

AUSTRALIAN CONSERVATION FOUNDATION

Submission to the Productivity Commission on Implementation of ESD

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Words ought to be a little wild, for they are the assault of thoughts upon the unthinking.

J.M. Keynes

Introduction

The Australian Conservation Foundation contends that ESD has never been seriously implemented in Australia. Indeed the prerequisites for its effective implementation are absent. These prerequisites include legislation, taxation and other economic policies, information and accounting frameworks, institutions, departmental structures and functions and natural resource management policies and practices.

This submission examines these issues from various angles through the main argument and various appendices.

The Role of the Commonwealth in Ecologically Sustainable Development

ACF contends that the Commonwealth Government must take a leadership role in the pursuit of ESD, both in a policy sense, and in terms of progress in implementation. If the Commonwealth fails to take this leadership role, it is difficult to imagine much in the way of progress towards ESD, either in the public sector or the private sector.

The case for the Commonwealth taking a lead role in this respect can be summarised as follows:

- the Commonwealth plays a key (albeit changing) role in the sourcing, allocation and distribution of environment and natural resource management funds (plus related R&D funding)
- the Commonwealth is accountable (esp. via international agreements and treaties) for determining Australia's agenda, and role, in environmental issues of international significance
- the Commonwealth's powers - which cover things like non-coastal fisheries; Commonwealth lands and territories, export licensing, specific environmental and heritage legislation & processes; foreign affairs and trade; corporations; and defence issues - embrace numerous environmental issues
- through inter-governmental forums (such as COAG, ANZECC, ARMCANZ and the Murray Darling Basin Commission), the Commonwealth has an acknowledged leadership role both in
 - advancing environmental and natural resource management issues onto the national agenda; and
 - facilitating consensus-based approaches to environmental issues and standards
- Commonwealth activities in a much broader range of areas - eg. taxation policy; education and training funding and curricula; Commonwealth budget initiatives across numerous portfolios; industry policy; science and technology policy; tourism policy; Bureau of Statistics; the environmental management programs of Commonwealth agencies; administration of National Competition Policy - impact to varying extents on the environment.
- As many environmental values are recognised as having national (or indeed international) significance, it is to be expected that the Commonwealth Government will take an active role in the ways in which these values are managed
- The Commonwealth (and the Commonwealth alone) is in a unique position to overview the state of the environment nationally, and to overview the environmental issues, problems and priorities from a national perspective.

ACF is gravely concerned that the Commonwealth is actively seeking to divest itself of many of its environmental responsibilities via the Environment Protection and Biodiversity Conservation Bill 1998.

The Environment Protection and Biodiversity Conservation Bill 1998 is regressive in many regards in terms of ESD. In particular it does this by setting up a framework for devolving environmental powers to the states, and even possibly to corporations and individuals, through bilateral agreements, conservation agreements and other mechanisms, without specifying standards and other than the broadest benchmarks and principles. It directly contradicts ESD by requiring the Environment Minister to take all social and economic factors into account in regards to decisions on environmental impact, but limits environmental factors to a narrow range of defined issues. This uses the guise of integration, but makes a mockery of it. (See Appendix 1 for more detail).

ACF believes that an ESD agenda in Australia cannot proceed without an appropriate level of commitment from the Commonwealth Government.

An historical overview of the ESD process in Australia

Right from the beginning of the ESD process, the Working Groups were dominated by vested interests who saw the ESD process as a threat and were determined to derail it or subvert it. Moreover, the ESD goal of welfare and well-being was interpreted by most business and government representatives as the promotion of economic growth¹, and once the ESD working group process was finished, economic growth was explicitly included in the revised set of ‘guiding principles and goals’ in the National Strategy for ESD. The creation of the working groups based on industry sectors meant that intersectoral issues apart from greenhouse were either treated superficially or farmed out to bodies outside the ESD working group process. Despite some enthusiastic public participation, the mechanism for incorporating the conclusions and recommendations of these public meetings into the working group deliberations and reports was inadequate.

Following the publication of the ESD working group final reports in December 1991 and the ESD chairpersons’ Greenhouse Report and Intersectoral Report in January 1992, the government handed the 500 or so ESD recommendations over to 37 committees of state and federal bureaucrats coordinated by an intergovernmental ESD Steering Committee. Most of the NGO members of the former working groups felt these committees should produce an action plan and timetable for implementation of the recommendations. But what they actually did was to produce a National Strategy for Ecologically Sustainable Development (NSED)ⁱ and a National Greenhouse Response Strategy (NGRS)ⁱⁱ which contained greatly watered down versions of the original ESD recommendations. Comparison of key consensus recommendations of the ESD working groups, first with the revised versions which appeared in the NSED, and then with the actual status of subsequent implementation, shows that very little has been implemented apart from more studies, inquiries (such as this one) and reviews. The lack of specific targets and time frames in the National Strategy, or even a budget allocation for its implementation, cast doubt on the government’s commitment to the ESD process. The final strategy accepted the traditional frameworks of business activity, the priority of economic goals over environmental goals, and the primacy of existing social or political structures, institutions and goals.

In the National Strategy, the ESD principles and goals themselves were revised, also without any community consultation or even consultation with the former non-government members of the working groups. As mentioned above, the revised principles and goals contain an explicit commitment to economic growth. They are also governed by the statement that ‘No objective or principle should predominate over the others’. But, since some principles would have to be applied as constraints on others in order to be effective (e.g. conservation of biodiversity and precautionary principle as constraints on the types of development permitted or encouraged), this governing statement could be interpreted as producing a very weak form of ESD.

NGRS contained the further constraint on action that ‘first phase measures will meet equity objectives by causing minimal disruption to the wider community, any single industry sector, or any particular geographical region’ (Ref.2, pp. 12—13). Some commentators see the invocation of equity principles as being inappropriate for justifying the protection of existing polluting industries, notably the coal industry, and for ensuring that ESD cannot be achieved. They argue that ESD in the area of greenhouse response must involve shifts away from fossil fuels and that equity requirements could be met by means of government incentives to establish the new sustainable energy industries in former coal mining areas and through programs to retrain workers.

Implementation of the National Strategies was entrusted to government bodies which either identify

¹ Economic growth can of course be interpreted in different ways. Environmentalists generally do not oppose economic growth if throughput and energy use are reduced or stabilised while increasing economic activity, ie where resource use is decoupled from GDP. This decoupling has been achieved in a number of advanced economies, but not in Australia. Business and government representatives in the ESD process generally interpreted economic growth to mean increased throughput and energy use. It is this meaning that is also used in this submission.

strongly with the resource industries, such as the Australian and New Zealand Minerals and Energy Council (ANZMEC), or would be likely to take a conservative, lowest common denominator position, such as the Council of Australian Governments (COAG). ANZMEC comprises the state and federal ministers, together with the New Zealand minister responsible for minerals and energy, while COAG comprises the Prime Minister, the premiers of each state, and the Chief Ministers of the territory governments of Australia. The only institutionalised follow up at these levels of government is publication of an annual progress report of the National Steering Committee on ESD and the reports Australia is required to make, as a signatory to the Conventions on Biodiversity and Climate Change, and to the UN's Commission on Sustainable Development.

Conflict between government and NGOs about the breakdown of the ESD process came to a head at a 'Consultative Forum' convened by the Department of Prime Minister and Cabinet for 6–7 August 1992 to discuss and apparently to legitimise the draft National Strategies. At the beginning of the meeting, representatives of the Australian Conservation Foundation and the Worldwide Fund for Nature, Australia, presented statements explaining why they were not going to participate further in the meeting. Their concerns were supported by trade union and several business representatives and the forum collapsed at the end of the first scheduled day.

Despite some serious shortcomings, the Australian ESD process succeeded in bringing together representatives of major industries, environmental organisations, trade unions and government to identify important areas of consensus. Progress was made in about half the working groups. But, subsequently, in the course of the development of the national strategies for ESD and greenhouse response, key consensus recommendations were watered down by federal and state officials, whose governments have relegated ESD to low priority. The Resource Assessment Commission (which was established to resolve resource-use issues) and the ERDC (which funded the development of energy-efficient equipment and renewable energy systems) have both been disbanded.

Nevertheless, ESD is being carried forward in diverse ways by local government, the conservation movement, trade unions and several industries. ESD principles, notably the precautionary principle², incorporated in the Intergovernmental Agreement on the Environment and other legal instruments, are beginning to be tested in the courts. So, the ESD working group process was only an early step, albeit an important one, on the long path to an ecologically and economically sustainable, socially equitable society.

Quoting now from Ian Lowe in S. Dovers (1994):

"In fact, despite the efforts of the ESD Working Groups and the acceptance by the federal government of an interim greenhouse target in 1990, which included a package of measures to improve energy efficiency, the Auditor-General showed that action to achieve the planned savings was well behind scheduleⁱⁱⁱ. Even in their own use of energy, the government has failed to set an example to the rest of the community. Improving the efficiency of energy use in manufacturing industry had been neglected. Staff who should have been allocated to the program were still heavily engaged in other work^{iv}. The overall conclusion was:

Australia has a poor record of energy saving. Market research and technical studies indicate there is a significant untapped potential to save money and resources and stem carbon dioxide emissions. We are among the world's largest greenhouse gas emitters on a per capita basis. Our cars are among the world's most inefficient in terms of fuel consumption. There is scope to establish benchmarks to ensure our industry is fully aware of competitive opportunities adopted overseas. In terms of construction practices, there was some evidence that we are behind comparable overseas countries in framing requirements to consider energy use. The Department's research showed that few people were aware of the need to save on energy. The public is still unaware and sceptical about Government programs and pronouncements on this topic.

² Although jurisdictions around the world and in some Australian states are increasingly incorporating the precautionary principle, which is a fundamental principle of ESD, into legislation and policy there has been no real effort to do this by the federal government. Indeed the Environment Protection and Biodiversity Conservation Bill 1998, despite references to the precautionary principle, takes this no further than older existing legislation in terms of actual practice.

The report noted that there has been little progress on the development of national schemes for energy ratings of houses or domestic appliances. Overall, the conclusion was that there seems no strong commitment by government to its stated goal of improving the efficiency of energy use. The corporate culture is attuned to the extraction of energy minerals and promotion of their use rather than to conservation. The current coalition government has rapidly withdrawn from even lip service to greenhouse gas reduction targets and the Deputy Prime Minister is now talking openly about increasing emissions and taking Australia out of the Framework Convention on Climate Change (FCCC). In this climate, the White Paper on National Sustainable Energy Policy would appear to be dead in the water and it is difficult to see on what basis an alternative transport fuels strategy can be formulated as required by Greenhouse 21C. If it is left market forces, no change is likely for the foreseeable future because the existing structure of taxes and subsidies, combined with low fuel prices and the lack of other transport alternatives (urban planning and mass transit) just reinforces the status quo. If the petrol excise is eliminated or replaced by a lower GST, then there is no hope at all and we will just go backwards.”

Some musings on ESD (and Australia's failures)

The Productivity Commission buses the NSESD definition of ESD ([ie. development which aims to meet the needs of Australians today, while conserving our ecosystems for the benefit of future generations^v]. It is aimed at replacing protest and conflict with consensus by asserting that economic and environmental goals are compatible. Instead of being the villains, as they were in the 1970s, technology and industry are now expected to provide solutions to environmental problems. Returning to the Brundtland definition of sustainable development, it means that economic activity which is carried out now to meet current requirements should not degrade or deplete the environment so much that people will not be able to meet their needs in the future. Future generations might not be able to meet their needs if the soil is degraded, natural resources such as fisheries and forests are used up, or water ways are badly polluted.

But what are needs? Just food, clothing and shelter, or a 20% annual return on investment regardless of the consequences? Needs are shaped by cultural, communal and individual values. In its definition of ecologically sustainable development, the 1990 ESD Discussion paper published by the federal government^{vi} avoids the difficulty of defining ‘needs’ by not mentioning them:

Ecologically sustainable development means using, conserving and enhancing the community’s resources so that ecological processes, on which life depends, are maintained and the total quality of life, now and in the future, can be increased.

Like ‘needs’, what is ‘quality of life’? Again, it will be culturally determined and vary with community and individual values.

