Blueprint
for a living continent

A WAY FORWARD
FROM THE WENTWORTH GROUP
OF CONCERNED SCIENTISTS

1st November 2002

The Wentworth Group is convened by WWF (World Wide Fund for Nature) Australia

Saving Life on Earth

Salinity and deteriorating water quality are seriously affecting the sustainability of Australia's agricultural production, the conservation of biological diversity and the viability of our infrastructure and regional communities.

At least five percent of cultivated land is now affected by dryland salinity – this could rise as high as 22 percent.

One third of Australian rivers are in extremely poor condition, and land and water degradation, excluding pests and weeds, currently costs approximately $3.5 billion per year.

(CoAG Communique, 3 November 2000)

Australians have a big problem - and some big opportunities to make choices about our future.

A group of Australia's leading environmental scientists, who have adopted the collective name of 'the Wentworth Group', are advocating radical and fundamental reform to halt further degradation of Australia's landscapes.

The Wentworth Group

Prof Peter Cullen: freshwater ecologist, Australian Environmentalist of the Year 2001
Prof Tim Flannery: paleontologist, author, Director South Australian Museum
Assoc Prof Ronnie Harding: zoologist, Chair WWF Australia Scientific Advisory Committee
Dr Steve Morton: ecologist, Chief Sustainable Ecosystems, CSIRO
Prof Hugh Possingham: mathematical ecologist, Chair C'wealth Biological Diversity Advisory Ctee
Dr Denis Saunders: ecologist, former Chief Research Scientist, CSIRO
Prof Bruce Thom: geomorphologist, Chair 2001 Australian State of the Environment Committee
Dr John Williams: agricultural scientist, Chief Land and Water, CSIRO
Prof Mike Young: resource economist, Director Policy and Economic Research Unit, CSIRO
Mr Peter Cosier: environmental policy specialist, World Wide Fund for Nature Australia
Ms Leith Boully: farmer, Chair Murray Darling Basin Community Advisory Committee

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Foreword

The environmental forces that have, over the millennia, shaped that very distinctive Australia – from kangaroos to gum trees and Aboriginal cultures – are working on us, shaping our culture.

European heritage left us appallingly equipped to survive, long-term, in this country. It left many colonial Australians unable to see the subtle beauty and biological richness of the land. What they could not understand they strove to destroy as alien and useless.

For most of the last two centuries we have believed that we could remake this continent in the image of Europe – turn the rivers inland and force truculent soils to yield.

There are signs that things are changing for the better.

Australians are undergoing a radical reassessment of their relationship with the land, particularly when it comes to the basics like food, water and fire. Revolutionary changes are taking place in the countryside as farmers and graziers strive to make primary production sustainable in Australia's unique conditions.

Leading the way are people like the Bell family, who run cattle sustainably in the ultra-dry Lake Eyre Basin. These people are my national heroes.

They are throwing out old, inappropriate European-based practices and inventing their own, distinctively Australian futures in a bid to create sustainability in this land.

I have no doubt that today many farmers are ahead of the majority of Australians in most aspects of environmental thinking.

When James Cook sailed up the east coast of Australia in 1770, he remarked that the land looked like a gentleman's park. And indeed it was, for those eucalypt groves set in grassy plains were the result of 45,000 years of careful management by Aboriginal people.

They, just like the Europeans, irrevocably changed the land when they first arrived – but thereafter they crafted it with fire and hunting, creating something new. It was this 'something new' that we now recognise as the distinctive Australian landscape.

Thus in a very real sense, this land is human-made – a handicraft of the Aboriginal people.

Three human lifetimes – about 214 years – is simply not long enough to become truly adapted to Australia's unique conditions, for the process of co-evolving with the land is slow and uncertain.

Yet it has begun, and the transformation must be completed, for if we continue to live as strangers in this land – failing to understand it or live by its ecological dictums – we will forfeit our long-term future here by destroying the ability of Australia to support us.

Tim Flannery
Australia Day, 2002

Blueprint for a Living Continent

A WAY FORWARD FROM THE WENTWORTH GROUP OF CONCERNED SCIENTISTS

SUMMARY

The drought gripping much of Australia may bring long-lasting damage to the Darling and Murray Rivers and their communities later this year. In other parts of the nation, drought will cause serious damage to long-term productivity.

As has always been the case, this drought will also place considerable hardship on some rural communities. We sympathise deeply with the plight of farmers and rural communities under these conditions.

In the face of such a terrible drought we have heard calls for drought-proofing Australia and turning our coastal rivers inland.

Australia cannot be drought-proofed.

What we need to do is to start living sustainably in Australia. We need to learn to live in harmony with the landscape, not fight against it.

As a nation we have grown wealthy on the food and fibre produced by extraordinarily hard working and innovative farmers. We have all shared in that wealth and we expect to continue to benefit from it.

Yet it is time to give something back to the landscape and to the people who manage it. Our land management practices over the past 200 years have left a landscape in which freshwater rivers are choking with sand, where topsoil is being blown into the Tasman Sea, where salt is destroying rivers and land like a cancer, and where many of our native plants and animals are heading for extinction.

On the 23rd October 2002 one dust-storm crossed the Australian continent and blew away an estimated 7 million tonnes of irreplaceable topsoil.[1]

We are taking more resources from our continent than its natural systems can replenish. That, by any definition, is unsustainable.

The current crisis is an opportunity to design a new way of doing business to build resilience into rural and regional communities, enabling them to cope with the variability of our climate.

This paper is about providing a new direction. We have sufficient knowledge now to set a new direction that will involve a change in land use towards practices that are in harmony with the highly variable climate that is intrinsic to Australia. Such a direction could see the farming community walking in partnership with science.

If we get it right, Australia will continue to produce food and fibre for us and for the rest of the world. If we fail to act, history will judge us harshly.

Considerable change is needed - and Australian farmers have demonstrated an extraordinary capacity to change. Further, our governments have, in recent years, supported three important foundations for this change:

- Landcare was established in 1990 by Prime Minister Hawke, and has captivated rural and urban Australians alike;

[1] The Australian 24th October, 2002

- the $2.5 billion Natural Heritage Trust was established in 1997 by Prime Minister Howard, which provided a huge financial boost; and
- in 2000, the Prime Minister, Premiers and Chief Ministers signed the National Action Plan for Salinity and Water Quality, aimed at reforming the institutional arrangements for managing the Australian landscape.

A fourth foundation is needed that protects and rebuilds our landscapes. We need a delivery mechanism that will transform Australia's landscapes, rivers and the communities that depend on them.

