperformed others.

<sup>35</sup> Along with cheap fossil fuel energy the traditional Australian economy and lifestyle is driven by cheap water. Our most precious commodity is grossly underpriced and hence wastage is staggering. Most rivers in southern Australia are in poor ecological shape with inadequate environmental flows. Development plans in northern Australia are a recipe for the same. See Yencken, D and Wilkinson, D, *Resetting the Compass: Australia's Journey Towards Sustainability*, CSIRO Publishing, 2000.

<sup>36</sup> We need to move to new industries while retaining and enhancing the natural capital base that has been badly battered by the old agricultural industries for ever decreasing real returns. An older generation of farmers is about to retire with virtually no follow-on generation. Within a few decades the family farm will be an utterly transformed concept. The pastoral zone presents a problem of a vaster scale. Many properties are neither economically nor ecologically viable and depopulation is a real possibility. Land management may be through stewardship arrangements by existing landholders or by repopulation by Aboriginal people. In a new economy land provides not just food and fibre, but ecological services and amenity as well. Landscapes, not just farms, will be managed. This will have profound effects on rural Australia. New technological advances such as genetic engineering are a double-edged sword. While promising a brave new world of productivity they are plagued by consumer resistance. There may be far more lucrative opportunities in providing international and domestic markets with genuinely clean, green and GMO-free produce. See Williams, J, *Farming without Harming: How Australian Made Rural Industries Sustainable*, in *Challenge to Change: Australia in 2020*. Editors, Eckersley, R and Jeans, K, CSIRO, 1995 and Yencken and Wilkinson 2000 op cit.

<sup>37</sup> Economist Peter Brain maintains that "Australia's commodity producers [have established] an economic regime which minimises its own risks and maximises the risks faced by non-resource-based



traditional, or emerging technology producers. This has prevented Australian industry from moving up the value-added chain".

In other words the mining (and agricultural) industries stand in the way of Australia's transition to the new economy. Brain, Peter, *Beyond Meltdown: The Global Battle for Sustained Growth*, Scribe Publications, 1999.

<sup>38</sup> Much Australian tourism is nature-based. Tourism does not have a good record of looking after the goose that lays the golden egg. The industry has not been a strong advocate for the environment. Although it has been a major beneficiary of the creation of national parks and world heritage areas it has rarely assisted in campaigns for their creation or protection. See for example Figgis, P, *Australia's National Parks and Protected Areas: Future Directions*, Australian Committee of IUCN Occasional Paper no 8, ACIUCN, 1999.

<sup>39</sup> The Australian dollar continues to fall, partially because Australia is viewed as an old economy. The terms of trade continue to worsen as low-value commodity exports attempt to balance against high-value manufactured imports, and this in turn further drives the dollar down. This will continue until efforts are made to create a new economy in Australia that moves us beyond commodity exporter. "Over the medium term ... world commodity prices are likely to show an overall downtrend when expressed in 1999-2000 dollar terms". ABARE, *Australian Commodities – forecasts and issues*, Volume 7, Number 1, March 2000. Chief Scientist, Dr Robin Batterham, has warned that unless Australia invests more in the knowledge economy, including environmental investment, the Australian dollar will languish at US30c and Australia will slide into genteel decline. Taylor, L, *Stakes high in knowledge economy race*, *Australian Financial Review*, 25 August 2000.

<sup>40</sup> Regulation of the communications and information areas will be complex. Community service obligations, local content, Australian ownership, competition, and communication industry export potential all pose regulators with tricky problems. In 1999 Lindsay Tanner predicted that "information economy issues such as these will soon dominate the national political agenda in the way tariff and wages policy did in the 1960s and 1970s". Tanner, L, *Open Australia*, Pluto Press, 1999.

<sup>41</sup> We are richly endowed with sunshine and wind, the 21<sup>st</sup> century energy sources, and have the potential to play as an important role in the hydrogen economy as we have, through coal, in the 20<sup>th</sup> century carbon economy. Water technologies and services can also be developed into an Australian export speciality. We need to commit early and fully to the development of these industries to establish dominance and leadership as Denmark has with wind energy. Wind power supplies 10 per cent of Danish electricity and wind turbines are Denmark's fourth largest export worth US \$1 billion a year and employing 12,000 people. Crawford, Sebastian, *Turning to the wind*, *Habitat*, ACF, Vol 27, No 5, October 1999. Denmark has done this through a strongly interventionist industry policy and environmental taxation. According to the Danish Ministry of Economic Affairs, "Danish experience through many years is that

we have not damaged our competitiveness because of green taxes. In addition, we have developed new exports in the environmental area". Quoted in Hamilton, C, Schlegelmilch, K, Hoerner, A and Milne, J, *Environmental Tax Reform*, ACF Tela series, 2000.