The 1990 ESD Discussion Paper⁶ differs from the Issues Paper prepared for this inquiry in that it identified two main types of economic instruments for providing an incentive to use resources sustainably:

- *Price-based measures* use charges and subsidies to internalise environmental costs and benefits.
- *Rights-based measures* ‘create rights to use environmental resources, or to pollute the environment, up to a pre-determined limit, and allowing these rights to be traded’.

The question of incorporating environmental costs is not even mentioned in the Issues Paper produced for this Inquiry. Instead, economic instruments have gone out of the window and it talks of developing ESD-related performance indicators (section 4.2) so that ESD outcomes can be evaluated. It appears there is such a paucity of information that it is practically impossible to tell whether a given program is helping to make the environment sustainable or causing further deterioration. One would have thought that the current government would be keener on the use of

economic instruments than on vague performance indicators based on inadequate data, yet these instruments are not even mentioned.

The true cost of natural resources and ecosystem services, or environmental costs, is covered in more detail in Appendix 2 to this Submission (Valuing Natural Resources and the Environment). It concludes that the annual monetary cost of ecosystem services and natural capital is very high, perhaps twice our GDP!

Appendix 3 to this Submission (Lots of Lovely Subsidies) points out that direct financial subsidies for the exploitation of natural resources in Australia, tax concessions to the Agriculture, Mining, Energy, Construction, Manufacturing, Transport, Forestry and Fishery industries, and environmental subsidies, are far greater than suggested in the 1996 DEST Report 'Subsidies to the Use of Natural resources'. To these subsidies might be added the cost of flood and drought relief, which, while not a regular cost to government, cost considerable sums of money when such events occur and also cost farmers a great deal as well. With a healthy environment and no global warming, the severity and cost of such events would be greatly reduced.

Taking the Costanza estimate of 1.8 times GDP as the true cost of environmental subsidies, then with a GDP of \$500 billion per annum, the annual cost would be \$900 billion! This is two orders of magnitude greater than the \$8 billion (admittedly a partial estimate) figure suggested by the DEST report. It suggests that a much more fundamental review of environmental costs in Australia should be undertaken, and that it should include a wider range of natural resources and all the sectors (such as mining, manufacturing and construction) left out of the DEST report.

Appendix 3 suggests we must first eliminate perverse subsidies and internalise externalities as far as possible. Then we need to make markets work and prices tell the truth.

For example ABARE's modelling of the cost of greenhouse response measures suggests that markets are perfect, 'no-regrets' measures do not exist, and that energy is being used to maximum efficiency already. If that is the case, how is it possible for Japan to generate a given amount of GDP with only half as much energy? What do their markets know that ours do not? The Danish Government has announced that they intend to shift all electricity generation to renewable sources (mainly wind and hydro) within 30 years.

Why can't we? The truth is that we have no idea whether we can or not because the question is not even open for debate and research on renewable energy has been practically eliminated by the abolition of the ERDC. If a consultant or government department wants real information on the economics of renewable energy or information on the practical feasibility of particular options, where can they go? The answer is nowhere! There is almost no such information to be had in this country. How can the government, or the markets for that matter, make important decisions without information? For political or economic processes to work properly, the quantity and quality of information about the state of the environment and alternative options for the exploitation of natural resources needs to be greatly improved. If we depend on Mining and Energy companies for such information, we will only get answers favourable to their interests. Even if we depend on academics that in turn depend on grants from such companies, the answers will be the same. By making academics and CSIRO dependent on funds from commercial sources that have a vested interest in the outcome, independent information is just not available.

A 1992 SECV study, 'The SECV and the Greenhouse Effect', showed that the SECV had a plan to reduce its carbon dioxide emission levels 20% below 1988 levels by 2005. This plan was the first attempt in Australia to use integrated resource planning to analyse the relative costs of supply-side

and demand-side options to meet Victoria's energy needs. Unfortunately, they were never able to implement the plan because the SECV was split up and sold off by the Kennett Government. Had the plan gone ahead, brown coal power stations other than Loy Yang would have been more or less phased out by 2005! The cost of the plan was expected to require electricity prices to rise slightly in real terms, but it would have achieved the then national greenhouse target (now abandoned) in only 17 years. No such plans have appeared since anywhere in Australia and the way in which the electricity industry was restructured will probably guarantee that such plans do not materialise.

Development can be interpreted in many different ways, but according to our present industry-based culture, it implies short-term planning, minimal maintenance, waste, maximal exploitation of raw materials and an emphasis on the individual rather than the common good. However, development can also mean social, cultural and spiritual evolution. (See discussion below about the Genuine Progress Indicator). Somehow, the aspect of sustainability must come to the surface for an ecologically based development to evolve.

These problems are related to a much more fundamental problem identified by the State of the Environment report. Although the National Strategy for Ecologically Sustainable Development has been adopted by the Commonwealth and all States and Territories, many government agencies still appear to see their primary role as the promotion of economic development, with little regard to environmental costs. There is little evidence that the National Strategy is reflected in the integration of a commitment to sustainability into all decision-making. Progress towards ecologically sustainable development requires recognition of the fundamental truth that the economy is a sub-set of human society, which is in turn part of the environment. In that sense, we need to build an awareness of the environmental impacts into all social and economic decision-making. Moreover, there needs to be a recognition that the ultimate availability of resources depends on the availability of energy and the absorptive capacity of the environment. There still seems to be a widespread belief that new technology will one day make perpetual motion possible and that the environment can be fixed at a cost (hopefully to someone else). Scientifically, the idea of perpetual motion (unlimited energy at little or no cost) is impossible because the laws of thermodynamics forbid it, even if economic theory allows it.

Cost of Implementation

The Issues Paper says:

“While considerable progress has been made in recent years in managing Australia's natural environment, significant environmental problems still exist.

According to the State of the Environment Council, areas in which Australia's unique environment is under pressure include:

- habitat loss and decline in biological diversity;
- land degradation;
- decline in urban air quality;
- global climate change;
- degradation of inland water resources;
- decline of renewable resources such as old growth forests and fish stocks; and
- degradation of marine ecosystems^{vii}.”

It then goes on to list various defensive expenditures planned by the Natural Heritage Trust and related programs. While such expenditure is welcome (though often exaggerated – ACF research shows that over half of the original \$1.25 billion has disappeared or will disappear in

Commonwealth or state cost-shifting or be spent on environmentally-dubious projects, see Appendix 4), it gives no real indication of the environmental damage that has already occurred and continues to occur. If the NSESD definition of ESD is to mean anything, we need to do much more than apply band-aids to the environment to ameliorate the effects of past damage. How can you put a monetary value on the decline in biological diversity, the decline of renewable resources, the loss of clean air and water resources, land degradation and global climate change? Also, the definition of ESD implies intergenerational equity, but conventional economic analysis uses discount rates which automatically exclude it. The term 'biological diversity' is often incorrectly interpreted as 'species diversity', which leads to it being seen in an extremely restricted way. In agricultural landscapes, many people assume that biological diversity exists only in patches of remnant vegetation. This ignores the fact that agriculture depends on ecosystem functions (soil formation, nutrient cycling, pollination of crops) which are driven by interactions of elements of biological diversity as well as climate change. This narrow view of biological diversity leads to the idea that landscapes can be compartmentalised with conservation of remnant vegetation being the primary action required to conserve biological diversity. It has lead, and will continue to lead, to the loss of essential elements of biological diversity. This is emphasised in this quote from the 1996 State of the Environment report⁷:

Those terrestrial groups for which there is sufficient information to assess current state, the trends are alarming. Five percent of Australia's higher plants, 9% of birds, 23% of marsupials, 7% of reptiles, 16% of amphibians and 9% of freshwater fish are vulnerable, threatened or extinct. These downward trends are continuing. Australia has the world's worst record of mammal extinctions.

By this measure alone, it can be seen that biological diversity in Australia is declining, despite all the money that has been spent on environmental remediation.

As Hamilton and Saddler (1997)^{viii} put it in their study on The Genuine Progress Indicator for Australia:

These results suggest that for the last two decades the benefits to society of economic growth have been wholly offset by the costs. The main reasons for the failure of measured well-being in Australia to continue rising since the late 1970s have been as follows:

- *unsustainable levels of foreign debt;*
- *the escalating costs of greenhouse gas emissions;*
- *the growing costs of unemployment and overwork;*
- *the combined impact of a number of environmental problems; and*
- *a failure to maintain investments in the national capital stock.*

The GPI results indicate that continued growth in Australia is relying ever more heavily on the run-down of our stocks of built, social and natural capital. They suggest that the living conditions of Australians are not improving and we are borrowing from the future to prevent our living standards falling further.

There is an urgent need for a new accounting framework if we are to measure the true impact of public policies on national well-being, one that not only measures economic activity properly, but one which gives due attention to changes in social and environmental conditions that affect people's lives. If we fail to go beyond GDP then, in the words of the United Nations Development Program, we will continue to navigate with a faulty instrument.

In recent years, there have been many alarmist statements in the media, especially from government sources, suggesting that cutting greenhouse gas emissions to 1990 levels will be enormously expensive (as if so-called ‘no-regrets’ measures did not exist). For example, ABARE has claimed that keeping this commitment would impose losses equivalent to a reduction of \$7,600 in the savings of a typical average family (later increased to \$10,700^{ix}), even though it was based on a decline of a mere 0.5% in the GDP^x. These figures sound rather scary, but they have effectively been demolished by John Quiggin^{xi} who pointed out the dubious methods used to calculate these figures. The relative insignificance of the costs has also been pointed out by The Australia Institute^{xii} who explain that the costs are extremely small given that they take place against continuing growth of the Australian economy of about 3.5% p.a. (ie. we will all on average be much better off in economic terms, even taking account of the greenhouse measures) and the MEGABARE model used by ABARE seriously over-estimates some costs of reducing greenhouse gas emissions because it assumes a high level of efficiency in energy use already (which is clearly not the case) and it does not allow for technological improvements that would undoubtedly be stimulated by emission reduction measures. Also, in assessing the ‘costs’ of greenhouse gas abatement measures for Australia, the MEGABARE model takes no account at all of the economic costs of climate change. The economic costs of climate change are equal to the economic benefits of avoided climate change and these costs may well be greater than the costs of reducing greenhouse gas emissions, especially for the Agricultural sector (which incidentally will affect the production of renewable fuels in the future). Thus the Australian position is based on a model which accounts for the cost of a policy, but completely ignores the benefits. The reason of course is that the government is trying to protect the interests of the fossil fuel companies who stand to lose most from global greenhouse gas reduction targets.

The attitude of bodies like the BIE and ABARE in considering greenhouse gas abatement measures to be just a cost on society is a matter for concern because it is basically a negative way of thinking about it. As explained in ‘Factor 4’^{xiii}, it is far more promising to tackle the carbon dioxide problem and many other pollution problems by first optimising primary resource use. The simple reason is that increasing resource productivity can be a highly profitable strategy. Economic profitability and efficiency are sufficient reasons on their own for controlling and diminishing the consumption of primary resources. However, the vested interests involved in the supply of these resources appear determined to prevent the rest of us from achieving these goals. Hence, we have a political problem of balancing their interests against ours.

Apart from that, there also appears to be a common mind-set that considers the absorptive capacity of the biosphere in the same way as the absorptive capacity of local air-sheds for all the pollutants emitted in that area. Except for the fact that it seems difficult to conceive of carbon dioxide filters, greenhouse gases are seen as pollutants to the atmosphere. Economists such as William Nordhaus^{xiv} jumped on this new theme of pollution control using their standard repertoire of pollution control economics. Not surprisingly, they ‘discovered’ immense ‘costs’ to be incurred in the hypothetical battles against the greenhouse effect. Nordhaus published a famous calculation supposedly proving that for the US to achieve the stabilisation of CO₂ emissions set by an international negotiating group in Toronto, and considered by most climatologists a modest first step on the path to stabilising the world’s climate, would depress the GDP (or, as national headlines trumpeted, would ‘cost’) about \$200 billion per year. This astronomical ‘cost’ of even a preliminary climate-stabilising action paralysed policy on this issue for the rest of the Reagan and Bush administrations. It appears that these calculations have influenced many economists here as well because ABARE refer to Nordhaus in their report¹⁰ and use a similar method of calculation. Actually, Nordhaus may have got the number about right, but the sign wrong. Meeting the Toronto CO₂ target would not ‘cost’, but would in principle ‘save’ the US about \$200 billion a year, because saving fuel would

cost less than burning it. Nordhaus' assumption that market failures do not exist has so far prevented global efforts to approach climatic questions in a least-cost, best-buys-first sequence.