There are real opportunities for corporate Australia to invest in this process and to contribute to landscape scale transformation.

Blueprint for a Living Continent sets out what we believe are the key changes that need to be made now, to deliver a sustainable future for our continent and its people. To live in harmony with the environment there is a need to:

1. Clarify water property rights and the obligations associated with those rights to give farmers some certainty and to enable water to be recovered for the environment.
2. Restore environmental flows to stressed rivers, such as the River Murray and its tributaries.
3. Immediately end broadscale landclearing of remnant native vegetation and assist rural communities with adjustment. This provides fundamental benefits to water quality, prevention of salinity, prevention of soil loss and conservation of biodiversity.
4. Pay farmers for environmental services (clean water, fresh air, healthy soils). Where we expect farmers to maintain land in a certain way that is above their duty of care, we should pay them to provide those services on behalf of the rest of Australia.
5. Incorporate into the cost of food, fibre and water the hidden subsidies currently borne by the environment, to assist farmers to farm sustainably and profitably in this country.

The Council of Australian Governments has the opportunity to make three significant changes immediately, by ending broadscale clearing of remnant vegetation, by requiring the clarification of water property rights, and by agreeing to purchase urgently needed environmental flows for the Murray River and its tributaries.

Achieving reform also requires fundamental changes in our approach to engaging with farmers and rural communities:

1. It is vital that we cut the bureaucratic red tape that is strangling on-ground action in Australia by:
   - creating accountable institutions that are owned by rural communities most affected by the problems;
   - providing funding directly to farmers and regional communities to help them implement nationally accredited priorities, supported by world class scientific advice; and
   - establishing a business-like national Natural Resource Management Commission (the environmental equivalent of the Productivity Commission) to oversee this process.
2. There is also an urgent need for a National Water Plan focusing on improving the health of our damaged rivers, protecting our remaining healthy rivers and improving water use efficiency across Australia.

- Despite water being our most scarce natural resource, we treat rivers as drains. If we keep doing this, neither our rivers nor the rural communities who depend on them have viable futures. Everything we do in the landscape impacts in some way on water quality – even in the driest parts of the continent.

3. To implement these steps it is vital that Commonwealth and State governments signal an in-principle, long-term commitment to an investment strategy to help the restoration work over the next 10 to 20 years, so that regional communities can face the challenge with confidence that the nation is behind them.

    - Recent studies commissioned for the Business Leaders Roundtable and others suggest that a public investment of $20 billion is required over that timeframe[2].

As Dorothea McKellar put so simply and eloquently[3], Australia is a land of drought and flooding rains. We must learn to live with this legacy.

By giving power back to our communities, valuing the ecosystem services provided by native vegetation, recognising the importance of environmental flows in our rivers, and rewarding people for environmental stewardship, our generation can leave a legacy of living rivers and healthy landscapes, not drains and dustbowls.

Our continent is falling apart and it is not caused by drought – it is caused by poor policies and poor management.

We don't have all the answers – nobody does – but before we start laying bricks and mortar, we have got to get the foundations right, otherwise the cathedral will tumble with the smallest of tremors.

This blueprint is about another important step towards getting the foundations right.

[2] Allen Consulting Group (2001) Repairing the Country: Leveraging Private Investment, for the Business Leaders Roundtable; and Virtual Consulting Group and Griffin NRM (2000) Repairing the Country: a National Scenario for Strategic Investment, prepared for the ACF/NFF and the National Land and Water Research and Development Corporation, Canberra

[3] from *I Love a Sunburnt Country* by Dorothea McKellar

INTRODUCTION

Australia is the driest inhabited continent on Earth. It also has the most variable climate.

Australia is also the most ancient continent. It is an old and weathered landscape and much of it is very flat, with a salt inheritance buried deep within it.

Australian is an island continent, and has been since it broke away from Gondwana over 40 million years ago.

These three elements - our arid climate, our ancient soils and our evolutionary history - make Australia unique.

The agricultural management practices we have imposed on this continent were developed to suit a much different place - wet, fertile landscapes.

The National Land and Water Resources Audit tells us that in 1996-7, the gross value of agricultural production was $28 billion.[4] Half of the profits came from irrigated agriculture, which takes up half of one percent of the land area.

Today, however, much of our agriculture is economically marginal and depends on acceptance of high levels of natural resource degradation: to our rivers, wildlife, wetlands, estuaries and coastal waters, including the Great Barrier Reef.

This blueprint seeks to put in place the foundation arrangements necessary to produce a different agricultural system for Australia - one that is in harmony with its environment and able to support viable rural communities.

WATER RIGHTS AND RESPONSIBILITIES

The history of water development in Australia is a history of articulate interest groups seeking to have water used for their advantage.

Many of our water management strategies have caused great damage, nowhere more so than the Murray-Darling Basin where extraction for irrigation has led to 80% of the median flow being diverted for consumptive uses.[5]

By trapping winter streamflow we have starved the river of flow in winter and turned it into an irrigation channel in summer, reversing the natural flow pattern. We have built weirs to help distribute the water - which turned out to provide ideal habitat for blue-green algae and carp. We have isolated the river from its floodplain, which has had massive impacts on native fish and birds, as well as the River Red Gum forests.

In 1994 Australian State and Federal Governments[6] agreed that reform was required to address the economic, environmental and social implications of water use.

These reforms led to the establishment of a water market, which has seen a dramatic increase in the price of water and the expansion of irrigation. In 1970 a water licence in Moree in Northern NSW sold for under $30 but now trades for $1.4 million.[7]

In 1997 the Murray-Darling Basin Ministerial Council capped extraction of water from the system at 1993/4 levels to protect existing user security. This was a good first step, but we now know that these levels are inadequate to secure the long-term health of the Basin.

The Ministerial Council is now debating about how much water should be returned to the Murray. Even the highest quantity being discussed (1500GL) – the approximate equivalent

[4] National Land and Water Resources Audit Report (2002) "Australians and Natural Resource Management 2002," Canberra.
[5] Murray Darling Basin Commission, (1999) The Salinity Audit of the Murray Darling Basin
[6] Council of Australian Governments (1994) Communiqué, Report of the Working Group on Water Resource Policy
[7] Cullen (2002) Address to the Corowa Centenary Celebration Dinner, April 2002

of a 20 percent reduction in water diverted for irrigation across the southern connected River Murray system – is only given a 'moderate' chance of restoring the Murray to a healthy working state.[8]

In rural Australia, water is wealth. Several of our water systems are seriously over-allocated. As a result of this over-allocation, we now see interest groups fighting over access rights. There is only one cake. If one person wants more someone else must get less. As systems are brought into alignment with capacity, the issue of who takes the cut has to be resolved. Do those who take the cut have a right to compensation? If so, is it from other irrigators, or is it from the Governments that have failed to keep entitlements within capacity?