<sup>42</sup> Australia's opportunities lie in clever, high tech, elaborately transformed and customised manufacturing. Niche products, such as Tasmania's fast ferry industry, are the way of the future. Economists such as Peter Brain believe that Australia must maintain a vibrant manufacturing sector. He observes that the greater the size of a country's manufacturing sector, the greater the rate of growth of its economy. He notes that manufacturing in Australia only has a 15 percent share of GDP, the lowest in the OECD bar Norway. Even New Zealand is higher. To raise this share Brain maintains that Australia must abandon the strict neo-liberal economic framework that shuns interventions through industry policy. As he puts it, we need an economic model that doesn't treat wood chips, potato chips and computer chips as equal. Brain 1999 op cit.

<sup>43</sup> Australians produce far more waste than societies we think of as wasteful, for example the Japanese (690 kilograms of municipal waste per capita per annum as compared to 400). Only the Americans exceed us. The OECD has remarked that "considerable scope exists in Australia for the use of economic instruments in waste management". OECD, *Environmental Performance Reviews: Australia*, 1998.

<sup>44</sup> If Australia is to become a knowledge society education is essential. Australia is performing poorly in comparison with other developed nations in education investment. Australia ranks 23<sup>rd</sup> of 28 countries in GDP spending on education. Reported in *The Age*, 17 May 2000. Fair access to education is an issue of equal importance. The inequity of a well-resourced private education system versus a poorly-resourced public system enhances the instability of society. The percentage of students attending government schools has fallen from 72.7 percent in 1988 to 69.7 percent in 1999. ABS, *Australian Social Trends*, 1999 (catalogue no. 4102.0).

<sup>45</sup> The service sector of the new economy creates jobs but aspects of the digital sector destroy them. The service sector accounted for 68 percent of GDP and 73 percent of employment in 1997-98. ABS, *Australia Now*, www.abs.gov.au The American model of low minimum wages is not the solution. Low unemployment is illusory in the USA, which has 7.3 million people officially unemployed (4.2 percent of the workforce). However, another 7 million are unemployed but do not qualify for the official statistics. Nearly 5 million are awaiting trial, in prison, on probation or on parole. Another 35 million are employed but don't earn enough to support a family. Higher unskilled employment and poor social service provision has led not to the elimination of poverty, but has created a class of working poor. Hawken et al 2000 op cit. Experience from Europe shows that wage restraint does not create jobs. Grottian, Peter, *The Future of Work: New Concepts for the Work of Tomorrow*, in *Deutschland magazine*, No 6/99.

<sup>46</sup> Society is dividing more and more into the over-employed and the under-employed. Both are unhappy with their situation and yet we as a society have had no success in breaking through this log-jam. Restructuring of the work culture, job-sharing, civic work and flexibility are all challenges that have not yet been comprehensively tackled. See Tanner 1999 op cit.

<sup>47</sup> According to ACOSS two million Australians live below the poverty line (11.2 percent, an increase of 5 percent since the poverty line was first measured in 1973) and the top 20 percent of households had 44 percent of private income while the bottom 20 percent had just 3 percent. Similarly the top 10 percent of Australians own 52 percent of the nation's wealth, while the bottom 50 percent owns just 3 percent. This makes Australia one of the most unequal of all developed countries (having slipped from 7<sup>th</sup> to 15<sup>th</sup> on the UN index of human development). See ACOSS *INFO 202*, 21 January 2000, ACOSS *INFO 113*, 22 October 1998 (updated July 1999) and ACOSS *Media Release*, 17 March 1999. Despite the new 'mum and dad' shareholder culture, the wealthy own an ever-greater share of the nation's wealth. 53 percent of adult Australian's now own shares, but 42 percent of these shareholders own portfolios with a value of \$10 000 or less (Australian Stock Exchange Limited, *Media Statement*, 8 February, 2000). The divide is not just about money. It is the information-rich versus the information-poor, the well-educated versus the less-educated, the job-rich versus the job-poor, the winners (or potential winners) of globalisation versus the losers. The former are likely to be educated, skilled and living in Australia's global centres. The latter are likely to be unskilled or semi-skilled, or dependent on commodity prices such as small farmers, and living in rust belt or rural areas. Access to services and skills training is crucial to this divide. National Economics' report *State of the Regions* in 1999 concluded that although Australia was experiencing an economic boom, benefits were geographically concentrated with employment and income diverging between regions. Global centres (essentially inner Sydney, Melbourne, Brisbane, and Perth) were booming and leaving the rest of the country behind. Regional Australia is particularly vulnerable to economic shocks. See National Economics 1999 op cit. Colebatch, Tim, *The Age*, 19 May 2000, reports ABS figures that show unemployment in the Gympie-Bundaberg region (at 12.1 percent the highest in Australia) is over five times as high as in the northern suburbs of Sydney (the lowest at 2.4 percent). The difference in average income between NSW (the highest state at \$30,171) and Tasmania (the lowest at \$24,772) is about 20 percent. High-income regions such as inner Sydney (average over \$45,000) increase this contrast. ABS data shows that the gap between rich and poor has increased in recent years with the middle class getting smaller. In 1994-95 the top 20 percent of weekly income was received by 3.6 percent of the population – by 1997-98 it had increased to 3.8 percent. Over the same time period those receiving the bottom 20 percent of weekly income had changed from 47.9 percent to 48.3 percent. ABS website – *Australia Now* – [www.abs.gov.au](http://www.abs.gov.au) See also National Economics 1999 op cit.