Incorporating ESD Principles into Government Decision Making

Given the institutional issues and conflicts of interest mentioned above, it is no surprise that action on the implementation of the NSESD and NGRS has been so long coming.

The NGRS contained the further constraint on action that 'first phase measures will meet equity objectives by causing minimal disruption to the wider community, any single industry sector, or any particular geographical region' (Ref. 2, pp. 12—13). Some commentators see the invocation of equity principles as being inappropriate for justifying the protection of existing polluting industries, notably the coal industry, and for ensuring that ESD cannot be achieved. They argue that ESD in the area of greenhouse response must involve shifts away from fossil fuels and that equity requirements could be met by means of government incentives to establish the new sustainable energy industries in former coal mining areas and through programs to retrain workers.

Table 11.4 The fate of some key recommendations of ESD working groups^{xv}

<i>Topic and ESD recommendation, December 1991</i>	<i>Corresponding NSFSO objectives, December 1992</i>	<i>Status of implementation at March 1996</i>
<i>Fuel efficiency in motor vehicles</i>		
<i>'Recommendation 13</i> The Working Group recommends that the Commonwealth Government should substantially increase its funding for energy efficiency and renewable energy research, development and demonstration, as well as providing funds for early commercialisation of near-economic renewable and efficient technologies' (ESD 1991a)	<i>'Objective 8.1</i> Governments will . . . strengthen energy research, development & demonstration (RD&D), particularly on renewable energies and energy efficiency, including a flexible approach to industry support for pre-competitive RD&D . . . (and) expand the use of renewable energy sources in generating electricity wherever there are suitable opportunities . . . (and) through ANZMEC, investigate the scope to promote commercialisation of renewable and innovative energy technologies'	Nothing implemented at federal level, but a process is underway to develop a National Sustainable Energy White Paper by mid-1996. ^{xvi} NSW is setting up a substantial Sustainable Energy Fund. ^{xvii}
<i>Energy labelling and performance standards for appliances and Equipment</i>		
<i>'Recommendation 7</i> The Working Group recommends (a) that by 1993 mandatory energy labelling be extended to major electric, gas and solar appliances and equipment in the residential, commercial and industrial sectors now not covered (b) that mandatory minimum appliance and equipment efficiency standards be phased in from 1993; . . . ' (ESD 1991a)	<i>'Objective 8.2</i> Governments will . . . develop and implement a national scheme of mandatory energy labelling of major domestic appliances . . . (and) nationwide (minimum) energy performance standards (MEPS) for major domestic appliances, after considering the costs and benefits involved . . . ' The corresponding objective (8.3) for commercial and industrial equipment is not mandatory.	Almost all states have agreed to mandatory labelling of major domestic appliances. Mandatory MEPS agreed to for domestic refrigerators, freezers and electric storage water heaters only. But MEPS levels are low: e.g. only 3.5 stars for fridges. No MEPS for commercial or industrial equipment.
<i>Integrated least-cost energy planning</i>		

<i>'Recommendation 3</i> The Working Group recommends (a) that energy utilities be required by State and Territory Governments to adopt integrated least-cost planning; . . . (c) that for an initial period of five years, a minimum amount equivalent to one per cent of utility revenue be spent on a range of least-cost demand-side options identified by the integrated least-cost planning process' (ESD 1991a)	Nothing in NSESD, but NGRS gives 'high priority' to 'an integrated least-cost approach to energy planning' (p. 13; see also p. 18). There is no mention in either report of spending a small percentage of utility revenue on least-cost demand-side options.	Nothing implemented. Indeed, the current version of the microeconomic restructuring of the electricity industry undermines it (see Section 8.6).
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<i>Topic and ESO recommendation, December 1991</i>	<i>Corresponding NSESD objectives, December 1992</i>	<i>Status of implementation at March 1996</i>
<i>Fuel efficiency in motor vehicles</i>		
<i>'Recommendation 10</i> The Working Group recommends (a) that the Commonwealth Government, following consultation with the motor vehicle industry, ensure that a voluntary forward schedule is established setting the average fuel consumption of all new passenger cars, light commercial vehicles and 4-wheel drives sold in Australia, to be reduced progressively; and (b) that a regulatory mechanism be developed to be introduced if voluntary agreements fail to meet targets' (ESD 1991c)	<i>'Objective 8.4</i> Governments will ... develop as soon as possible in 1993, in consultation with the motor industry, a fuel economy program for all new domestically sold passenger motor vehicles, four-wheel drive (4WD) and light commercial vehicles (LCV). The program will include a national average fuel consumption target for passenger motor vehicles.'	Voluntary target for national average fuel consumption in new passenger cars agreed to with industry. This target, for year 2000, is only slightly below 1995 average fuel consumption. No target yet for 4WD or LCV.
	Note that there is no mention of a regulatory mechanism.	No regulatory mechanism.

Three factors appear to have conspired to produce these retrograde outcomes:

- There was a change of Prime Minister. The former Prime Minister [Hawke] demonstrated a general commitment to the 'resolution of conflict' and a specific commitment to the ESD process—the new one demonstrated neither. [The Coalition government also demonstrated neither]
- During the working group process, several members who were senior state government public servants had shown that they and their governments were unhappy with some of the areas of consensus found between business, trade unions and the environment movement, but did not wish to go on record as breaking the consensus at that stage. But during the committee phase, these public servants had a free hand.
- The resource industries showed by means of a media campaign and extensive lobbying of state and federal politicians that they were unhappy with some of the recommendations to which their representatives on the ESD working groups had agreed.

Mechanisms for incorporating ESD principles

Given the very weak form of ESD that we have in the NSESD and the NGRS (now NGS), as well as the widespread conflicts of interest in many government departments (especially the resource-based departments where there is the greatest need for action but little sign of any significant action

so far), one must ask whether the government is really serious about implementing it at all, especially if it is to correspond with the NSESD definition of ESD and encompass intergenerational equity. Unless some strong pressure is exerted on the departments to change their attitude and begin making decisions which can lead to ESD outcomes, and sufficient funds are made available to enable actions greater than inquiries or reviews to take place, then nothing much can be expected to happen. Perhaps if some more powerful body (similar to the National Competition Council) capable of over-ruling departmental decisions where they conflict with NSESD or NGS goals was established, compliance with both strategies made compulsory, and the government made unequivocal commitments to ensure that adequate funds were available for a comprehensive ESD program, then something might happen. The continued lack of a White Paper on Sustainable Energy Policy and ministerial statements which clearly conflict with ESD goals (such as reduced sales tax on cars and removal of the fuel excise) makes one pessimistic for such an outcome.

As far as the Natural Heritage Trust is concerned, apart from cost-shifting (see Appendix 4) there does not appear to be any requirement that projects incorporate ESD principles. Benchmarking against certain environmental performance indicators is not enough. The assessment of the environmental, economic and social costs and benefits when submitting an application for funding does not need to give any more weight to environmental factors than to any other factors, and conventional cost-benefit analysis usually discounts future benefits, thereby violating the inter-generational equity principle of ESD. Furthermore, most projects appear to involve mere amelioration of past damage to the environment, but that is not sufficient to conserve ecosystems for the benefit of future generations. A much more thoroughgoing approach is required, with less emphasis given to short-term economic factors. It seems extraordinary to state (Box 4 of Issues Paper) that:

Commonwealth departments and agencies are also required to maintain, and make available on request, information about the extent to which their actions have met ESD guidelines, as well as an indication of how ESD considerations have been included in their charters and corporate plans. However, as part of the government's effort to streamline annual reporting requirements, it is understood that this information will not be produced after 1997-98.

In other words, departments have only had to provide such information on a voluntary basis in the past, but it will not be required from now on. How bizarre! The same government that has asked for this inquiry to make recommendations designed to further implement the objectives and principles of the NSESD no longer requires departments to even pretend that they are accountable to the government on ESD matters!

Mechanisms for monitoring, evaluating and reporting ESD outcomes

As mentioned above, if you have such a weak form of ESD to start with, the implementation of ESD principles is voluntary, no budget allocation is provided for its implementation and the government then abandons voluntary reporting as well, one is close to abandoning ESD altogether.

Unless the government shows that it is serious about ESD and Greenhouse, produces policies which comply with ESD principles, provides a budget for its implementation and makes implementation and reporting mandatory (across the whole of government), nothing of substance can be expected to happen. Moreover, reports that Australia is required to make, as a signatory to the Conventions on Biodiversity and Climate Change, and to the UN's Commission on Sustainable Development, cannot be made unless the government collects the relevant information from the individual departments and verifies its veracity. Failure to verify information could lead to mere window dressing and the resort to meaningless public relations statements. Unless the National Steering Committee on ESD is upgraded to departmental or equivalent status and given sufficient finance to control the implementation of the NSESD and NGS, over-ruling other departments if necessary, the

achievement of ESD goals is very unlikely in the foreseeable future. See Appendix 5 for ACF

Having established the administrative framework to ensure compliance with ESD principles, the next step is to decide on specific targets, time frames and methods for evaluating the performance of each department in complying with NSESD, NGRS, Agenda 21, the Biodiversity Treaty, etc.

It is inappropriate that implementation of the NSESD and NGRS have been entrusted to bodies such as resource departments and their agencies, which identify strongly with the resource industries and whose main objective is resource development rather than environmental protection. Only by establishing bodies that truly operate on ESD principles can policies be developed which comply with ESD principles. This policy framework is totally lacking at the moment, so decisions are being made on an ad hoc basis (often for purely political reasons) rather than in a systematic way. Planting a few trees or cleaning up the odd river is not going to make any noticeable difference to the overall state of the environment in Australia when you are simultaneously increasing the use of oil and coal (which increase pollution and greenhouse gas emissions), increase the acreage of cotton (which draws ever more water from inland rivers), allowing uranium mines in National Parks and oil shale mines on the Barrier Reef. As the State of the Environment report has suggested (see above), Australia's record for the conservation of the essential elements of biological diversity is very poor and it will not improve until it is seen in the context of ecosystem functions upon which agriculture, forestry, fisheries, the supply of clean air and water, etc. all depend. As the SoE report⁷ puts it:

There is little evidence that the National Strategy [NSESD] is reflected in the integration of a commitment to sustainability into all decision-making. Progress toward ecologically sustainable development requires recognition of the fundamental truth that the economy is a sub-set of human society, which is in turn part of the environment. In that sense, we need to build an awareness of the environmental impacts into all social and economic decision-making.

As mentioned above, the term 'biological diversity' is often incorrectly interpreted as 'species diversity', which leads to it being seen in an extremely restricted way. In agricultural landscapes, many people assume that biological diversity exists only in patches of remnant vegetation. This narrow view of biological diversity leads to the idea that landscapes can be compartmentalised with conservation of remnant vegetation being the primary action required to conserve biological diversity. Hence, in the evaluation of departmental decisions, there is a need to interpret biological diversity more broadly and actions to re-build or conserve ecosystems should not be made subject to short-term economic goals.