This needs to be sorted out through a National Water Policy.

Core to such a policy is the need to define water property rights. Uncertainty over water property rights and their associated obligations inhibits on-farm investment, stifling regional development and innovation in water use. It also stifles urgently needed reforms to get more water back into our rivers to improve their health.

We argue that such a framework should take established ideas from the Torrens title for land, and the idea of shared ownership from company legislation, along with newer ideas from internet banking and risk assignment.[9]

The basic water right should be a right to use a proportion of the available water, for a finite time, so that we can adjust to varying climatic situations, and adjust water supply as our understanding grows.

In the Murray Darling Basin alone there are 20 different water products in the market, all with different security of supply and hence different values, causing conflict and confusion. We need a clear exchange mechanism so we can have a common currency, otherwise we will repeat the mistake of a century ago when we built railway lines with different gauges.

The current system is so seriously flawed that if 10% of existing water licences were acquired through an open market, the result in 10 years time, despite the cap, could be less, not more water in the River Murray. This is because irrigators are being allowed to keep the allocations liberated by increasing water use efficiency without accounting for the amount that no longer returns to the river. Under the current system, every time one irrigator improves water use efficiency, either another irrigator downstream or the environment must give up more water.

Rather than trying to use one instrument to control everything, water licences should therefore be separated into their component parts:

- each water user would receive a proportional share for access to the resource, along with a clear statement of reliability and the risk of change without compensation;
- a transparent set of accounts that make it clear how much water may be extracted from the river or traded at any point in time; and
- a licence specifying the conditions under which water may be used and the obligations associated with that use.

Under such a policy, with water rights would come responsibilities. Those who do have a right to use water should have no guaranteed right to return water back to the system in a lesser condition than they took it. Similarly, they should have no right to irrigate in a manner that causes water logging, salinity and other problems.

When society allocates water, we need a system that covers surface runoff, water in the rivers and groundwater in an integrated way.

[8] Murray Darling Basin Ministerial Council (2002) The Living Murray: A discussion paper on restoring the health of the River Murray, Canberra.

[9] Young, M. D and McColl, J.C. (2002) Robust separation, Policy and Economic Research Unit, CSIRO Land and Water, Adelaide.

Pollution licences should be used in rural Australia so that those not using best practice pay a price for the sediment, salt and nutrients they release into the environment. Good farmers, using best practice, would not pay anything.

Conversion to a new system of water trading could be phased in over three years, with transitional assistance payments made available on a declining scale over the three years. From 2006, water trading could be limited to those with water.

It is essential that we resolve these policy issues before we invest further in new infrastructure, otherwise we will repeat the mistakes of the past and erode the reliability of entitlements and the health of our rivers.

When we examine infrastructure proposals we must ensure the principles of CoAG water reforms are implemented and ensure cost-effective investment, environment sustainability and equity to all stakeholders.

ENVIRONMENTAL FLOWS

> *"There are clear market failures in that the costs of degradation to downstream users and to the environment, where known, are not borne by those benefiting from the upstream exploitation of the landscape. In many cases the costs will be borne by future generations."*[10]
>
> Report to the Prime Minister's Science, Engineering and Innovation Council, 1998.

Many of Australia's river systems have been over-allocated. The lower Murray River now effectively experiences drought conditions one year in two, whereas under natural conditions it was one year in twenty. In the internationally listed Narran Lakes, flooding frequencies have extended from one in two years to as much as one in six in just the last 5 years, outside of the lifecycle of many waterbirds.

If nothing is done, reduced flows and increased salinity will result in Adelaide's main water supply failing World Health Organisation Standards two days in five within 20 years.

The 1999 Salinity Audit of the Murray-Darling Basin[11] also showed high salinity levels in many of the tributaries of the Basin. The Border Rivers, Bogan, Condamine-Balonne, Macquarie, Namoi and Warrego Rivers are all expected to exceed World Health Organisation drinking levels within 20 years, and the Lachlan and Castlereagh rivers within 50 years. The Avoca and Loddon Rivers in Victoria already exceed this level.

One of the symptoms of over extraction of water is the imminent closure of the mouth of the Murray River.

Right now we have employed an 'engineering fix' to dredge the mouth to keep it open in the hope of avoiding an ecological catastrophe to the internationally listed Coorong National Park. How many dredges would we need to clean out all the damaged rivers in the Murray Darling Basin?

The increasing salt loads in our rivers are not being washed out to the sea. Rather, it is spread onto our productive farmland in the irrigation water. Engineering fixes are being employed along the Murray to remove the salt before it reaches the river by diverting it into large evaporation basins.

Engineering fixes address symptoms, not causes.

[10] Cullen et al, (1998) Dryland Salinity and its Impact on Rural Industries and the Landscape, an independent report to the Prime Minister's Science, Engineering and Innovation Council. CSIRO and Environment Australia, p11

[11] Murray Darling Commssion (1999) The Salinity Audit of the Murray Darling Basin

It is obvious that environmental flows need to be increased. Rivers, like the River Murray, are not working. It is time to begin the process of recovering water from irrigation.

Recovering water for the environment

Once interests in water have been properly defined and obligations fully specified, there are three broad approaches for recovering water for the environment:

- take it by reducing allocations without compensation;
- buy it, by providing compensation or purchase on the open market; or
- save it, by improving infrastructure to reduce evaporation from supply systems.

We suggest a mixed approach involving transitional assistance payments in over-allocated areas to facilitate the progressive reduction of the cap at say, 1% per annum for at least 10 years.

At the same time, farmers who are the beneficiaries of subsidised public water could also be required to demonstrate an efficiency dividend by reducing water usage. This would encourage improvement of on-farm infrastructure and irrigation practice and would ensure that saved water is returned to the environment, not used to irrigate additional land.

An audit of evaporation losses in supply and distribution systems would identify opportunities associated with the last option.

Increasing the efficiency of water use through lining or piping of channels could reduce up to 25 percent of water transmission losses currently within the system.