The divide between the well-off and struggling, both on an individual basis and on a regional basis, is growing. The combination of neo-liberal economic policies and globalisation may be exacerbating this further. In the last fifty years Australia has stood in the middle ground between the European model of social welfare and the American model of individual responsibility. In the last decade it has moved closer to the American model. While it is true that some European countries have moved in this direction too (for example Britain and to a certain extent Germany) other countries such as the Netherlands have steadfastly resisted this trend. The Dutch economy has continued to thrive against the prevailing wisdom in the 1980s and 1990s regarding social welfare systems. Indeed confidence in the Dutch economy has never been better. A survey of 30 industrialised countries conducted by the Economist Intelligence Unit places the Netherlands as the number one country in which to do business in 2000-4. Australia is 15<sup>th</sup>, having slipped from 10<sup>th</sup> in 1995-99. Yet in contravention of neo-liberal orthodoxy the Dutch government runs large budget deficits, taxation is about 50 percent of GDP, and the country has low unemployment and energy taxes. Source: Kenneth Davidson, Unclean and uncompetitive: say hello to the unlucky country, *The Age*, 29 May 2000.

<sup>48</sup> The attitude of governments and the community to the extent of welfare for the unemployed, the elderly, the disabled, and the disadvantaged will be tested in the next decades. The percentage of Australians receiving social security as the primary source of income has doubled in less than twenty five years and is now about 30 per cent. From 1966-67 to 1996-97 social security expenditure increased from 4.2 percent of GDP to 9.8 percent and from 17.8 percent of Commonwealth outlays to 38.8 percent. Parliamentary Library Statistics Group quoted in Tanner 1999, op cit.

<sup>49</sup> Will Australia continue to take the American road of steadily declining union membership and individual work place agreement bargaining? Or will healthy labour market conditions be best achieved through a new accord, formal or informal, that factors in the role of trade unions, and doesn't just assume their decline or assist it? According to Lindsay Tanner, "the central question in the debate on the future of Australian industrial relations is whether the contract of employment is inherently different from other contracts, and appropriately subject to community intervention". Tanner 1999, op cit.

<sup>50</sup> Australia has succumbed to a low tax disease. This disease, a legacy of neo-liberal economic theory, assumes that lower taxes are always better. Australia now has the lowest taxation in the developed world bar the USA, Japan and South Korea. Australia has the sixth lowest taxation rate in the OECD with only the USA, Japan, Turkey, Korea and Mexico having lower rates. OECD, *Revenue Statistics*, 1998, [www.oecd.org/daf/fa/stats/graph1.html](http://www.oecd.org/daf/fa/stats/graph1.html) The two major political parties are caught in a trap of their own making where any rise in taxes is pounced upon by the other as a sign of weakness or economic failure. Where extra revenue is required other means are pursued, for example sale of public

assets, or levies like the guns levy, that are an attempt to disguise that they are in fact taxation. Australia is different to the USA, Japan or South Korea and any attempt to emulate their taxation policies is going to lead us to trouble. Japan and South Korea are corporatist states where business and government, and their respective rights and responsibilities, are intertwined in a way that the Australian cultural landscape would never allow. A less robust democracy and a far more interventionist role in social institutions by corporations is the price that is paid for lower taxation. The USA tolerates an under-class that is free to pursue the American dream of success. The dynamism of America ensures enough succeed to keep the American dream alive, but most fail. This under-class runs contrary to the Australian notion of egalitarianism.

The Australian dream has been a balance between the American dream and the European social welfare state. Low taxation upsets this balance. Another reason why emulation of the low taxation policies makes no sense in Australia is that unlike the USA, Japan and South Korea we have a small population and a low population density. We do not have the economies of scale comparable to these countries to provide services and infrastructure. The taxation challenge is to ensure taxes are high enough to provide services but low enough not to hinder competitiveness.

Environmental taxes provide an opportunity to move the tax base onto a more sustainable footing that if cleverly introduced enhances productivity. But the size of the total tax base is still an issue as environmental tax reform is based on overall revenue neutrality.

<sup>51</sup> Australia has no population policy and yet population is a key determining factor about future conditions in this country. Views on what Australia's population should be vary enormously. Some believe we have exceeded our ecological carrying capacity already, eg Tim Flannery. Others believe that without substantially increasing our population we are facing economic decline, eg Richard Pratt. The challenge is to work through these differences – this may involve the radical environmental view acknowledging that population is only one factor in determining impact, and the radical economic view acknowledging that Australia is not an empty country waiting to be filled, but has real ecological constraints to its carrying ability. The debate must also be managed to avoid racial overtones.