Again, as mentioned by Hamilton and Saddler (see above), their Genuine Progress Indicator results suggest that 'continued growth in Australia is relying ever more heavily on the run-down of our stocks of built, social and natural capital... the living conditions of Australians are not improving and we are borrowing from the future to prevent our living standards falling further.' Regardless of whether you accept the validity of their GPI, it does indicate that we need a new accounting framework which measures the true impact of public policies on national well-being, giving due attention to changes in social and environmental conditions that affect people's lives. The central issue should be working out how to arrive at an optimal composition of the economy's capital stock, including human capital, man-made capital and natural resource stocks. We should be attempting to manipulate the total capital stock in such a way that the welfare of society is maximised. Natural resource stocks must include renewable resources (including water), waste sinks and the ecosystem that supports both. If the run-down of natural capital is allowed to continue, the ecosystem can decline to the point where no amount of other forms of capital can replace it – the Egyptians were able to build the pyramids, but they could not prevent desertification of their land. As a consequence, their civilisation disappeared. The question of the degree of substitution of built for natural capital is perhaps the most strongly contested issue in the economics of the environment. For some types of natural assets, the ability to substitute built capital for natural assets cannot be assumed. They are:

- certain natural resources that are irreplaceable and form essential inputs to continued productive activity, eg. soils and supplies of fresh water;
- waste sinks, ie. Those aspects of the natural environment that absorb and process wastes, rendering them benign, including the atmosphere (covering the climate system and the ozone layer) and the oceans;
- assets whose services are consumed directly by final consumers and which are valuable because of their unique natural features, eg. Uluru, Kakadu, old-growth forests and the Great Barrier Reef.
- Natural resources for which there may be substitutes, but they may be more expensive or less suitable than the natural product, eg. rubber for aircraft tyres, pharmaceuticals from plants. Fossil fuels are important here because energy is essential for economic activity, yet the evidence suggests that the market for energy may not adequately reflect the likely scarcity of fossil fuels (especially for oil and gas).
- If an irreplaceable capital asset is depleted by \$1 million in a year, we should deduct \$1 million from current income to obtain the sustainable income. Note that any decline in the capital stock in one year will generate not only a consumption loss in that year, but a stream of future losses, so that the cumulative losses must be taken into account.^{xviii}

Increasing the focus on outcomes and outputs

If you want to focus on outcomes using the OBM system mentioned in the issues paper, then there must be some generally agreed method for identifying and specifying those outcomes. Lumb and Pears^{xix} have discussed the difficulties associated with tracking total greenhouse gas emissions over time and the inherent weaknesses associated with using GDP as an economic base against which to measure changes in emissions. If it is difficult estimating the effect of various developments on the level of greenhouse gas emissions, how much more difficult is it estimate degrees of sustainability? The collapse of water quality or species diversity tends to fairly sudden when the capacity of the environment to absorb insults is stretched just a little too far. Environmental responses tend to be highly non-linear, so a linear scale of sustainability is really an oxymoron!

In general, measures which result in a reduction in emissions will also be environmentally friendly, but it is still possible to destroy a local ecosystem by inappropriate development without causing measurable increases in the emission of greenhouse gases. The GPI referred to earlier included items for the cost of environmental damage from the excessive use of irrigation water, costs of urban water pollution, costs of air pollution, costs of land degradation, costs of loss of native forests, costs of depletion of non-renewable resources, costs of climate change, costs of ozone depletion, etc.⁸ This is a good start, but it does not include habitat loss and the decline in biological diversity, the degradation of inland water resources, the decline of fish stocks and degradation of marine ecosystems. Since the effects of environmental degradation tend to be fairly localised (if you call the Murray-Darling Basin local), there is a need for indicators to be applied to particular zones or regions rather than for the whole country (as the GPI tries to do), or globally (as climate change and ozone must be).

There are many problems in devising such indicators and deciding over what areas they should apply, but these problems must be addressed if the OBM system is to be used to measure the environmental outcomes of programs such as Landcare. It would be a tragedy if narrow cost-benefit calculations based on short-term costs and long-term benefits discounted in the usual way were used because such programs are (or should be) ultimately aimed at restoring the natural capital referred to by Hamilton.⁸ This will ensure that the local ecosystem will continue to provide a stream of

environmental services to residents and enterprises in that area well into the future, hopefully for ever. The recovery of ecosystems is by necessity a long-term process and cannot be rushed just because economists demand it.

Conclusion

This submission addresses some of the problems of implementation of ESD by the Commonwealth. The implementation of ESD requires the integration of social, economic and environmental factors in decision making. No government department has established methodologies, benchmarks or performance indicators to effectively do this.

No agencies within government have been established to implement ESD. ACF has for some years been recommending, via its annual federal budget submission, the establishment of a variety of bodies and mechanisms to address this lack. See appendix 5.

ACF has also been recommending ecological taxation reform. Current tax reform proposals run counter to effective implementation of ESD. See appendix 6.

ACF has previously put submissions to the Industry Commission related to ESD. See appendix 7 for a discussion of the failure of the implementation of ESD in relation to natural resource management.

Appendix 8 takes us back to the beginning – the principles of ESD!

And in many ways we are still at the beginning in Australia. With our legislation, tax system, resource use subsidies, departmental and bureaucratic structures, natural resource management practices all geared to **not** achieve ESD it is little wonder we are not achieving it.

Appendices

Appendix 1

Edited version of:

***Submission to the Senate Environment, Recreation, Communications and the Arts
Legislation Committee on the***

ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION BILL 1998

NB: This has been edited to highlight references to ESD. Numbering is not consequential because of deletions.

on behalf of

National Environment Consultative Forum
Arid Lands Environment Centre
Australian Conservation Foundation
Australian Council of National Trusts
Australian Marine Conservation Society
Australian National Parks Council
Australian Rainforest Conservation Society
Birds Australia
Clean Up Australia
Conservation Council of South Australia
Conservation Council of South East Region and Canberra
Conservation Council of Western Australia
Ecology Society of Australia
Environment Centre of Northern Territory
Environment Victoria
Environs Australia
Friends of the Earth
Humane Society International
Greenpeace Australia
Keep Australia Beautiful
National Toxics Network
Nature Conservation Council of New South Wales
Queensland Conservation Council
Surfrider Foundation
Tasmanian Conservation Trust
Trust for Nature
Urban Ecology Australia
Victorian National Parks Association
The Wilderness Society
World Wide Fund for Nature Australia

and

Environmental Defender's Offices Network

Prepared by

Environmental Defender's Office Ltd

SUMMARY

1. The Bill in its present form must be extensively amended before it can be supported by the organizations endorsing this submission. The recommendations contained in this submission, if acted upon, will help to ensure that Australian environmental law is a model embodying "best practice" that will set the pace for the coming turn of the century. They will help provide all Australians with more effective environmental protection resulting in measurable improvements on the ground.

THE COAG HEADS OF AGREEMENT

3. The Bill is largely based on the principles set out in the COAG Heads of Agreement. We consider that there are significant problems with these principles. The Agreement takes an unduly limited view of the Commonwealth's environmental powers.

THE BILL: PRELIMINARY MATTERS

4. In order to effectively promote the object of protecting the environment, the Bill should impose a general duty of care for the environment, and a positive duty on decision makers and other participants in EIA processes to carry out their functions under the Bill to meet the objectives of ecologically sustainable development.

5. The objects set out in cl. 3 of the Bill should be expanded to include the promotion of public participation in environmental decision-making.

6. The Bill should not exempt the Crown from liability for prosecution under the Bill. Government agencies should be subject to law in the same way as corporations and individuals.

PROTECTING THE ENVIRONMENT

I. Matters of national environmental significance

7. There is merit in establishing a framework for Commonwealth environmental impact assessment and approval based on matters of national environmental significance. However the Bill's proposed scope of these matters is narrow, and will restrict Commonwealth assessment and approval obligations to site-specific or issue-specific matters. The matters of national environmental significance need to be expanded to include the serious broad-scale issues facing Australia, including:

climate change land degradation vegetation clearance the allocation of water rights the protection and management of forests.

8. The application of the Bill to all world heritage property is a positive step, compared with the current situation where a proclamation must be made in relation to a specific threat before world heritage is protected. However the Bill should require approval for actions having a significant effect on the property itself, rather than on the world heritage values of the property. There should be guidance as to the interpretation of significance. The definition of "world heritage values" is imprecise and will lead to dispute.

9. The clause making nuclear activities a trigger ought to include all waste disposal facilities, the regulation of uranium mining and the regulation of industrial uses of nuclear materials, to ensure national consistency of approach and compliance with Australia's international obligations.

10. There should be a "safety net" provision to ensure that matters which are not specified in Part 3, but which nevertheless are likely to raise matters of national or international environmental significance, can be subjected to Commonwealth assessment and approval.

11. The Bill ought to be amended to include funding as an action of the Commonwealth which requires assessment and approval if it facilitates, promotes or assists an action that is likely to have a significant effect on the environment.

II. Bilateral agreements

12. Bilateral agreements should be able to accredit assessment processes, but should not be able to exempt a project from Commonwealth approval.
13. The public should be given reasonable notice of a draft bilateral agreement and a reasonable opportunity to comment on it.
14. Accreditation should only be granted where the State processes meet specified best practice environmental criteria and processes which are set out in the regulations and applied consistently across the States. At present the Bill provides for almost no environmental safeguards in relation to bilateral agreements.
15. States entering into bilateral agreements should be required to develop implementation plans setting out the manner and method by which the obligations imposed by the agreement will be met, and to report regularly on the implementation of bilateral agreements.
16. The Bill should require periodic monitoring by the Commonwealth of State compliance with a bilateral agreement, and three-yearly reviews of the agreement. The Commissioner for the Environment proposed below should be responsible for this monitoring function, and for carrying out the reviews.

III. Exemptions

17. All reference to the totally discretionary assessment by "specially accredited process" should be deleted. So too should the capacity to delegate assessment and approval to any Commonwealth Department, which can take place without any guaranteed environmental safeguards or any public consultation in the processes which must be followed by those other Departments
18. The exemption of forestry operations in RFA regions from the need for Commonwealth approval under the Bill should be deleted.
19. The exemption of State-managed fisheries in Commonwealth waters from the need for Commonwealth approval under the Bill should be deleted.

IV. Assessment and approval

20. The most positive aspect of the Bill is that it transfers the powers to trigger Commonwealth environmental assessment, and to decide whether or not to give Commonwealth approval to an action, from the "action Minister" to the Environment Minister. However, the Bill should be amended to allow any person to refer an action to the Minister to decide whether assessment is required.
21. The Bill should also be amended to provide for criteria for assessing "significance" and to require anyone referring a proposal to the Environment Minister to lodge a "Notice of Referral" containing key information with the Minister. The Bill should be amended to provide for public advertisement and comment on all Notices of Referral. Where the Minister decides that an action is not a controlled action (and therefore does not require Commonwealth approval), reasons for the decision should be publicly available.
22. The Bill restricts the environmental matters which the Commonwealth can examine when carrying out assessment. The Bill should be amended so that the Commonwealth assesses all environmental aspects, as well as all social and economic aspects, of matters of national environmental significance.
23. The Bill should be amended to provide for a public scoping process for all proposals which need approval, including public comment on project-specific guidelines where a PER or EIS is to be prepared, or on project-specific terms of reference if a Public Inquiry is to be held.
24. The Bill should be amended to provide for improved EIA documentation. It should incorporate the use of community consultative committees to help steer the document preparation process, and include a requirement that EIA documents be published.

25. The Bill should be amended to require the Commonwealth to consider all the environmental impacts of a proposed action when it is deciding whether or not to grant approval. In addition, the principles of ecologically sustainable development which it is required to take into account when making this decision should be expanded.

26. The provisions dealing with strategic EIA generally should be deleted and replaced with strategic EIA that would require each governmental policy, program and legislative proposal likely to have a significant effect on the environment to be assessed for its environmental impacts before it is finalised. This type of strategic EIA would be geared for the earliest possible intervention, would address cumulative impacts, and would be mandatory.

27. The provisions dealing with assessment of fisheries should remain. However, they should be amended to provide minimum standard of assessment, guaranteed environmental safeguards and provision for adequate public consultation. In addition, the Minister administering the Fisheries Management Act should not have the power of veto in deciding whether there should be further assessment of a fishery. Further assessment ought to be required if the impacts are different from the impacts previously identified, not just if they are significantly greater. Any strategic assessment of fisheries ought to be reviewed each 5 years.

28. We see no justification for exempting foreign aid, aircraft movements and airports from the comprehensive scheme of the Bill.

CONSERVATION OF BIODIVERSITY

V. Conservation agreements

42. Conservation agreements should not be able to exempt an action from assessment and approval. The Bill should be amended to ensure provision is made for public involvement in the negotiation and enforcement of conservation agreements. The Bill should not make provision for the private management of public land without public debate on the issue first.

ADMINISTRATION

I. Sustainable development strategies

47. Each Commonwealth Department should be required to prepare a sustainable development strategy and to table it in Parliament within two years.