While reduction in transmission losses increases the opportunity to manage water and, in particular, to reduce salinity impacts, some transmission losses after returning to the river are used by other irrigators. Distribution, surface and groundwater and overland flow systems need to be managed as an integrated whole. When transmission losses are 'saved' another irrigator may lose an opportunity.

In over-allocated systems, supply and distribution system savings that are paid for by taxpayers should be returned to the environment, not pocketed by private interests.

Under current water licensing arrangements, property rights are so poorly specified that any attempt to source water for the environment may make the situation worse rather than better.

We therefore encourage the Council of Australian Governments (CoAG) to commit to converting existing water licence systems to one system that is robust enough to provide additional environmental flows to stressed rivers through the provision of transitional assistance payments (probably in the order of $100 million).

In the Murray Darling Basin, we suggest that CoAG agree to reduce irrigation licences by one percent per annum for the next 10 years and immediately provide an additional $300 million to begin securing water for environmental flows early next year. An additional $300 million should be sufficient to secure 425 GL of water which is needed to help keep the Murray mouth from closing[12].

[12] Anon, (2001) Coorong and Lower Lakes Ramsar Management Plan, South Australian Government, Adelaide

Managing environmental water

Environmental water does need to be managed.

It needs a share of the storage capacity of reservoirs and needs an intelligent manager to release water to provide desired environmental outcomes.

We suggest that one or a number of independent corporations be established to buy water in the market, invest in infrastructure to reduce wastage and return the savings to the environment.

The beauty of a corporation model is that corporation law requires the directors to act in the interests of the corporation. Management of environmental water needs to be separated from management of water for consumption. This would overcome the self-interest of large water businesses.

Conserving heritage rivers

It is equally important is that we ensure the few undamaged rivers left on this continent remain protected – rivers like Cooper's Creek, the Paroo, the Fitzroy River in Western Australia and the Ovens in Victoria.

A system of designation in perpetuity such as we have developed for National Parks and Nature Reserves is an essential step to long term protection of these systems[13].

The major threatening process that must be controlled is the extraction of water from these rivers.

The recent report to the Prime Minister's Science, Engineering and Innovation Council[14] on *Sustaining our Natural Systems and Biodiversity* called for the establishment of a Heritage River system to protect these rivers.

Under such proposed designation, existing users would maintain existing levels of extraction of water and catchment development.

Smart water management

In addition to securing more water for the environment there are a number of other opportunities to improve water management. We offer three pathways for improvement.

1. **Benchmarking:** benchmark the performance of irrigation water suppliers and industries so that performance can be compared.

   Benchmarking has already been undertaken in the urban water industry (and in some rural areas) and has provided useful pressures on under-performers to lift their game. The same pressures should be encouraged for the rural water industry.

2. **Improved regulation** – A strong regulatory framework is critical to encouraging innovation and economic efficiency in the industry.

   The industry at present has four disconnected regulatory systems covering service provision, human health, environmental and pricing aspects.

   Standards would be specified in terms of outcomes rather than procedures to allow water businesses to be innovative in achieving these standards.

[13] Cullen et al, (1998) Dryland Salinity and its Impact on Rural Industries and the Landscape, an independent report to the Prime Minister's Science, Engineering and Innovation Council. CSIRO and Environment

[14] Morton *et al*., (2002) Sustaining our Natural Systems and Biodiversity: An independent report to the Prime Minister's Science, Engineering and Innovation Council. CSIRO and Environment Australia, Canberra.

3. **Making better decisions** – Most of the stakeholders in the water industry want to protect river health, but until recently we have not had effective means of measuring river health.

   A bigger investment is required to support industry's requirements for the generation and delivery of new information and ideas.

4. **Capping the Great Artesian Basin** – We must stop squandering the precious waters of our Great Artesian Basin. Governments have made available assistance to help landholders with capping and piping of bore water. We suggest aiming to complete this process by the end of 2005, perhaps by forecasting penalties such as loss of rights of access to the groundwater or blocking of bores.

LANDCLEARING AND LANDSCAPE REPAIR

> "… *it is cheaper to maintain natural systems than it is to pay the repair bill resulting from inadvertent or careless damage or to suffer the resulting loss of production."* [15]
>
> Report to the Prime Minister's Science Engineering and Innovation Council, 2002

Landclearing

Landclearing is a major driver of ecosystem damage that leads to dryland salinity, declining water quality and species extinction. It also releases vast amounts of greenhouse gases:

- by 2050, 17 million hectares of Australian farmland and remnant bushland will be at risk from salinity – equivalent in area to three quarters of Victoria;[16]
- one in five native bird species is threatened with extinction[17] and most of our woodland bird species are in rapid decline;[18] and
- about 50,000 km of streams have been degraded by sand deposition and sediments are moving off hill slopes much faster than soil is formed[19].

In recent decades, the rate of landclearing has accelerated, with as much land cleared during the last 50 years as in the 150 years before[20].

You can understand how these mistakes were made decades ago, but it beggars belief that we are still making the same mistakes today.

This month one dust-storm crossed the Australian continent and blew away an estimated 7 million tonnes of irreplaceable topsoil.[21]

It is neither in the farming community's medium or long-term interest nor in the interest of the broader Australian community for the current levels of clearing to continue.

Stopping broadscale clearing of remnant native vegetation will stop further damage being done to the Australian landscape.

For example, a significant part of the recharge to the Great Artesian Basin occurs beneath areas of the woodlands of the Desert Uplands in central and north Queensland. Clearing

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[15] Morton *et al.*, (2002) Sustaining our Natural Systems and Biodiversity: an independent report to the Prime Minister's Science, Engineering and Innovation Council. CSIRO and Environment Australia, Canberra.

[16] National Land and Water Resources Audit Report, (2002) Australians and Natural Resource Management, Canberra.

[17] Garnett and Crowley (2000) The Action Plan for Australian Birds, Environment Australia, Canberra.

[18] Ford, Barrett, Saunders and Recher (2001) Why have birds in the woodlands of southern Australia declined? *Biological Conservation* 97(1):71-83

[19] Australian State of the Environment Committee (2001) Australian State of the Environment 2001, CSIRO, Canberra, p11.

[20] Australian State of the Environment Committee (2001) Australian State of the Environment 2001, CSIRO, Canberra

[21] The Australian, 24th October, 2002.

and damage to the infiltration properties of these fragile soils and streams will affect the recharge mechanisms of the Great Artesian Basin.