<sup>52</sup> As well as the continuation of refugees fleeing from intolerable political, social and economic circumstances a new form of refugee will be appearing on Australia's shores, the eco-refugee. As climate change affects our Asian and Pacific neighbours – Bangladesh, the Maldives and small Pacific Island states are particularly susceptible – its eco-refugees will be seeking out the developed countries in their region. Australia will be particularly vulnerable to pressure if it maintains its present greenhouse policies. Other environmental issues, such as water shortages, could see refugees coming from as far afield as the Middle East.

<sup>53</sup> Australians are moving from the inland to coastal areas in record numbers. Not only is this causing a population decline in inland centres and areas (in particular the wheat/sheep belt) but placing

a population stress on coastal regions. The bush, the place of the enduring myth of Australian identity, is in continual decline, and we are clinging to the edge of the continent in a linear semi-suburbia. Inland centres with the greatest decline include Grafton, Broken Hill and Goulburn. Coastal regions with the greatest growth include Busselton and the Gold and Sunshine Coasts. KPMG survey quoted in *The Age*, 3 May 2000.

<sup>54</sup> The persistence of Hansonism, and anti-migration advocacy, whether economic, cultural or environmental based, may place pressure on multi-culturalism. Multi-culturalism is a great Australian achievement and appears fairly robust. But this has been achieved by bipartisan commitments that must be maintained to reap the social, cultural and economic benefits that multi-culturalism brings.

<sup>55</sup> Some countries use investment in culture as both a component of the knowledge economy and as a drawcard for tourism and sector investment. For example, governments in Germany and France spend, by Australian standards, mind boggling sums on culture. The culture budget for the city of Berlin is US\$ 1 billion per year. *Deutschland magazine*, No5/99. Total outlays for cultural funding of the Commonwealth, state territory and local governments for 1997-98 was \$3,531m. ABS, *Cultural Funding in Australia, 1997-98* (catalogue no. 4183.0) This, for a city about the size of Melbourne, is about half of the entire culture budgets of all Australian governments.

<sup>56</sup> Although the facts of Indigenous disadvantage are indisputable it seems that many Australians still won't extend the fair go to Indigenous people. Life expectancy is 18 years less for males, 19 years less for females, perinatal mortality is over twice as high, violence-related hospital admissions is over 20 times as high, imprisonment rate is over 16 times as high, unemployment rate is nearly 4 times as high, people in dwellings of 10 or more people is nearly 50 times as high, year 12 retention rates are less than half as high, and post-secondary qualification rates are less than half for Indigenous Australians compared to non-Indigenous Australians. Council for Aboriginal Reconciliation statistics quoted in *The Age*, 20 May 2000. Australia's record of dealing with its Indigenous people is poor. Apart from the injustice itself, Australia's international reputation is vulnerable. A failure to apologise for past wrongs is symbolic of an inability to move forward and stands in contrast to the apologies and restitution of other western nations in matters of moral behaviour. The role Australia plays in the world, already dented by Australia's stances on issues such as greenhouse, is further battered by this image.

<sup>57</sup> We have particularly prided ourselves on egalitarianism. The archetypical Australian saying is 'fair go, mate'. Fairness and reasonableness are noble values to aspire to. And mateship, vexed as the term had become, is an attribute of self-reliance and equality. A 'fair go' is, in a laconic Australian way, as inspirational as 'liberty, equality and fraternity' or 'the pursuit of happiness for all'.

<sup>58</sup> KPMG Consulting 2000 op cit.