II. State of the Environment reporting

48. The Commonwealth should be required to prepare a State of the Environment Report each three years.

III. Commissioner for the Environment

49. There is a need for an independent authority to publicly review and report on the environmental role and operations of the Commonwealth Government. We propose that the Bill provide for a Commissioner for the Environment. The duties of the Commissioner would include: (i) reviewing the extent to which Commonwealth Departments have met the objectives, and implemented the action plans, set out in their sustainable development strategies, (ii) reviewing bilateral agreements to assess their consistency with the accreditation criteria which are to be spelt out in the regulations, (iii) monitoring and reviewing State and Commonwealth compliance with bilateral agreements, (iv) auditing compliance with approvals issued under the Bill, (v) auditing compliance with conservation agreements made under the Bill, (vi) auditing compliance with the requirement to prepare management plans for protected areas within the time-frames to be set out in the Bill, and compliance with those management plans, and (vii) co-ordinating State of the Environment Reporting.

IV. Ongoing monitoring of environmental impacts

50. The Bill should make specific provision for the power to monitor and review an action at any time where the Minister suspects on reasonable grounds that the impacts are significantly greater than or different from those predicted. EIA should not stop with the approval of a project. The Bill should be amended to require monitoring for every approval. Monitoring results should be made publicly available. Compliance statements should be required

V. Conservation orders

51. The Minister should be able to make conservation orders to protect any of the matters covered by the Bill. The power should not be limited to Commonwealth areas. Conservation Orders should be available to stop work while the Minister determines whether an action is a controlled action.

VI. Enforcement

52. Any person should be able to bring an application for an injunction or for judicial review under the Bill.

53. Rights to merit appeals which exist in current laws should be retained. In addition the Bill should allow merits review for decisions not to assess proposals, and decisions as to the adequacy of EIA documents.

VII. Public information

57. The Commonwealth should have a public registry of information regarding projects assessed which would include a central index of details of assessments and a listing of documents relating to each assessment and decision, and should provide access to those documents.

58. The Bill should be amended to provide for early publication of key environmental information. The Bill should be amended to expressly allow a right of appeal under the FOI Act for all provisions which restrict publication of information under the Bill. Where a claim to confidentiality of documents is made, the onus should be on those claiming confidentiality to substantiate their claim

59. Any person ought to be able to require a statement of reasons for a decision under the Bill.

INTRODUCTION

Millennial Opportunities

The Protection of the Environment and Biodiversity Conservation Bill 1998 (the Bill) is the first major attempt to reform Commonwealth environmental law since its inception in 1974. It provides momentous historical opportunities; the sort of opportunities ignored at Federation when John Clarke petitioned Convention delegates to the 1897 Constitutional Convention to provide "a clause protecting the Native Animals, as well as the flora and trees" at a time when many of those that have since become extinct and lost forever could have been saved.

The Bill provides an opportunity for the Federal government to consolidate and exercise in a uniform fashion what the High Court has ruled can be nearly plenary environmental power. It is also, more importantly, an opportunity for the Commonwealth to demonstrate real environmental leadership and take Australia into the 21st Century with strong and effective national laws for the protection and conservation of our environmental, natural and cultural heritage; an opportunity to ensure that all Australians, no matter where they live, are accorded the best and equal environmental protection under the law.

At an international level, the Bill also provides a rare opportunity for the Commonwealth of Australia to be at the forefront of environmental law. By enacting a progressive legislative example of the effective implementation of the Convention on Biological Diversity - one of the most environmentally significant and comprehensive multilateral treaties to date - the Federal government could do much to rebuild its international environmental reputation.

Opportunities Lost?

Disturbingly, a careful study of the 400 plus page Bill reveals that most of these opportunities will be missed unless the Bill is changed. In its present form the Bill is fundamentally flawed. A number of parties to this submission made comments, some extensive and detailed, on the Consultation Paper that preceded the Bill, but few, if any, of these comments have found their way into the proposed legislation. Unless the fundamental recommendations for amendment contained in this submission are implemented, the new Commonwealth environmental law will be less effective than it is currently. In its present form, the Bill is not supported by the organisations endorsing this submission.

- It establishes a legal framework in which many matters of not only national environmental significance, but also international environmental significance, are ignored.
- It appears to dismantle a national independent statutory authority responsible for protecting the Australian environment, the National Parks and Wildlife Service.
- It gives short shrift to public participation by rolling back existing notice and appeal rights.

- It has the effect of reducing the Commonwealth to one State among many by limiting the Bill's application to Commonwealth areas on crucial matters.
- It excludes specific coverage of a significant portion of Australian biological diversity because it excludes RFA areas.
- It provides too much Ministerial discretion, instead of identifiable environmental standards, and will promote uncertainty.
- It fails to establish a framework aimed at ensuring that the necessary financial resources will be available to provide for the effective implementation of the Bill.

Limited Redeeming Value

While the overall Bill in its present form is rejected, it does have some redeeming features. The Minister's more comprehensive ability to trigger assessment, decide significance, and grant approval is a welcome. The addition of the ability to assess activities that may significantly effect threatened species and communities is also a good thing, as is the expanded categories of species and communities entitled to be listed. The inclusion of a whale sanctuary is also a progressive development.

The Way Forward

It is not entirely clear what the complete effect of the proposed changes to Commonwealth environmental law will be, because the government has not tabled the regulations which will accompany the new law or the wide-ranging consequential amendments the Bill will require. Nevertheless, the broadly representative groups across Australia making this submission believe that the Bill in its present form must be extensively amended before it can be environmentally acceptable. The recommendations contained in this submission, if acted upon, will help to ensure that Australian environmental law is a model embodying "best practice" that will set the pace for the coming turn of the century. They will help provide all Australians with more effective environmental protection resulting in measurable improvements on the ground.

Duty of Care for the Environment

In order to effectively promote the object of protecting the environment, the Bill should impose a general duty of care for the environment, in addition to the other legal and regulatory requirements imposed by the Bill. Such a duty is fully supported by the Industry Commission's Inquiry into Ecologically Sustainable Land Management. This duty should apply to all developers and industry, as well as every natural resource owner, manager or user. It should entail three subsidiary duties: (i) a requirement that in formulating policy, making decisions or taking action, all reasonable and practical steps be taken to prevent harm to the environment; (ii) a requirement to identify, assess and manage the risks of harming the environment, and (iii) a requirement to inform and consult with those at risk of foreseeable harm from an environmental hazard or its management.

Recommendation 2

Amend the Bill to provide for a general duty of care for the environment, with subsidiary obligations to take all reasonable and practical steps to prevent harm to the environment when formulating policy, making decisions or taking action; to identify, assess and manage the risks of harming the environment; and to inform and consult with those at risk of foreseeable harm from an environmental hazard.

Duty to Achieve Ecologically Sustainable Development

Another primary object of the Bill ought to be to integrate the principles of Ecologically Sustainable Development into all aspects of the Commonwealth's decision making processes. The Bill only does half the job it is called on to do. It integrates social and economic considerations into environmental decision making but it does not require environmental factors to be a part of significant social or economic decisions. One way of achieving this object would be through strategic impact assessment, and we discuss this later in this submission. A further method is to require Commonwealth government agencies to develop and implement strategies for ESD, and this too is discussed later in this submission.

The legislation should contain a positive duty on decisionmakers and other participants in EIA processes to carry out their functions under the Bill in such a way as to meet the objectives of ecologically sustainable development. This is necessary to give effect to the objectives of the Bill set out in cl. 3(1). Moreover, it implements an outcome oriented approach. This type of obligation is already found in Tasmanian environmental legislation, the New Zealand Resource Management Act 1991, and the New York Code.

Recommendation 3

Amend the Bill to provide for a positive duty on decisionmakers and participants in EIA processes to carry out their functions and activities under the Bill in such a way as to meet the objectives of ecologically sustainable development.

Rights of Public Participation

The promotion of public participation in environmental decision-making is not included in the objects set out in cl. 3 of the Bill. The States and parties to conservation agreements are mentioned, but the broader public is ignored. As a nation Australia has committed itself to the principles contained in the Rio Declaration 1992, which include a clear recognition of the public's role in achieving the objectives of those principles. The Rio Declaration - Principle 10 - states that :

"Environmental issues are best handled with the participation of all concerned citizens, at the relevant level ... States shall facilitate and encourage public awareness and participation by making information widely available.

The right of public participation should include the right for concerned individuals and groups to be heard before the courts in connection with the proposed Act. Principle 10 of the Rio Declaration goes on to confirm this: "Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided".

Recommendation 4

Amend the Bill's objectives to include an objective providing for public involvement and participation in environmental assessment and protection. A key strategy used to promote this object should be a new provision giving the right of "any person" to bring and action to restrain or remedy a breach of the Act. See the discussion on injunctions below.

CHAPTER 6 ADMINISTRATION

Part 16 - Precautionary Principle

Cl. 391 provides that the Minister must have regard to the precautionary principle in making certain decisions under the Bill (which are listed in the clause). However, the precautionary principle is only one of the principles of ecologically sustainable development. Clause 136, by comparison, obliges the Minister to have regard to the principles of ESD when granting an approval to carry out a controlled action.

A number of key decisions made under the Bill are not listed in cl. 391. For example, although the clause applies to the decision as to whether approval is required for an action (cl. 75), it does not apply to any subsequent reconsideration of that decision (cls. 78, 79). It also does not apply to the important decision as to the level of assessment to be required.

Recommendation 90

Amend cl. 391 to the Minister to have regard to the principles of ecologically sustainable development, and not just the precautionary principle. Apply the clause to all decisions made by the Minister.

Sustainable Development Strategies

In Canada in 1995, legislation was enacted to help strengthen the federal government's performance in protecting the environment and promoting sustainable development. Through amendments to the Auditor General Act, federal ministers were required to have sustainable development strategies prepared for their Departments. The sustainable development strategies are intended to help Departments broaden their perspective on what they do and how they do it - to more systematically take environmental, economic and social considerations into account in their policies, programs and operations.

The Canadian Commissioner of the Environment and Sustainable Development was appointed to help Parliamentarians assess the strategies and their implementation. The Commissioner's most recent report has highlighted that clear and measurable targets are key to the success or failure of the sustainable development strategy process. Departments, Parliamentarians and the public need benchmarks to judge whether the strategies are being successfully implemented, or to determine when corrective action may be required.

In Canada, the preparation of a sustainable development strategy is a systematic process that:

begins with an identification of what a Department does and how it does it; assesses those activities in terms of their sustainable development impacts; seeks the views of clients, partners and other stakeholders on priorities; establishes

goals, objectives and benchmarks for measuring progress; presents an action plan to translate those goals into concrete results; and concludes with an explanation of how the Department will measure and report on its performance.

Recommendation 91

Amend the Bill to require each Commonwealth Department to prepare a sustainable development strategy and to table it in Parliament within two years.

Require each strategy to:

begin with an identification of what a Department does and how it does it; assess those activities in terms of their sustainable development impacts; seek the views of clients, partners and other stakeholders on priorities; establish goals, objectives and benchmarks for measuring progress; present an action plan to translate those goals into concrete results; and conclude with an explanation of how the Department will measure and report on its performance.

State of Environment Reporting

The Bill, as currently drafted, fails to require Commonwealth State of the Environment reports. State of the Environment reports help assess the effectiveness of current Government policy as it affects the environment and can highlight recommendations for further policy action. State of the Environment reporting provides a rational basis for environmental policy making.

Recommendation 92

Amend the Bill to require the Commonwealth to prepare a State of the Environment report each three years, and to list the required contents of a State of the Environment report.

Commissioner for the Environment

There is a need for an independent authority to publicly review and report on the environmental role and operations of the Commonwealth Government. We propose that the Bill provide for a Commissioner for the Environment. The role of the Commissioner would include the following:

- reviewing the extent to which Commonwealth Departments have met the objectives, and implemented the action plans, set out in their sustainable development strategies
- reviewing bilateral agreements to assess their consistency with the accreditation criteria to be spelt out in the regulations
- monitoring and reviewing State and Commonwealth compliance with bilateral agreements
- auditing compliance with approvals issued under the Bill
- auditing compliance with conservation agreements made under the Bill
- auditing compliance with the requirement to prepare management plans for protected areas within the time-frames to be set out in the Bill, and compliance with those management plans
- co-ordinating State of the Environment Reporting.