In 1997 State and Federal governments agreed to reverse the decline of native vegetation by 2001[22]. Since then landclearing rates have accelerated.[23]

In 2001 an estimated 687,800 hectares (6,878 square kilometres) of bushland was cleared across Australia - approximately two thirds of which is remnant bushland.[24] This is the equivalent to 50 football fields being cleared every hour.

Australia's rate of landclearing is only exceeded by four countries: Brazil, Indonesia, DRC (Congo) and Bolivia[25].

Most landclearing is taking place in Queensland, New South Wales and Tasmania.

We welcome the statement by Queensland's Premier Beattie, when addressing the Salinity Summit in Brisbane in August that: *"Those of us in government would be culpable if we did not make an all-out effort to head off salinity in the Queensland Murray Darling Basin knowing what we know today*", but much more needs to be done.

In New South Wales there are currently 705 cases of alleged breaches of native vegetation laws[26] and there have been only two prosecutions.

In Tasmania, despite highly visible signs of rural landscapes suffering extreme environmental stress, and despite promises made as far back as 1997, the government has still not implemented adequate legislation to control landclearing.

Relative to the other natural resource management challenges facing Australia, stopping overclearing of native vegetation is a relatively easy task – and the long-term benefits are enormous.

Clear distinction needs to be made between the need to stop broadscale clearing of remnant native vegetation and the need to control shrub invasion in the semi-arid and arid pastoral areas of Australia. This part of Australia has been managed by indigenous Australians for 45,000 years, using fire. Since European settlement these fire management practices have changed which is causing environmental damage in some areas. Landscapes such as the Mulga lands in western Queensland have changed so much because of the lack of vegetation management, such that production and conservation values are now being compromised.

The Wentworth Group believes that stopping the broadscale destruction of remnant native vegetation is the single most important action the Queensland, New South Wales and Tasmanian governments can take to protect the future of Australia's landscapes.

If these States show such leadership, we would encourage the Commonwealth to provide matching financial assistance to ensure these controls are implemented in a manner that is fair to farmers – because it is in the national interest for this to be done.

If they choose not to act, we believe that the time has come for the Commonwealth to consider withholding financial assistance from the Natural Heritage Trust and National Action Plan for Salinity and Water Quality to government agencies in these States. Taxpayers should not be expected to support bad land management policies.

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[22] Commonwealth/State Natural Heritage Trust Partnership Agreements, 1997

[23] Australian Bureau of Statistics (2002) Measuring Australia's Progress.

[24] QCC; ACF; TWS, October 2001: New data reveal Australian landclearing rates 22% worse.

[25] Australian State of the Environment Committee (2001) Australian State of the Environment Report, p74.

[26] NSW Audit Office (2002) Performance Audit Report: DLWC: regulations regulating the clearing of native vegetation, p45.

Farming without harming

The development of new farming systems that do not harm the environment while generating income to support communities must be an urgent goal for rural Australia.

Australia's geological history has created a unique, very ancient, very flat continent that has accumulated enormous amounts of salts in the soils, lakes and groundwater.

Our current farming systems, based around annual crops and pastures, do not work well in such a landscape. They leak too much nutrient and water past the roots of the plants and release too much carbon into the atmosphere, depleting the low stores of soil organic matter.

The consequence is that much more water enters into the landscape than drains from it. Groundwater rises as the landscape fills with water, causing the salt stores to move, salinising valley floors, rivers and wetlands. The leakage of valuable nutrients accelerates acidification and releases nutrients into rivers and waterways. Meanwhile the loss of soil carbon drives physical, chemical and biological degradation of the soil.

The essential design criterion of sustainable farming is to ensure that present-day flows of water, nutrient, carbon and energy match the magnitude of these flows that evolved to suit the way our landscape functions. This will require radical change to land use, incorporating the following features:

- commercial tree production for large areas of the current crop and pasture zones of the continent to produce fruits, nuts, oils, pharmaceuticals, bush foods and forestry products such as specialty timbers, charcoal, and biomass energy;
- new farming systems made up of the best current annual and perennial plants, the best agronomy, companion plantings, rotations and combination;
- new forms of cereals, pulses, oilseeds and forages selected or bred for characteristics that substantially reduce deep drainage and nitrogen leakages; and
- the re-assignment of land so that in suitable parts of the landscape productivity is enhanced whilst other parts are removed from production.

Farm forestry, new agricultural production systems, and restoring native vegetation present opportunities to restructure the landscape with vegetation that has a similar water use pattern to the original native vegetation, with the potential for substantial amelioration of the impending problems.

A substantial research effort is needed to develop these and other ideas for redesigning our farming systems and their integration into the landscape.

Repairing Degraded Landscapes

Just as there is a need for clearly defined property rights in water, so there is a need for the clear definition of property rights associated with land use and land development.

By clear definition, we mean the clear and unambiguous definition of landholder obligations and duties to care for the environment without recompense. The definitions used should facilitate periodic review and adjustment as circumstances and knowledge change.

Stopping landclearing helps stop the problem getting worse, but it does nothing to restore the fragmented landscapes that are already overcleared.

As a result of land degradation, two-thirds of landholders report that their property values will decline by up to 25% over the next three to five years[27].

[27] Allen Consulting Group (2001) Repairing the Country: Leveraging Private Investment, for the Business Leaders Roundtable, p2.

An economic analysis of some farming properties in western NSW has found that the optimal level of native vegetation on a farm in that district – from an economic perspective based on today's markets – is a 34% vegetation cover[28]. Very few farms in southern Australia would go close to this level of cover.

We should be turning overcleared farmland into bushland – for economic as well as ecological reasons.

Whilst this study shows what is in the farmer's self interest, it is likely that a higher level will be needed to protect the broader regional landscape from long-term damage. It is also likely that this figure will differ significantly in different landscapes – lower in some regions, higher in others.

What this landmark study does highlight is the role native vegetation plays in providing the essential ecosystem services such as pest control, protection from wind erosion during drought, clean water and healthy soils, that underpin Australia's agricultural resource base.

The report to the Prime Minister's Science, Engineering and Innovation Council[29] earlier this year argues that we have to stop seeing biodiversity as a museum collection of cute and interesting creatures and start recognising that it underpins the so-called free ecosystem services on which our entire agricultural sector depends.

Biodiversity conservation is more than an environmental objective – it is the keystone on which a sustainable future for this continent is based.

We need to invest in landscape scale, regional recovery plans across the overcleared landscapes, by stitching back isolated patches of remnant bush, and by revegetating river corridors and recharge areas.