- <sup>59</sup> OECD, *Enhancing Environmentally Sustainable Growth: A Framework for EDRC Country Reviews*, Working Party no. 1 on Macroeconomic and Structural Policy Analysis, 1999.
- <sup>60</sup> See Virtual Consulting Group and Griffin nrm Pty Ltd, *National Investment in Rural Landscapes: An Investment Scenario for NFF and ACF*, April 2000.
- <sup>61</sup> Total environmental expenditure in Australia was \$8.6 billion in 1996-97. This represents 1.6 percent of GDP. \$1.7 billion of this is by local government, thus far exceeding the expenditure of the Commonwealth's Natural Heritage Trust of \$1.5 billion over six years. ABS (catalogue no. 4603.0) Although comparisons are difficult to make it appears that Australia spends less on pollution abatement and control than all 18 other OECD countries surveyed by the OECD. Australia spent 0.7 percent of GDP from public and private sectors. OECD 1999 op cit. Total funding available to defence in 2000-1 is \$19.35 billion, Department of Defence (2000), 2000-2001 Budget Defence Portfolio Budget Statements, Commonwealth of Australia.  
<http://www.defence.gov.au/budget/00-01pbs/Section1.pdf>
- <sup>62</sup> Macken, J, Cures and curses: Our future health, *Australian Financial Review Magazine*, February 2000.  
[http://www.acfonline.org.au/campaigns/epbc/discussion/casten\\_mossop.htm](http://www.acfonline.org.au/campaigns/epbc/discussion/casten_mossop.htm)
- <sup>63</sup> Speech to 1996 Fenner Conference on the Environment, <http://www.environment.gov.au/minister/env/96/mr30sept.html>
- <sup>64</sup> National Institute of Economic and Industry Research for the Department of the Environment, Sport and Territories, *Subsidies to the Use of Natural Resources*, Environmental Economics Paper No. 2, 1996.
- <sup>65</sup> Hamilton et al 2000 op cit.
- <sup>66</sup> Quoted in Hamilton et al 2000 op cit.
- <sup>67</sup> Australian Financial Review and Courier Mail, 12 May 2000.
- <sup>68</sup> Tanner 1999 op cit.
- <sup>69</sup> Tindale, S and Holtham, G, *Green Tax Reform: Pollution payments and labour tax cuts*, IPPR, London, 1996, Ekins, P, *Ecological Tax Reform, Environmental Policy, and the Competitiveness of British Industry*, Insights, Forum for the Future, 1998 and Hamilton C, Hundloe T, and Quiggin J, 1997, *Ecological Tax Reform in Australia: Using taxes and public spending to protect the environment without hurting the economy*, Australia Institute, 1997. The ORANI-E modelling assumed a carbon tax of \$23 per tonne of carbon dioxide.
- <sup>70</sup> <http://www.rri.org/envatlas/europe/netherlands/nl-index.html#policy> The Resource Renewal Institute (RRI) is a nonprofit organisation founded in 1985 to support innovative environmental management in the United States and worldwide. RRI's main role is to promote the implementation of green plans - long-term, comprehensive strategies designed to achieve sustainability.
- <sup>71</sup> Tanner 1999 op cit.
- <sup>72</sup> Speech to the International Society of Ecological Economists, 6 July 2000,  
<http://www.environment.gov.au/minister/env/2000/sp6jul00.html>
- <sup>73</sup> Hamilton, C and Saddler, H, *The Genuine Progress Indicator: A new index of changes in well-being in Australia*, Australia Institute Discussion Paper Number 14, Australia Institute, 1997.
- <sup>74</sup> Speech to 1996 Fenner Conference on the Environment, <http://www.environment.gov.au/minister/env/96/mr30sept.html>
- <sup>75</sup> The Age, 5 May 1999.
- <sup>76</sup> The Australian, 10 June 1998.
- <sup>77</sup> Australian Financial Review, Weekend 26-27 August 2000.
- <sup>78</sup> *Social investment forum*, November 1999  
<http://www.socialinvest.org/areas/news/1999-trends.htm>
- <sup>79</sup> Macken, J, *Australian Financial Review*, 4 June 2000.
- <sup>80</sup> Ecological footprint is a measure of environmental impact and is defined as "the area of productive land and water ecosystems required to produce the resources that the population consumes and assimilate the wastes that the population produces, wherever on Earth that land and water may be located." Rees, W E, Eco-footprint analysis: merits and brickbats, *Ecological Economics*, vol. 32 no. 3. The comparative per capita footprints are from Wackernagel, M, Onisto L, Bello P, Linares, A C, Falfan, I S L, Garcia, J M, Guerrero, A I S, and Guerrero M G S, National natural capital accounting with the ecological footprint concept, *Ecological Economics*, vol. 29, no. 3.
- <sup>81</sup> Address to the Business Council of Australia Population Growth and Society Conference, 15 November 1999  
<http://www.alp.org.au/media/1199/mfsspopp151199.html>
- <sup>82</sup> National Security Strategy of Engagement and Enlargement, February 1995.
- <sup>83</sup> The Age, 12 July 2000.
- <sup>84</sup> <http://www.nff.org.au/> 15 May 2000.
- <sup>85</sup> Study by agricultural economist Rod Gill quoted by CSIRO at [http://www.dwe.csiro.au/ecoservices/myer\\_examples.htm#eg2](http://www.dwe.csiro.au/ecoservices/myer_examples.htm#eg2)
- <sup>86</sup> Full text available at <http://www.acfonline.org.au/campaigns/landm/briefs/js.htm>
- <sup>87</sup> Alexandra, J, *Environmental Management Systems for Australian Agriculture, Issues and Opportunities*. Alexandra and Associates, April 1999.
- <sup>88</sup> AAP, 20 July 2000.
- <sup>89</sup> [http://www.acfonline.org.au/whatsnew/mr07\\_24.htm](http://www.acfonline.org.au/whatsnew/mr07_24.htm) 24 July 2000.
- <sup>90</sup> Speech to the Central Council of the Queensland National Party, 8 April 2000,  
[www.environment.gov.au/minister/env/2000/sp8apr00.html](http://www.environment.gov.au/minister/env/2000/sp8apr00.html)
- <sup>91</sup> <http://www.environment.gov.au/soe/soe96/soeexec2.html#inland-waters>
- <sup>92</sup> Media release 18 August 2000  
[www.environment.gov.au/minister/ps/2000/psmr18aug.00.html](http://www.environment.gov.au/minister/ps/2000/psmr18aug.00.html)
- <sup>93</sup> Quoted by Crass, K and Jones, A, Ecosystem Services, Australian Museum,  
[http://www.austmus.gov.au/biodiversity/factsheets/fs\\_ecosy.html](http://www.austmus.gov.au/biodiversity/factsheets/fs_ecosy.html)
- <sup>94</sup> <http://www.environment.gov.au/soe/soe96/biodiversitykey.html>
- <sup>95</sup> <http://www.environment.gov.au/soe/soe96/landresources.html>
- <sup>96</sup> [www.fcit.monash.edu.au/BarryJones/BarryJones1.html](http://www.fcit.monash.edu.au/BarryJones/BarryJones1.html). speech, 14 April 1999.
- <sup>97</sup> Wilderness Society media release, 19 August 1999.