Recommendation 93

Amend the Auditor-General Act 1997 and the Commonwealth Authorities and Companies Act 1997 to make provision for the appointment of a senior officer to be called the Commissioner for the Environment who will report directly to the Auditor General. The Commissioner should assist the Auditor General in performing duties that relate to the environment and sustainable development. The Commissioner's functions should include:

- reviewing the extent to which Commonwealth Departments have met the objectives, and implemented the action plans, set out in their sustainable development strategies
- reviewing bilateral agreements to assess their consistency with the accreditation criteria to be spelt out in the regulations
- monitoring and reviewing State and Commonwealth compliance with bilateral agreements
- auditing compliance with approvals issued under the Bill
- auditing compliance with conservation agreements made under the Bill
- auditing compliance with the requirement to prepare management plans for protected areas within the time-frames to be set out in the Bill, and compliance with those management plans
- co-ordinating State of the Environment Reporting.

The Commissioner should report annually to Parliament concerning the matters set out above, and anything else that the Commissioner considers should be brought to Parliament's attention in relation to environmental and other aspects of sustainable development. The Commissioner should be able to investigate matters within the responsibilities set out above which have brought to his or her attention by the public in the same way as an ombudsman.

Recommendation 94

Amend the Auditor-General Act 1997 and the Commonwealth Authorities and Companies Act 1997 to require the Commissioner to report annually to Parliament concerning the matters set out above, and anything else that the Commissioner considers should be brought to Parliament's attention in relation to environmental and other aspects of sustainable development. Enable the Commissioner to investigate matters within the responsibilities set out above which have brought to his or her attention by the public in the same way as an ombudsman.

Environmental Audits

One of the greatest failings of the current EIA process is the failure to monitor and keep matters under review. Predictions are regularly made in assessment documents about the impacts of a development. These are either quantified, with numerical values given to the impact, or expressed in unquantified terms such as "not significant".

Clause 10.1.1 of the current Administrative Procedures under the Environment Protection (Impact of Proposals) Act 1974 (Cth) allows the Department to review all or any of the environmental aspects of a matter affecting the environment to a significant extent at any time. Specific reference is made to reviewing and assessing:

"the effectiveness of any safeguards or standards for the protection of the environment adopted or applied in respect of the proposed action and the accuracy of any forecasts of the environmental effects of the proposed action".

The power to monitor and review developments currently exists but has rarely if ever been used by the Department. There has been no systematic comparison of predicted and actual impacts. In 1990, Professor Ralph Buckley explained how environmental audits were required to improve the scientific content of EIA. His study revealed that:

"In Australia at least, our predictions are less than 50% accurate on average and two orders of magnitude out on occasion. Improvement is clearly needed. It is to be hoped that continuing audits of environmental impact predictions will provide the feedback link on which such improvement depends".

The Bill proposes to authorise the Minister to require an environmental audit if the Minister suspects on reasonable grounds that the holder of an authority has or will contravene a condition of the authority. This is not an adequate provision. The Bill ought to make specific provision for the power to monitor and review an action at any time where the Minister suspects on reasonable grounds that the impacts are different from those predicted. EIA should not stop with the approval of a project.

Cl. 458(3) provides that where a notice has been given requiring the holder of an environmental authority to carry out an environmental audit the notice must specify the matters to be covered by the audit. Cl. 458(3) provides an indication of some of the matters which may be included. The suggested elements are inadequate.

For example, rather than simply an assessment of the holder's existing capacity to comply with the authority and requirements of the Act, an assessment ought to be made of whether the holder has actually complied with those requirements in the period leading up to the conduct of the audit. Further, the audit should examine the impacts of the development (an "impact audit") and not just whether there has been compliance with the authority (a "management audit").

Cl. 459(1) says that the holder must appoint an environmental auditor and arrange for an audit in accordance with a notice given by the Minister. Cl. 459(2) provides for a civil penalty for breaching cl. 459(1), that is failing to conduct an audit. Contrast this with the penalty for an environmental auditor who fails to take into account relevant information and may be punished by six months imprisonment.

Recommendation 98

Amend the Bill to make specific provision for the power to audit and review an action at any time where the Minister suspects on reasonable grounds that the impacts are different from those predicted. Also amend the Bill to include an obligation to perform such audits rather than simply a discretion. Specify the core elements of the environmental audit in the legislation.

Amend the Bill so that a breach of cl. 459(1), failing to conduct an audit when directed, is a criminal offence punishable by a term of imprisonment for not more than six months and/or a fine not exceeding 500 penalty units.

Monitoring and Compliance

Monitoring results should be made publicly available at time frames appropriate to the particular development but in any event no less frequently than quarterly. During the start-up phase of a development, monthly release of monitoring results may be required, lengthening to quarterly intervals upon satisfactory compliance. More frequent release of monitoring results would again be required following any modification to plant, process or operation of the development.

The results should be provided in such a way that the raw data, as well as any interpretation of the data made by the proponent, can be assessed independently.

There should be a requirement that impact predictions in EIA documents be quantified, with best estimates where it can be substantiated that quantification is not possible. In addition, compliance statements ought to be required on an annual basis. Annual reporting and compliance statements are already required at State levels.

Recommendation 99

Amend the Bill to require monitoring for every approval. Make monitoring results publicly available at time frames appropriate to the particular development but in any event no less frequently than quarterly.

Amend the Bill to include a requirement that impact predictions in EIA documents be quantified, with best estimates where it can be substantiated that quantification is not possible. In addition, require compliance statements.

Limited Life of Approval

Approvals should be issued for a fixed period depending on the nature of the development and having regard to developed criteria, for a maximum period of twenty years, with further approval to be sought at the end of that period. After that period, a project should require further environmental assessment in light of the ongoing monitoring which has taken place and in light of any changes to the environment, whether due to the project or not.

Recommendation 100

Amend the Bill to require that approvals be issued for a fixed period, for a maximum period of twenty years, with further approval to be sought at the end of that period. After that period, require further environmental assessment of the project in light of the ongoing monitoring which has taken place and in light of any changes to the environment, whether due to the project or not.

Cancellation of Approval

There ought to be provision for an approval to be cancelled where:

monitoring indicates that inaccuracies were contained in the EIS, these materially influenced the decision, and the flaws in the EIS are now having a significant adverse effect.

Similar provisions are found in the New Zealand Resource Management Act 1991. Where a consent has been cancelled, the proponent (including the proponent's directors) should be prevented from obtaining approvals for other projects for a prescribed period.

Recommendation 101

Amend the Bill to make provision for an approval to be cancelled where:

monitoring indicates that inaccuracies were contained in the EIS, these materially influenced the decision, and the flaws in the EIS are now having a significant adverse effect.

Merits Reviews

All rights to third party merit appeals have been stripped under the Bill. These rights currently exist under the Endangered Species Protection Act (see s 96) and the Whale Protection Act (s 18). The Bill contains a number of provisions that allow permits to kill, injure, take, trade, keep or move listed species, ecological communities, migratory species, whales and other cetaceans, and marine species. (See Chapter 5, Division 1, Subdivision B; Chapter 5, Division 2, Subdivision B; Chapter 5, Division 3, Subdivision F; Chapter 5, Division 4, Subdivision B). These should continue to be subject to third party merit appeals.

Some other decisions under the Bill ought to be made subject to third party merits review. These include decisions not to assess proposals, and decisions as to the adequacy of EIA documents. pursue prosecution in serious or willful breaches.

Appendix 2

Valuing Natural Resources and the Environment

In the past, the cost of natural resources was simply taken as the marginal cost of extraction. Social and environmental costs were taken as “free” unless money had to be spent on welfare or pollution abatement to prevent social unrest or further deterioration of the environment. Even then the costs and benefits often went to different people, and subsidies or tax concessions distorted the economic outcomes and led to over-exploitation of the resource.

If an effective management of the natural and environmental and resource base is to be achieved, policy makers need to have access to a consistent, reliable and comparable data set, relating to the availability and use of such resources. One special approach, which is part of this exercise, is an attempt to present the relevant information within an accounting framework. As with all accounting systems, the objective of environmental accounting is to prepare a balance sheet, giving a profile of what *stocks* of the resource are available at a given point of time, prepare an account of what *uses* are made of these stocks, what *sources* they are derived from, and ensure that the *stock accounts* and the *flow accounts* are consistent, so that the balance sheet in any year can be derived from the balance sheet of the previous year plus the flow accounts of that year.

The attempts to incorporate environmental issues within some accounting system can be traced back, on the one hand to the work of Nordhaus and Tobin^{xx} in the United States, and on the other to the natural resource accounting modelling work of the Norwegian government beginning around 1974.^{xxi} Each of these represents a distinct approach that has been followed by others subsequently, and with considerable modifications. However, the essential distinction between the two approaches remains fairly clear. Whereas Nordhaus and Tobin attempted to incorporate environmental considerations into the existing national accounts, the Norwegian approach (and subsequently that of the French and Canadian governments) has been to develop the accounts for the natural and environmental resources in a separate physical accounting framework. The Norwegian and French accounting systems have been described by Pearce et al^{xxii}.

Although we naturally think of “accounts” in money terms, there is in fact no reason why such accounts should not be presented in physical units, as long as they present the stocks and flows in a clear identifiable way and as long as they achieve the reconciliation between the sets of stock and flow accounts as described above. For example, energy balance sheets can and have been prepared, with sectoral sources and uses of energy being presented in physical terms (eg. tonnes of oil equivalent or petajoules).

In *An Inquiry into the Human Prospect* (1974), economist Robert Heilbroner^{xxiii} reflected about the meaning of this pressure of the human economy on the biosphere. He considered especially the political traumas that will be faced when economic growth is no longer possible. In a 1980 revision of his *Inquiry*, he projected a continuing (but gradually slowing) growth economy until the middle of the first decade of the next century. When that ends, he sees (as in the earlier 1974 edition) the need for highly authoritarian governments to control the transition to economic decline (Heilbroner, 1980, p.167 ff).

In the past, the Australian Government has argued against valuing natural assets and including their measurement in the national accounts for pragmatic reasons. It says it is too difficult in the short-to-medium term. Instead, it argues that it ‘would help the conventional National Accounts to measure more accurately the total level of activity, including that relating to the use and consumption of natural resources’^{xxiv} if market prices for goods better reflected environmental values. Note that if prices were increased to incorporate environmental costs, and environmental costs are not subtracted from the final selling price when working out GNP, this could have the effect of inflating GNP rather than deflating it. The 1990 paper identified two main types of economic instruments for providing an incentive to use resources sustainably:

- *Price-based measures* use charges and subsidies to internalise environmental costs and benefits.

- *Rights-based measures* ‘create rights to use environmental resources, or to pollute the environment, up to a pre-determined limit, and allowing these rights to be traded’.

These matters are discussed in more detail by Beder^{xxv}, who points out that perhaps decisions relating to the environment should be made in the political arena rather than by those who would prefer to pay to pollute because the rationale for economic instruments threatens to reduce the scope for public participation in such decisions. This question has also been raised by Blamey et al^{xxvi} in discussing whether respondents to contingent valuation surveys are acting as consumers or citizens. From their study of forest management in Australia, they concluded that respondents were acting primarily as citizens. This suggests that the use of contingent valuation surveys in cost-benefit analysis is not appropriate, and that the results of such surveys might be better used to assess the price-sensitivity of political support for various public goods and to assess the relative appeal of competing proposals for public expenditure.

The question of incorporating environmental costs is not even mentioned in the Issues Paper produced for this Inquiry. Instead, economic instruments have gone out of the window and it talks of developing ESD-related performance indicators so that ESD outcomes can be evaluated! In other words, there is such a paucity of information that it is practically impossible to tell whether a given program is helping to make the environment sustainable or causing further deterioration.

In the 1996 State of the Environment Report^{xxvii}, it says that:

“State of the Environment reporting is an important step in the essential process of refining the knowledge base on which decisions about the environment are made. That base is currently inadequate. For example, while we believe that more than 90% of vertebrates and higher plants in Australia are identified and described, it is estimated that only about 50% of the invertebrates and simpler plants are identified. We know even less about other species such as fungi and bacteria. With such limited knowledge, it is impossible to assess the impact of human activity on biodiversity – a critical aspect of ecosystem health and resilience.