It should be possible, for example, to fence-off the vast majority of the 20,000 kilometres of rivers in the Murray Darling Basin, for less than a quarter the cost of extending the MCG for the 2006 Commonwealth Games[30].

Five years ago the science needed to allow this restoration task to begin did not exist. It does today.

A few innovative projects are already beginning to evolve across Australia with this challenge in mind: in the Mount Lofty Ranges; in parts of the Western Australian wheatbelt; in the grazing lands of south-east Queensland; and in Victoria's western districts.

It is a challenge many farmers in rural Australia are keen to accept – but they need scientific support and they need financial resources from the rest of Australia to achieve this outcome. This issue is addressed later in this paper.

[28] Walpole (1999) Assessment of the Economic and Ecological Impacts of Remnant Vegetation on Pasture Productivity. *Pacific Conservation Biology* 5(1):20-35.

[29] Morton *et al. (*2002) Sustaining our Natural Systems and Biodiversity: an independent report to the Prime Minister's Science, Engineering and Innovation Council. CSIRO and Environment Australia, Canberra.

[30] Premier Bracks, 14th August, 2001: $400 million redevelopment announced.

IMPROVING MARKET SIGNALS AND PAYING FARMERS FOR ENVIRONMENTAL SERVICES

> "*Degradation of natural systems occurs because our economy makes it cheaper to degrade Australia than to look after it. The market signals are back to front.*"[31]
>
> Report to the Prime Minister's Science Engineering and Innovation Council, 2002

Many markets encourage degradation. Responding to the signals, households use water inefficiently, farmers cause salinity, and stormwater pollutes estuaries.

The pricing signals that guide resource use are back to front. It is cheaper to be bad than it is to be good.

To live in harmony with the Australian landscape we must learn to appreciate the services it provides us. Things like clean water, fresh air, healthy and productive soil. The value of these ecosystem services is enormous, but is often almost invisible because we haven't learnt to see it.

In many places, the economic benefits of agriculture are actually less than the value of ecosystem services lost because of these practices.

Imagine what would happen if we valued our ecosystems and landscapes as if they mattered. Imagine what would happen if good environmental managers had the advantage and bad environmental managers were penalised.

We need to change how we farm - reversing the onus of responsibility and creating opportunity - by improving economic signals and support.

The direction for the future will involve three essential elements:

- we need to provide financial support to landholders who supply environmental services to the rest of the community because this will often involve reduced income for farmers – at least in the short to medium term;
- we need to change our institutions to remove the hidden 'environmental subsidies' to agriculture, where farmers impose costs on other people or future generations. These subsidies generally benefit consumers – not farmers – through lower prices, and often hurt farmers who are trying to be sustainable by making them compete with others who are not paying the full costs of their actions; and
- we need to ensure our tax systems support sustainability and send the right signals to farmers and the wider community.

Together these elements will harness Australia's tradition of innovation, and direct it towards developing new commercial land uses that are well adapted to Australian circumstances.

Supporting ecosystem services

We need to provide financial support to landholders who supply environmental services to the rest of the community above agreed definitions of duty of care. This is important because providing additional ecosystem services will often involve reduced income for farmers – at least in the short to medium term.

Less intensive farm practices may be required, additional trees may need to be planted, land may need to be taken out of production and returned to bush, and river setbacks established. Where such changes are necessary, adjustment assistance that speeds the rate of structural adjustment can be justified.

[31] Morton et al. (2002) Sustaining our Natural Systems and Biodiversity: an independent report to the Prime Minister's Science, Engineering and Innovation Council. CSIRO and Environment Australia, Canberra, p15

Where ongoing work above that required of all landholders in a region is required, payments that reimburse farmers for the ongoing costs of this work can be justified.

Whilst we expect farmers to accept a duty of care to protect the environment, it is not fair to expect them to bear all of the costs when the benefits of their actions accrue to others. Paying for the delivery of such services is not 'farm welfare', it is recognising the value of these services. An innovative approach being trialled by the Victorian Government is the auctioning or tendering for farmers to provide ecosystem services – through their Bush Tender scheme.

The values involved are often very large. One way of estimating ecosystem service values is to consider what it would cost to provide them in other ways. Clean water, for example, can be made available by using pumps and screens and filters in place of good catchment management. Where such 'technological solutions' exist, they are usually 10 to 100 times more expensive than maintaining ecosystems.

New York City recognised this when then they saved more than $15 billon by avoiding the need for building new filtration facilities by paying for improved catchment management practices in the Catskill Mountains upstream from the city, and by changing the way land in that region can be developed and used for agriculture. Under current projections, increasing stream salinity in the Murray River is projected to raise water quality costs in South Australia by $17 million a year if action is not taken.[32]

Eliminating hidden environmental subsidies

Allowing unsustainable resource use runs down our natural capital and hides the true costs of producing food, fibre and water in Australia. Eliminating these 'environmental subsidies' would encourage sustainability by helping ensure that people bear the real costs of their consumption decisions.

Because the actions and changes to achieve this transition will need to be decided at a landscape or catchment scale, the burden will not fall evenly on all farmers. Some farms need to be taken out of production and returned to native vegetation, while others may be able to continue with little or no change. Public funds should be provided to farmers where the impact on their property is greater than the standard for the region as a whole; and farmers who are below the necessary regional standard should be required – by regulation if necessary – to come up to those standards over time.

In the western NSW example we gave earlier, farmers could be paid to manage native vegetation on their properties when it is needed for broader regional conservation objectives and where these objectives mean the level exceeds the 34% on-farm duty of care. Properties below this threshold should be required to reach that standard over say 5 years. In order to achieve the transition within 5 years, public funds could be provided to assist in the restoration – fencing, revegetation, weed control.

In the longer run, hidden subsidies induce poor farming practices that, while they may provide short-term benefits for individual farmers, tend to have longer term costs for the farming community as a whole.

No one really gains from environmental damage: we only shift costs onto others and to future generations.

[32] Allen Consulting Group (2001) Repairing the Country: Leveraging Private Investment, prepared for the Business Leaders Forum, Canberra p.56

Improving tax and price signals

The December 2000 House of Representatives Inquiry into Catchment Management recommended introducing an environmental levy to pay the public contribution to restoring Australia's catchment systems.

We know that such levies are not popular but we have seen the willingness of Australians to accept them when they are seen to be in the nation's interest –the gun buyback scheme for example. Provided Australians can see that the money is going to produce an outcome they support, an environmental levy is an option that may well be supported.