- [http://www.wilderness.org.au/member/tws/news/media/19990819\\_mr.html](http://www.wilderness.org.au/member/tws/news/media/19990819_mr.html)
- <sup>99</sup> R. Thackway, quoted in Figgis 1999 op cit.
- <sup>100</sup> List from Figgis 1999 op cit.
- <sup>101</sup> Driml, S, *Dollar Values and Trends of Major Direct Uses of the Great Barrier Reef Marine Park*, Research Publication No. 56, Great Barrier Reef Marine Park, 1999.
- <sup>102</sup> <http://www.environment.gov.au/soe/soe96/soeexec2.html#naturalandculturalheritage>
- <sup>103</sup> Costanza, R, d'Arge, R., De Groot, R, Farber, S, Grasso, M, Hannon, B, Limburg, K, Naeem, S, O'Neill, F V, Paruelo, J, Raskin, R G, Sutton, P, Van Den Belt, J, The Value of the World's Ecosystem Services and Natural Capital. *Nature* 387:253-260, 1996.
- <sup>104</sup> <http://www.environment.gov.au/soe/soe96/soeexec2.html#managementestuariesandthesea>
- <sup>105</sup> The main concerns are related to health, economics, environment and ethical issues. These concerns are spelt out at The Australian Consumers Association website <http://www.choice.com.au/articles>, at The Rocky Mountain Institute website <http://www.rmi.org/images/other/TwoBotanies.pdf>, at the ACF GeneEthics Network website [www.geneethics.org.au](http://www.geneethics.org.au) and at ACF's website <http://www.acfonline.org.au/campaigns/geneethics>.
- <sup>106</sup> The Age, 25 March 2000.
- <sup>107</sup> Quoted in *Habitat*, vol 27, no 3, June 1999.
- <sup>108</sup> Lovins, A and Lovins L H, *A Tale of Two Botanies*, 1999. <http://www.rmi.org/images/other/TwoBotanies.pdf>
- <sup>109</sup> Australia Day address, 26 January 2000, <http://www.gg.gov.au/textonly/speeches/000126.html>
- <sup>110</sup> National Economics 1999 op cit.
- <sup>111</sup> Ibid
- <sup>112</sup> Europeans have only been living in Australia for about 210 years. Aborigines have been here for something like 60,000 years. Non-Aboriginal Australians need to acquire, fairly and thoroughly, the notion that it is possible to live here 60,000 years and not squander the resources in the first 250.
- <sup>113</sup> Stephan Schnierer of the College of Indigenous Australian Peoples, Southern Cross University, writes: "While indigenous people welcome the elevated status of indigenous ecological knowledge in mainstream society, they are nevertheless cynical about the rationale behind it. Researchers have tended to see indigenous peoples as a rich source of untapped research projects rather than as citizens with equal status. [...] For indigenous people the application of indigenous ecological knowledge is part of a much broader agenda which is reconnection with traditional lands and the right to have a say in decisions about the use and management of the natural resources of that land". Quoted in Yencken and Wilkinson 2000 op cit.
- <sup>114</sup> The Vincent Lingari Lecture, <http://www.gg.gov.au/textonly/speeches/960822.html> 22 August 1996.
- <sup>115</sup> Langton, M, *Burning Questions: emerging environmental issues for indigenous peoples in northern Australia*, Centre for Indigenous Natural and Cultural Resource Management, North Territory University, Darwin, 1998.
- <sup>116</sup> Australian Science, Technology and Engineering Council (ASTEC), *Matching Science and Technology to Future Needs: 2010*, Department of Industry, Science and Resources, 1996. [www.isr.gov.au/science/astec/astec/future/final/futorea.html](http://www.isr.gov.au/science/astec/astec/future/final/futorea.html)
- <sup>117</sup> <http://home.vicnet.net.au/~gjuetc/research.html> Ninety billion ECU is currently equivalent to about A\$140 billion.
- <sup>118</sup> ASTEC 1996 op cit.
- <sup>119</sup> Mark Ellis and Associates 1999 op cit.
- <sup>120</sup> Towards the Future, Asia-Pacific Economic Summit 2000, *The Age*, 11 – 13 September 2000.
- <sup>121</sup> Brown, L R, Flavin, C and French, H, *State of the World 2000: A Worldwatch Institute Report on Progress Toward a Sustainable Society*, Norton, 2000 and Crawford, Sebastian, Turning to the wind, *Habitat*, ACF, Vol 27, No 5, October 1999.
- <sup>122</sup> 21 November 1999, quoted on dustjacket of Hawken et al 1999.
- <sup>123</sup> The Australian, 23 March 1999.
- <sup>124</sup> Worldwatch Institute, *State of the World 1998*, W W Norton, 1998.
- <sup>125</sup> From *My Country*, by Dorothea McKellar.
- <sup>126</sup> Newman, P and Kenworthy, J, *Sustainability and Cities: Overcoming Automobile Dependence*, Island Press, 1999.
- <sup>127</sup> <http://www.environment.gov.au/soe/soe96/soeexec2.html#cities>
- <sup>128</sup> Medical researchers have already noted the effect on human life in Australia. "We've seen dengue fever appear in Queensland, Ross River fever has been present in New South Wales, we've had Japanese encephalitis in some of the islands off North Queensland; these are latitude shifts. Now, clearly they're not proof of a warming trend but they are entirely consistent with what our models show us will happen with global warming. [...] 861 persons with Ross River virus that have gone on to have chronic symptoms and in addition to being debilitating, [...] it can affect productivity, family, but beyond that, it can affect trade, commerce and tourism". Dr Paul Epstein, Harvard Medical School, Radio Australia 2 October 1996. <http://www.abc.net.au/ra/elp/sincfile/st021096.htm>
- <sup>129</sup> See Weizsäcker 1997 op cit.
- <sup>130</sup> Business Review Weekly, 14 September 1998.
- <sup>131</sup> The Age, 1 May 1999.
- <sup>132</sup> Evidence to the Standing Committee on Environment, Recreation and the Arts Inquiry into trading in greenhouse emissions, 28 May 1998.
- <sup>133</sup> AGA Greenhouse Gas Abatement Policy – Core Principles, 30 June 2000.
- <sup>134</sup> Brown et al 2000 op cit.
- <sup>135</sup> Reuters, 18 July 2000.
- <sup>136</sup> Australian Gas Association media release 28 June 2000.
- <sup>137</sup> BHP Media Release, 2 August 2000.
- <sup>138</sup> Speech, 14 April 1999. [www.fcit.monash.edu.au/BarryJones/BarryJones1.html](http://www.fcit.monash.edu.au/BarryJones/BarryJones1.html)
- <sup>139</sup> <http://www.acfonline.org.au/campaigns/tax/official/taking.htm>
- <sup>140</sup> Morgan, G, Corbett, S, Wiodarczy, J and Lewis, P, 'Air Pollution and Daily Mortality in Sydney', *American Journal of Public Health*, 88:759-764, 1998 and National Environment Protection Council