Australia lacks the integrated national systems and databases to measure environmental quality, manage it and evaluate the effectiveness of that management. Until these deficiencies are rectified, we will remain unable to truly answer the question of whether our pattern of development is genuinely sustainable.

Our lack of knowledge and understanding of environmental issues emerges again and again in the report as a major obstacle to sound environmental management.

Sustainable development requires the maintenance of the following three key components of the environment:

- *Biodiversity*: the variety of species, populations, habitats and ecosystems
- *Ecological integrity*: the general health and resilience of natural life-support systems, including their ability to assimilate wastes and withstand stresses such as climate change and ozone depletion
- *Natural capital*: the stock of productive soil, fresh water, forests, clean air, ocean, and other renewable resources that underpin the survival, health and prosperity of human communities

The approach to SoE reporting in Australia is based on a modified version of the OECD’s ‘pressure-state-response’ model. The model is based on the concept of causality: human activities exert pressures on the environment; these change its state or condition; society responds by developing or implementing policies that influence those human activities, and so change the pressures.

Developing a nationally agreed set of indicators for Australia is a high priority for SoE reporting. These are physical, chemical, biological or socio-economic measures that can be used to assess natural resources and environmental quality. Preparing this SoE report has involved selecting a ‘first generation’ of environmental indicators. These indicators provide a good foundation for future development.

Two fundamental difficulties hinder the development of appropriate responses to environmental problems. First, we may not know the cause, or causes, which can involve a complex interaction between a variety of factors; and second, there can be a long time lag between changes in human activities and any observable differences in natural systems.

Even where we are clear about the problems and what needs to be done, our institutional arrangements – such as those between and within governments – make it difficult to deliver coordinated responses.

While Australia’s environment is in relatively good condition in some areas, elsewhere we are experiencing serious environmental problems, especially with the loss of biological diversity, with the poor management of inland waters in southern Australia, the growing hole in the ozone layer, soil erosion and the logging of old growth forests.

The Australian Bureau of Statistics is preparing a set of ‘satellite accounts’ which document changes in a range of natural assets such as land, water, forests and fish, as well as accounts associated with wastes and emissions. The

satellite accounts, based on guidelines recently developed by the United Nations and other international organisations, will mesh with the conventional national income and production accounts. The complete system of accounts will provide a useful tool for assessing policy options for achieving ESD.

Environmental accounts can link economic information about various sectors and industries to environmental indicators, enabling us to assess the impacts of different patterns of economic growth and technological change on the nation's stock of environmental resources. Some economists believe that environmental accounts can be used to estimate 'green GDP' to adjust the GDP for changes in natural resource stocks (depletion) and changes in services provided by the environment. These are dependent on environmental quality (degradation) as well as expenditures on environmental protection programs. We clearly need better ecological, social and economic information if we are to manage our resources and environment in an integrated fashion.

We do not yet have an integrated ecosystem-based approach to the management of our resources. Until we develop that approach, environmental management will be characterised by ad hoc responses to urgent problems without a strategic vision to achieve the ultimate goal of ESD. Despite the adoption in 1992 of the NSESD and the emergence of the National Strategy for the Conservation of Australia's Biological Diversity, there is little evidence that these strategies affect decision-making in any but the most perfunctory way. Similarly, cultural heritage considerations are not systematically integrated into the management of natural resources.

Finally, there is little sign that economic planning takes serious account of the ecological impact of the options available at any time; it is assumed that the first priority is a healthy economy, with the doubtful corollary that other problems will be solved by sensible deployment of the wealth created. The economy is a subset of human society which is in turn part of the ecological system. Progress toward sustainability requires recognition of that fundamental truth and a willingness to build ecological thinking into all social and economic planning."

It is clear from this extract that there are real problems in Australia, not just with the general lack of information about the state of the environment and the pressures on it, but also from the lack an integrated ecosystem-based approach to the management of our resources and the environment. Indeed, the SoE report itself only presents a broad brush view of various regions affected by development pressures and admits that there is little evidence that strategies such as the NSESD affect decision-making in any but the most perfunctory way. The development of environmental indicators enables the government to get an overall picture of whether we are going forwards or backwards (currently we are going backwards), but until the two fundamental difficulties referred to above (the complex interaction between a variety of factors and the time lag between changes in human activities and any observable differences in natural systems), little progress will be made. Even then, appropriate institutional arrangements will be needed to deliver coordinated responses "on the ground" to the particular problem in hand. The indicators, interactions, time lags will also need to be more disaggregated so that decisions can be made about suitable responses for particular ecosystems in particular areas. However justified they may be for general protection of the environment or remediation of past environmental damage, government programs such as the National Heritage Scheme should not just be based on the expected improvement in the productivity of particular areas of land. They should be part of a strategic vision to achieve the ultimate goal of ESD.

As mentioned above, Norway, Canada and France have instituted systems of extensive resource accounts which are separate but supplementary to their national economic accounts. Keeping accounts of natural resources raises problems in itself. Should resource accounts be kept in monetary terms so that they can be directly integrated into economic decisions? This is easier for minerals and resources that have a market value, but not so easy for non-commercial wild species.

A recent report published by the World Resources Institute^{xxviii} presents the results of studies in four OECD countries. It shows that the annual Total Material Requirement (TMR) of modern industrial economies is enormous, 45-85 tonnes of natural resources per person are consumed to produce their flow of goods and services. This total does not include the use of air and water, and up to ¾ of it consists of hidden flows that never enter the market economy, but have environmental impacts. It was found that despite increasing efficiencies of material use, the TMR figures are still rising, which implies that meaningful dematerialisation, in the sense of an absolute reduction in natural resource use, is not yet taking place. However, the parallel set of physical accounts illustrated in this report provide very useful information for decision-making. Indicators such as these physical flows, such as the TMR, can guide progress toward more efficient use of natural resources. For example, the OECD recently adopted as a long-term goal that industrial countries should decrease their material intensities by a factor of ten – a profound change that is not likely to occur unless the target and progress toward it can be explicitly measured. Apart from being a lesson for

Australia in what might be done to reduce impacts on our environment, it is also a warning that the terms of trade for commodity exports will probably get worse.

The nearest thing that we have to such studies in Australia is the CSIRO's OzEcco embodied energy model^{xxxix} of Australia's physical economy. It was developed to test some alternative scenarios of the future, and to explore the concept of sustainability. It is the first attempt to produce an integrated representation of the physical and economic systems in Australia. The design objective of the model is to test technological and policy options for the physical functioning of the Australian system out to the year 2050. Since it contains an input-output model of the Australian economy, it is useful for studying the interactions between various sectors of the economy and how a change in one area affects other areas. Scenarios of population growth are included, as is the demand for water and estimates of greenhouse gas emissions. However, it does not appear to include the hidden flows mentioned above and links with the environment seem to be limited to water use, plantation forests and CO₂ emissions. It also does not look at regional impacts of resource use, or what might be done to reduce resource use by the modification of industrial processes and more systemic design of industrial products and processes to enable re-use or recycling of materials. In other words, the model is supply-side oriented, so that demand management and increased efficiency of material use is not really an issue.

One of the most controversial recent attempts to integrate economics and ecology has been a calculation, published last year by ecologist Robert Costanza and 12 co-authors, of a monetary value for the world's "ecosystem services and natural capital"^{xxx}. Such services include the purification of air and water, the mitigation of floods and drought, pollination, pest control, and the generation of fertile soils. To quote their abstract:

The services of ecological systems and the natural capital stocks that produce them are critical to the functioning of the Earth's life-support system. They contribute to human welfare, both directly and indirectly, and therefore represent part of the total economic value of the planet. We have estimated the current economic value of 17 ecosystem services for 16 biomes, based on published studies and a few original calculations. For the entire biosphere, the value (most of which is outside the market) is estimated to be in the range of US\$16–54 trillion (10¹²) per year, with an average of US\$33trillion per year. Because of the nature of the uncertainties, this must be considered a minimum estimate. Global gross national product total is around US\$18 trillion per year.

They further explain that:

Because ecosystem services are not fully 'captured' in commercial markets or adequately quantified in terms comparable with economic services and manufactured capital, they are often given too little weight in policy decisions. This neglect may ultimately compromise the sustainability of humans in the biosphere. The economies of the Earth would grind to a halt without the services of ecological life-support systems, so in one sense their total value to the economy is infinite. However, it can be instructive to estimate the 'incremental' or 'marginal' value of ecosystem services (the estimated rate of change of value compared with changes in ecosystem services from their current levels). There have been many studies in the past few decades aimed at estimating the value of a wide variety of ecosystem services. We have gathered together this large (but scattered) amount of information and present it here in a form useful for ecologists, economists, policy makers and the general public. From this synthesis, we have estimated values for ecosystem services per unit area by biome, and then multiplied by the total area of each biome and summed over all services and biomes.

Various methods have been used to estimate both the market and non-market components of the value of ecosystem services. In this analysis, we synthesised previous studies based on a wide variety of methods, noting the limitations and assumptions underlying each.

Many of the valuation techniques used in the studies covered in our synthesis are based, either directly or indirectly, on attempts to estimate the 'willingness-to-pay' of individuals for ecosystem services. For example, if ecological services provided a \$50 increment to the timber productivity of a forest, then the beneficiaries of this service should be willing to pay up to \$50 for it. In addition to timber production, if the forest offered non-marketed, aesthetic, existence, and conservation values of \$70, those receiving this non-market benefit should

be willing to pay up to \$70 for it. The total value of ecological services would be \$120, but the contribution to the money economy of ecological services would be \$50, the amount that actually passes through markets. In this study we have tried to estimate the total value of ecological services, regardless of whether they are currently marketed.

Figure 1 shows some of these concepts diagrammatically. Figure 1a shows conventional supply (marginal cost) and demand (marginal benefit) curves for a typical marketed good or service. The value that would show up in gross national product (GNP) is the market price p times the quantity q , or the area $pbqc$. There are three other relevant areas represented on the diagram, however. The cost of production is the area under the supply curve, cbq . The 'producer surplus' or 'net rent' for a resource is the area between the market price and the supply curve, pbc . The 'consumer surplus' or the amount of welfare the consumer receives over and above the price paid in the market is the area between the demand curve and the market price, abp . The total economic value of the resource is the sum of the producer and consumer surplus (excluding the cost of production), or the area abc on the diagram. Note that total economic value can be greater or less than the price times quantity estimates used in GNP.

Figure 1a refers to a human-made, substitutable good. Many ecosystem services are only substitutable up to a point, and their demand curves probably look more like Fig. 1b. Here the demand approaches infinity as the quantity available approaches zero (or some minimum necessary level of services), and the consumer surplus (as well as the total economic value) approaches infinity. Demand curves for ecosystem services are very difficult, if not impossible, to estimate in practice. In addition, to the extent that ecosystem services cannot be increased or decreased by actions of the economic system, their supply curves are more nearly vertical, as shown in Fig. 1b.

In this study we estimated the value per unit area of each ecosystem service for each ecosystem type. To estimate this 'unit value' we used (in order of preference) either: (1) the sum of consumer and producer surplus; or (2) the net rent (or producer surplus); or (3) price times quantity as a proxy for the economic value of the service, assuming that the demand curve for ecosystem services looks more like Fig. 1b than Fig. 1a, and that therefore the area $pbqc$ is a conservative underestimate of the area abc . We then multiplied the unit values times the surface area of each ecosystem to arrive at global totals.