The Wentworth Group is not advocating another new tax, but we are arguing that a major investment of public capital is needed if we are to restore the degraded parts of our landscape. The reality is quite simple – we cannot fix our environmental problems by wishing them away and we can't expect our farmers to pay the full cost of repairing past mistakes. Our nation was built on the back of our rural industries and all Australians have benefited, not just farmers.

The tax system is also a powerful force. Tax measures can be used to raise awareness, support actions that provide public benefits, and provide revenue.

There are substantial opportunities to provide tax incentives to promote accredited investments in land repair and sustainable resource use. It is estimated that these incentives could result in at least $3.50 in private investment for every dollar of tax revenue foregone.[33]

This 'investment leveraging' approach would also encourage the development of new commercial land uses with demonstrated environmental benefits – a key part of any long-term solution.

In recent years, the Commonwealth Parliament has made a number of significant changes to improve tax signals. In particular:

- farm management deposits have been introduced;
- donations of land, water and other forms of property as well as money to environmental organisations have been made deductible;
- allowing donations for conservation to be spread over 5 years; and
- allowing a tax deduction for any reduction in land value when a landholder places a conservation covenant on their land.

More changes are needed:

- providing capital gains tax relief for donations of property with conservation covenants;
- allowing deductions for the discounted sale of a property for conservation;
- encouraging donations of 'living bequests'; and
- treating conservation expenditures in the same way as a gift of a conservation covenant.[34]

An additional way of changing market behaviour might be to add a one per cent levy onto income tax and give this increase back as a rebate to those who are looking after the environment. This would mean a $114 environment levy for someone earning $50,000.

The primary purpose of this levy would not be to raise revenue – it would be aimed at raising awareness and changing behaviour. People on low incomes and who are least able to afford the tax could be exempted or compensated in some other way.

A simple low cost rating system could be established. To get the $114 back, you would need

[33] Allen Consulting Group (2001) Repairing the Country: Leveraging Private Investment, prepared for the Business Leaders Forum, Canberra.

[34] Allen Consulting Group (1999) Philanthropy: Sustaining the Land, Canberra

to demonstrate you are part of the solution instead of being part of the problem. Similarly, if your farm business gets a five star rating by meeting catchment and regional targets you would get the money back.

Ideas such as these use market signals to inform people of the nature of the costs they are imposing on others, and the benefits they could be providing. It is also possible to consider whether or not full primary producer taxation status should be given to farms that do not hold at least a three star rating.

Off-farm impacts could also be recognised through rate rebates or surcharges and catchment levies, or other tax measures such as the deduction introduced in 2001 by the Federal Parliament for establishing a conservation covenant.

Instead of subsidising farmers for bad investment decisions, we should be building on the Australian rural industry's long tradition of innovation. We can do this by developing new market based instruments to encourage environmental innovation, such as a Land Repair Fund and other measures recommended in *Repairing the Country: Leveraging Private Investment*[35].

Another significant barrier to better environmental performance is that many financial analysts think that environmental risks are not material to company financial performance. Our financial institutions are beginning to think about this issue by giving more attention to the long-term benefits of good environmental practice and the long-term risks of bad practice when making investments or assessing loans.

INVESTING IN SCIENCE AND PEOPLE

There has been a profound attitudinal change in Australia about the way we are treating our landscapes.

But despite this success, the reforms developed through Landcare, the Natural Heritage Trust and the National Action Plan for Salinity and Water Quality have stalled.

They have stalled because the support base needed by farmers has been stymied by bureaucracy.

Despite the rhetoric, integrated catchment management is not being adopted. Despite the rhetoric, communities continue to be consulted rather than engaged. And despite the promises, most funding programs are not delivered at the regional level and are out of touch with regional needs.

In October 2000, the Premiers and Prime Minister signed the CoAG National Action Plan for Salinity and Water Quality to implement profound changes in the way we manage our landscapes.

The intention of the National Action Plan was to invest greater powers in regional communities to work with scientists to develop solutions tailored to suit their particular needs, and to provide them with a capital base to implement their plans.

If properly implemented and funded, the National Action Plan is capable of delivering giant steps forward. However, at the moment it is an action plan in name only.

It is over 2 years since CoAG signed the agreement, but not one regional plan has been accredited, and those that are being produced are incapable of guiding on-ground investment decisions.

[35] Allen Consulting Group (2001) Repairing the Country: Leveraging Private Investment, prepared for the Business Leaders Forum, Canberra

Only $88 million of the $1.4 billion allocated has been approved and some of this may well be cost-shifted. The Commonwealth is understandably reluctant to release this money until it can be guaranteed outcomes, but these delays don't help people in the bush who are trying to get on with the job.

Despite the salinity crisis confronting the WA wheatbelt, the Western Australian government hasn't signed the implementation agreement.

In New South Wales the situation is not much better – with the government only signing the implementation agreement in May this year.

Cut the red tape

Premier Carr's statement in September that: *"in NSW, old ways of natural resource management are coming to an end"* is a welcome change in direction, but it will be a challenge to ensure that this time bureaucracies implement these changes.

We need a new structure to break through this bureaucratic bottleneck that is choking on-ground investment – one owned by the people we are expecting to undertake these changes.

Australia could benefit enormously from a community-owned regional delivery model that is supported by a national Natural Resource Management Commission with the business-like independent approach that characterises the Productivity Commission.

The money saved could be directed to on-ground investments in landscape repair, investment in regional capacity building and more investment into targeted research.

Support regional communities

Regional authorities could be established and given statutory powers, independent scientific expertise, and financial resources to implement nationally accredited natural resource investment plans.

These authorities could be run by boards of community representatives, landholders and scientific experts. They should have the power to introduce trading and offset schemes and to raise levies to support the work that needs to be undertaken.

A successful model is working in South Australia where Catchment Boards have fund raising powers and plans have a statutory basis. These community-based boards are small, efficient and have empowered local communities because they are seen to be delivering environmental benefits.

Create a National Commission

The National Commission would best be an independent body to:

- set priorities;
- establish national targets and standards, (including salinity, water quality and biodiversity);
- accredit regional institutions to develop their catchment plans;
- accredit the regional plans against the national targets and standards; and
- recommend the funding of investment priorities.

The Commission should be managed by an independent board of experts in salinity, water quality, biodiversity and community capacity building, and report through the Commonwealth's Natural Heritage Trust Ministerial Board to the Federal Parliament.