(NEPC), *Towards a National Environment Protection Measure for Ambient Air Quality*, An NEPC Committee Paper, NEPC, 1997.

- <sup>141</sup> Nuclear energy is now the slowest growing energy source, under 1 percent in 1996. See Edwards, R, Nuclear firms want special treatment, *New Scientist*, 14 June 1997. For a succinct analysis of nuclear industry's decline see Lovins, A and Lovins L H, 1999 op cit.
- <sup>142</sup> Quoted in Lovins, A and Lovins L H, 1999 op cit.
- <sup>143</sup> [www.fcit.monash.edu.au/BarryJones/BarryJones1.html](http://www.fcit.monash.edu.au/BarryJones/BarryJones1.html). speech, 14 April 1999.
- <sup>144</sup> We have lost a total of 19 mammal species. We have also lost 21 bird species (all but one from islands) and 79 plant species. Currently 50 bird, 43 mammal, 17 fish, 29 amphibian, 51 reptile, 118 insect and a colossal 1,009 plant species are officially classed as endangered or vulnerable. Yencken, and Wilkinson 2000 op cit.
- <sup>145</sup> Ibid
- <sup>146</sup> Ibid
- <sup>147</sup> In 1999 Australia cleared over half a million hectares of native vegetation (estimated at 529,200 hectares). On available figures only four other countries in the world, Brazil (2,554,400 hectares), Indonesia (1,084,400 hectares), Congo (740,200 hectares) and Bolivia (581,400 hectares) exceed this rate. The figures for 1999 Australian clearing are conservative estimates based on best available data. International figures are drawn from *State of the World's Forests*, Food and Agriculture Organization of the United Nations (FAO) 1999 or 1998-99 *World Resources: a guide to the global environment*, Oxford University Press 1998.
- <sup>148</sup> Study by agricultural economist Rod Gill quoted by CSIRO at [http://www.dwe.csiro.au/ecoservices/myer\\_examples.htm#eg2](http://www.dwe.csiro.au/ecoservices/myer_examples.htm#eg2)
- <sup>149</sup> Costanza et al 1996.
- <sup>150</sup> Quoted by Crass, K and Jones, A, *Ecosystem Services*, Australian Museum, [http://www.austmus.gov.au/biodiversity/factsheets/fs\\_ecosy.html](http://www.austmus.gov.au/biodiversity/factsheets/fs_ecosy.html)
- <sup>151</sup> Australia, with 5 percent of the world's landmass, accounts for an estimated 19 percent of the world's soil erosion. OECD, *Environmental Performance Reviews: Australia*, 1998.
- <sup>152</sup> Virtual Consulting Group and Griffin nrm Pty Ltd, 2000 op cit.
- <sup>153</sup> See Endnote 147.
- <sup>154</sup> Australians used more than 1 million litres of fresh water by person during 1996-7. ABS *Water Account for Australia*, [catalogue no. 4610.0] This compares to North Americans 2 million, Central Americans 900,000, Europeans 600,000, Asians 550,000, South Americans 350,000 and Africans 200,000. World Resource Institute data quoted in ABS media release, 49/2000, 3 May 2000.
- <sup>155</sup> Ibid
- <sup>156</sup> The known costs of degradation has been quantified at \$1.4 billion annually. Adding a rough estimate of unknown costs such as degradation of ecosystems, fisheries, and increased water treatment; coastal sedimentation and nutrient influxes; loss of environmental and tourism amenity; and loss of biodiversity, carbon stores and damage reserves conservatively brings this to more than \$2 billion per year. Net annual value of farm

production was \$3.9 billion in 1998-99. Virtual Consulting Group and Griffin nrm Pty Ltd, 2000, op cit. This report estimates annual repair costs to be over \$6.5 billion per year.

- <sup>157</sup> Hamilton, C and Thurton, H, *Population Growth and Greenhouse Emissions*, The Australia Institute, 1999.
- <sup>158</sup> Ibid, also at <http://www.tai.org.au/media/PRpercapita.shtml>
- <sup>159</sup> In 1996 the Australian economy was the 20<sup>th</sup> most energy intensive (in rough terms the 20<sup>th</sup> least energy efficient) of 29 OECD countries. In terms of percentage improvements (reduction) in the energy intensities of OECD countries between 1973 and 1996, Australia ranks 17 out of 29 countries. Between 1973 and 1996 the energy intensity of only 2 OECD countries (Australia and South Korea) moved from being lower than the OECD average to higher than the OECD average. International Energy Agency (IEA), *Energy Balances of OECD Countries, 1995-1996*, OECD, 1998 and OECD, *OECD Environmental Data*, 1997.
- <sup>160</sup> Ibid
- <sup>161</sup> OECD 1998 op cit.
- <sup>162</sup> \$14 billion of direct and indirect subsidies per year to natural resource industries that damage the environment (\$5.732 billion financial subsidies and \$7.746 to \$8.866 billion environmental subsidies for 1994). The study excluded subsidies to the mining industry. National Institute of Economic and Industry Research, 1996 op cit.
- <sup>163</sup> National Institute of Economic and Industry Research, 1996 op cit.
- <sup>164</sup> Newspoll done for CSIRO Wildlife and Ecology, quoted in Eckersley, R, *Perspectives on Progress: Is life getting better*, CSIRO Resource Futures Program, Working Paper Series 97/27, 1997.
- <sup>165</sup> See Brain 1999 op cit.
- <sup>166</sup> Hamilton, C and Saddler, H, 1997 op cit.
- <sup>167</sup> Australian Quality of Life Falling, Australia Institute, *Media Release*, 20 November 1997. See also Hamilton, C and Saddler, H, 1997 op cit. Our per capita GDP is higher than ever (in real terms) and has approximately doubled since 1960. In 1995 we rated 15<sup>th</sup> of 25 OECD nations, compared to first in 1870, third in 1900, first again in 1913, fourth in 1950 and ninth in 1973. Our life expectancy is higher than ever – we've added about 10 years since 1910 – but lags behind a number of other OECD largely because of the much lower life expectancy of our Indigenous people. Eckersley 1997 op cit.
- <sup>168</sup> Various international comparative studies of quality of life have been attempted. On the Borda Index of Quality of Life Australia was seventh of 17 OECD countries in 1996. The happy life expectancy survey of the early 1990s concluded that we are fifth of 58 nations surveyed. And in the World Values Survey Happiness Index of 1995-97 we rated fifth of 54 countries. But on the harder data of economic performance we fare worse. The Borda Index of Economic Performance places us 15<sup>th</sup> of 17. The World Competitiveness Index of 1996 puts us 21<sup>st</sup> of 46 nations (and 17<sup>th</sup> in the OECD, having slipped from 13<sup>th</sup> in 1989). Eckersley 1997 op cit.
- <sup>169</sup> Ibid

<sup>170</sup> Ibid

<sup>171</sup> Institute for Social Research, Swinburne Institute of Technology, National Citizenship Project, 1999. Statistical sources: OECD, World Bank, UN Development Program and individual country data.

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