A Natural Resource Management Commission would also function best if given statutory responsibility to produce an annual Natural Resources Audit - building on and making use of the $40 million National Land and Water Resources Audit, the Environmental Resources Information Network, the Australian Biological Resources Survey, the Australian Virtual Herbarium, the Atlas of Australian Birds and other similar information assets.

These are world-class investments in information and if combined with the fantastic opportunities coming on-stream with remote sensing and computer technology, could lead to a revolution in land management decision making across the continent.

At present, these investments and opportunities are not reaching the regional communities and farms that need the information. Instead, they sit in computers in government buildings and in reports gathering dust on bookshelves.

Such a Commission could also be given statutory responsibility for overseeing Commonwealth natural resource management related research and development investment to ensure that research is driven by national priorities. It might also have a separate education budget. We have a lot to learn about managing this unique continent and the knowledge we gain needs to be passed onto those who need to use it.

This new structure, combining Australia's best science with local expertise, would form the fourth foundation on which to build our cathedral.

FINANCIAL INVESTMENT

> *"Given the extent of the problems, it is clear that considerable levels of funding will be required for a long period of time.*
>
> *The amount of money to be invested in attaining the ecologically sustainable use of Australia's catchment systems will be the most significant single investment program ever undertaken in Australia".*
>
> House of Representatives Catchment Management Inquiry, 2000.

We have argued that whilst farmers have rights, they also have a duty of care to protect the environment, as all Australians do.

We also argue that the current generation of farmers are not responsible for all the damage that has been done to our landscape over the past 200 years, and that if Australia wants this damage repaired, all Australians should be prepared to provide the financial assistance to help achieve this outcome.

Allen Consulting[36] surveyed landholders to identify the factors that are preventing them addressing environment problems. Over 75% cited lack of funds; 67% cited low commercial benefits; 61% cited government policy constraints; 38% cited lack of options and demonstrated success; 24% cited lack of information and 18% cited leasehold conditions.

Despite increased capital being provided from the Commonwealth and State governments through the Natural Heritage Trust and National Action Plan for Salinity and Water Quality over the past five years, it is widely recognised that this level of investment (both public and private) needs to be increased significantly if we are to correct problems flowing from the mistakes made over the past 200 years.

[36] Allen Consulting Group (2001) Repairing the Country: Leveraging Private Investment, for the Business Leaders Roundtable, p42.

The 2000 *Repairing the Country: a National Scenario for Strategic Investment*[37] report estimated that the cost of repairing the Australian landscape would be $65 billion over a 10 year period and that a public investment of $37 billion was needed, matched by private investments of $28 billion.

Current Commonwealth outlays from the Natural Heritage Trust and National Action Plan for Salinity and Water Quality are around $350 million per annum[38]. This level of investment is probably adequate for on-going maintenance, but it is not sufficient to repair the mistakes we have already made.

The problem for government, understandably, is that until cost effective delivery mechanisms are available to ensure that such enormous sums of public investment will deliver outcomes, allocation of such expenditure over such a long period of time would be irresponsible.

Despite broad political agreement as to what these delivery mechanisms should be - through the CoAG Action Plan - two years later these delivery mechanisms do not exist.

From the other side of the fence those communities who are being asked to implement these reforms are finding it impossible to garner widespread support, because local communities do not believe that governments are willing to invest such resources on behalf of taxpayers to address the problems.

A classic (and difficult) Catch 22.

Our suggestion for resolving this dilemma is for the Commonwealth and State governments to signal to the bush an in-principle commitment to long term funding over a 10 to 20 year time frame.

Not a promise, simply an in-principle signal that governments understand the magnitude of the issue and are prepared to address it.

Recent studies commissioned for the Business Leaders Roundtable and others suggest that a public investment of $20 billion is required over that timeframe[39].

This should give regional communities the confidence that their governments are behind them.

Whilst the sums being suggested are enormous, they also need to be put into perspective.

An investment of an average of $2 billion per annum over the next 10 years represents less than two percent of the Federal budget and less than half of one percent of Australia's GDP. Such an investment would provide an average of over $30 million per region per annum.

Putting aside 0.3% of our nation's annual income to maintain the natural resource base upon which our nation is built is an investment in future generations and it is affordable.

The Wentworth Group is not calling for a new tax, but we are arguing that a major investment of public capital is needed if we are to restore the degraded parts of our landscape. There is a range of sources for such investment:

- consolidated revenue;
- the full sale of Telstra;
- an environmental levy;
- incorporating into the cost of production of food, fibre and water, the hidden subsidies currently borne by the environment;

[37] Virtual Consulting Group and Griffin NRM (2000) Repairing the Country: a National Scenario for Strategic Investment, prepared for the ACF/NFF and the National Land and Water Research and Development Corporation, Canberra.

[38] Commonwealth of Australia (2002) Towards a Sustainable Australia: Commonwealth Environment Expenditure 2002-03, Canberra.

[39] Allen Consulting Group (2001) Repairing the Country: Leveraging Private Investment, for the Business Leaders Roundtable; and Virtual Consulting Group and Griffin NRM (2000) Repairing the Country: a National Scenario for Strategic Investment, prepared for the ACF/NFF and the National Land and Water Research and Development Corporation, Canberra

- government bonds; and/or
- State and local government taxes and charges.

We believe that a Public Inquiry is needed, possibly by the Productivity Commission (perhaps jointly with the proposed Natural Resource Management Commission), to identify the level of funding required to support the land management reforms described in this paper and recommend options for funding this scale of investment.

THE LEGACY

"Australia is having its first green drought. The seared brown land is provoking a debate different to the one we are used to. Farmers are not agitating for more dams or for rivers to be turned inland, as they have in the past. They want politicians to better protect the environment".

"Our greenest drought" The Australian 26/10/02

Many Australians, including some leading and influential Australian business people, have responded with sympathy and generosity to country people who are struggling with the devastating impact of drought on their families.

We support these sentiments, while believing that there is a need and an opportunity for Australia to confront issues that go well beyond the current drought, and which will have profound implications for today's farmers as well as for future generations.

In October last year, Prime Minister Howard said:

"There are several very important issues … but in a dry continent like Australia there is no more pressing environmental question than that of water quality and salinity. Water quality problems are pressing both in our cities and in regional areas, and they are seriously affecting agricultural production, the conservation of biodiversity, and the viability of our infrastructure and regional communities."

This is an issue of profound national significance. The need for change is urgent.

Australia is not living in harmony with its environment.

Through this report and the discussion that must follow, we hope that our national leaders will decide that it is time for change – significant change – in a manner that will leave a legacy for future Australians.