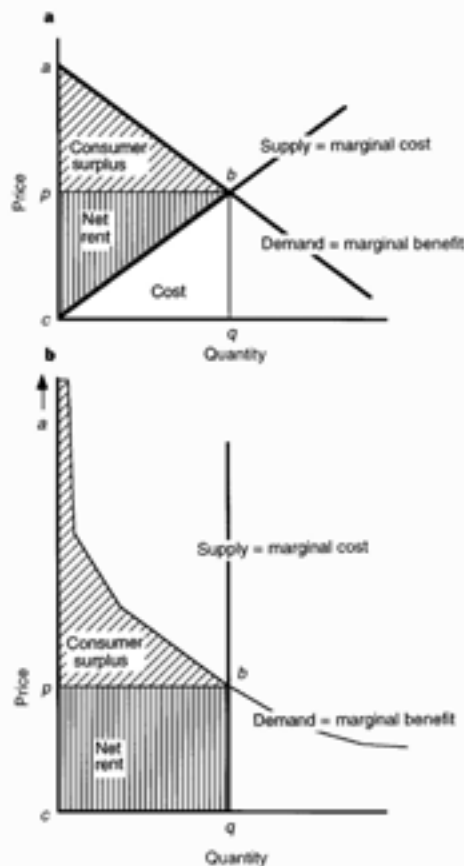


Figure 1 Supply and demand curves, showing the definitions of cost, net rent and consumer surplus for normal goods (a) and some essential ecosystem services (b). See text for further explanation.

There have been very few previous attempts to estimate the total global value of ecosystem services with which to compare these results. We identified two, based on completely different methods and assumptions, both from each other and from the methods used in this study. They thus provide an interesting check.

One was an early attempt at a static general equilibrium input–output model of the globe, including both ecological and economic processes and commodities. This model divided the globe into 9 commodities or product groups and 9 processes, two of which were ‘economic’ (urban and agriculture) and 7 of which were ‘ecological’, including both terrestrial and marine systems. Data were from about 1970. Although this was a very aggregated breakdown and the data was of only moderate quality, the model produced a set of ‘shadow prices’ and ‘shadow values’ for all the flows between processes, as well as the net outputs from the system, which could be used to derive an estimate of the total value of ecosystem services. The input–output format is far superior to the partial equilibrium format we used in this study for differentiating gross from net flows and avoiding double counting. The results yielded a total value of the net output of the 7 global ecosystem processes equal to the equivalent of US\$9.4 trillion in 1972. Converted to 1994 US\$ this is about \$34 trillion, surprisingly close to our current average estimate. This estimate broke down into US\$11.9 trillion (or 35%) from terrestrial ecosystem processes and US\$22.1 trillion (or 65%) from marine processes, also very close to our current estimate. World GNP in 1970 was about \$14.3 trillion (in 1994 US\$), indicating a ratio of total ecosystem services to GNP of about 2.4 to 1. The current estimate has a corresponding ratio of 1.8 to 1.

A more recent study estimated a ‘maximum sustainable surplus’ value of ecosystem services by considering ecosystem services as one input to an aggregate global production function along with labour and manufactured capital. Their estimates ranged from US\$3.4 to US\$17.6 trillion yr⁻¹, depending on various assumptions. This approach assumed that the total value of ecosystem services is limited to that which has an impact on marketed value, either directly or indirectly, and thus cannot exceed the total world GNP of about US\$18 trillion. But, as we have pointed out, only a fraction of ecosystem services affects private goods traded in existing markets, which would be included in measures such as GNP. This is a subset of the services we estimated, so we would expect this estimate to undervalue total ecosystem services.

The results of both of these studies indicate, however, that our current estimate is at least in approximately the same range. As we have noted, there are many limitations to both the current and these two previous studies. They are all only static snapshots of a biosphere that is a complex, dynamic system. The obvious next steps include building regional and global models of the linked ecological economic system aimed at a better understanding of both the complex dynamics of physical/biological processes and the value of these processes to human well-being. But we do not have to wait for the results of these models to draw the following conclusions.

What this study makes abundantly clear is that ecosystem services provide an important portion of the total contribution to human welfare on this planet. We must begin to give the natural capital stock that produces these services adequate weight in the decision-making process, otherwise current and continued future human welfare may drastically suffer. We estimate in this study that the annual value of these services is US\$16–54 trillion, with an estimated average of US\$33 trillion. The real value is almost certainly much larger, even at the current margin. US\$33 trillion is 1.8 times the current global GNP. One way to look at this comparison is that if one were to try to replace the services of ecosystems at the current margin, one would need to increase global GNP by at least US\$33 trillion, partly to cover services already captured in existing GNP and partly to cover services that are not currently captured in GNP. This impossible task would lead to no increase in welfare because we would only be replacing existing services, and it ignores the fact that many ecosystem services are literally irreplaceable.

If ecosystem services were actually paid for, in terms of their value contribution to the global economy, the global price system would be very different from what it is today. The price of commodities using ecosystem services directly or indirectly would be much greater. The structure of factor payments, including wages, interest rates and profits would change dramatically. World GNP would be very different in both magnitude and composition if it adequately incorporated the value of ecosystem services. One practical use of the estimates we have developed is to help modify systems of national accounting to better reflect the value of ecosystem services and natural capital. Initial attempts to do this paint a very different picture of our current level of economic welfare than conventional GNP, some indicating a levelling of welfare since about 1970 while GNP has continued to increase. A second important use of these estimates is for project appraisal, where ecosystem services lost must be weighed against the benefits of a specific project. Because ecosystem services are largely outside the market and uncertain, they are too often ignored or undervalued, leading to the error of constructing projects whose social costs far outweighs their benefits.

As natural capital and ecosystem services become more stressed and more 'scarce' in the future, we can only expect their value to increase. If significant, irreversible thresholds are passed for irreplaceable ecosystem services, their value may quickly jump to infinity. Given the huge uncertainties involved, we may never have a very precise estimate of the value of ecosystem services. Nevertheless, even the crude initial estimate we have been able to assemble is a useful starting point (we stress again that it is only a starting point). It demonstrates the need for much additional research and it also indicates the specific areas that are most in need of additional study. It also highlights the relative importance of ecosystem services and the potential impact on our welfare of continuing to squander them.

The question that immediately arises from such expensive ecosystem services is "Who on earth would pay for them?" If these values were included in the cost of natural resources, we would all be ruined. Yet, if we don't, the environment will eventually be ruined and we will all die. There is great pressure from business to privatise the environment so that someone will own it and have the incentive to look after it. That could lead to monopoly control, but the alternative is government regulation, and that hasn't worked very well either because the government is so weak and uninformed.

Appendix 3

Lots of Lovely Subsidies

What are Perverse Subsidies?

In a recent book published by the International Institute for Sustainable Development^{xxxi}, the following assertion is made about US subsidies:

A typical American taxpayer forks out at least \$2000 a year to fund perverse subsidies, and then pays another \$2000 through increased prices for consumer goods and services or through environmental degradation.

Subsidies are a prime feature of our economic landscape. That much is well understood. **Not so widely recognised are “perverse” subsidies, defined here as subsidies which exert adverse effects on both the economy and the environment in the long run.** The book documents the problem of perverse subsidies in five main subsidy sectors: agriculture, fossil fuels/nuclear energy, road transportation, water and fisheries. Total subsidies in these sectors, plus a few others, have long been thought to be around \$1 trillion worldwide per year, which means that subsidies play a prime role in the functioning of the global economy. If perverse subsidies amount to a sizeable proportion of subsidies overall, they exert a significantly distortive impact on the global economy. It puts the lie to assertions about “Free Trade” and “The Level Playing Field”.

There is no reason to believe that the situation in Australia differs very much from the US because Australian politicians frequently pay homage to the low-tax political system which indulges in corporate welfare while allowing one third of its population to live in poverty (What J.K. Galbraith called “Private riches and public squalor”). The book also quotes many examples from Australia and elsewhere.

The principal findings of the book are set out in Table ES.1 below. Total subsidies are estimated at around \$1,900 billion per year, and perverse subsidies \$1,450 billion. Plainly, then, perverse subsidies have the capacity to (a) exert a highly distortive impact on the global economy of \$28 trillion, and (b) inflict grand-scale injuries on our environments. On both counts, they foster **unsustainable development**. Ironically the total of almost \$1.5 trillion is two and a half times larger than the Rio Earth Summit’s budget for sustainable development—a sum that governments dismissed as unthinkable.

Note that:

- The OECD countries account for two thirds of all subsidies and an even larger share of perverse subsidies.
- The United States accounts for 21 percent of perverse subsidies.
- The single sector of road transportation accounts for 48 percent of all subsidies and 44 percent of perverse subsidies.

While the two totals—overall subsidies of almost \$1.9 trillion per year, and perverse subsidies, approaching \$1.5 trillion per year—may seem large to some observers, one should bear in mind that the documentation and calculations are often cautious and conservative to an exceptional degree. Moreover, many environmental externalities (including what could prove to be as big as the rest put together, viz. global warming) are either underestimated or omitted from the final results through sheer lack of documentation of economic costs entailed. In fact, the total for perverse subsidies, approaching \$1.5 trillion per year, is surely on the low side. In the road transportation sector alone, total costs worldwide are roughly estimated at around \$2 trillion per year, possibly more (*Delucci, 1997; Litman, 1996*), of which environmental externalities could account for \$1 trillion (*von Weizsacker, et al., 1997*).

Table ES.1

SUBSIDIES: OVERALL TOTALS (billion US\$ per year)

Sector	Conventional Subsidies* documented/ quantified	Environmental Externalities (range)**	Total Subsidies (range)**	Perverse Subsidies
Agriculture	325	250	575	460 (390-520)
Fossil Fuels/Nuclear Energy	145	***	145	110
Road Transportation	558	359	917 (798-1041)	639
Water	60	175	235	220
Fisheries	22		22	22
Totals (rounded)	1,110	785	1,895	1,450

* Subsidies of established and readily recognised sorts, including both direct financial transfers and indirect supports such as tax credits.

** Ranges: some of these estimates are supported by ranges: for details, see text. In some instances, estimates are not inserted because there is simply too little agreement even about ranges.

*** Regrettably it has not been possible to come up with even a reasonably agreed estimate for this value: the data are too patchy and disparate.

Note that the table shows that the major subsidies are for Road Transport, Agriculture, Water and Energy in that order. If the OECD countries account for more than two thirds of perverse subsidies (say 80%) and Australia accounts for 1.72% of OECD GDP, then on a pro rata basis, Australian perverse subsidies would be \$1.5 trillion x 0.80 x 0.0172 = \$20.7 billion. According to this book, Australia has US\$1.6 billion of farm subsidies. In the seven main coal producing countries of the OECD—the United States, Germany, Australia, the United Kingdom, Spain, Turkey and Canada—coal subsidies total around \$30 billion per year, with Germany accounting for \$21 billion (though these figures include many payments and other supports apart from producer subsidies) (*International Energy Agency, 1995*). Electricity is also subsidized in a few developed countries, notably the United Kingdom, Italy and Australia. Direct subsidies amount to at least \$10 billion per year, plus cross-subsidies amounting to another \$6 billion, or \$16 billion in all (*Organisation for Economic Co-operation and Development, 1997*; see also *Koplow, 1996*; *Shelby et al., 1994*). In Australia, the government of Victoria recovers only two-fifths of the delivery costs of irrigation water, and the government of New South Wales manages even less. Because of massive over-use of water, irrigated lands in New South Wales' portion of the Murray Darling Basin—specially important because they produce 90 percent of the country's irrigated food with just 6 percent of the country's water runoff—feature broadscale salinisation, water pollution, rising water tables and soil erosion (*Armstrong, 1996*; *Mussared, 1995*).

The Australian government subsidises some of its most environmentally damaging industries to the tune of US\$4.5 billion per year, and the environmental impact of those industries is expected to cost Australian taxpayers at least US\$5.9 billion^{xxxii}. The taxpayer ends up paying to damage the environment and then again to restore it.

Leading instances of perverse subsidies include:

1. German coal is subsidised to the tune of \$6.7 billion per year. It would be economically efficient—and would reduce coal pollution such as acid rain and global warming—for the government to close down all the mines and send the workers home on full pay for the rest of their lives.
2. The annual global ocean fisheries catch—well above sustainable yield—costs around \$100 billion to bring it to dockside, where it is sold for some \$80 billion, the shortfall being made up with government subsidies. The result is depletion of many major fisheries to commercial extinction, plus bankruptcy of fishing businesses and sizeable unemployment.
3. The European Union has subsidised excess food production until there have been milk and wine lakes and butter and beef mountains (not to mention a manure mountain in the Netherlands). In early 1993 cereal surpluses of 30 million tonnes would have been enough to provide a more-than-sufficient diet to 75 million people for one year. Taxpayers footed the bill to supply the subsidies that boosted these crops in the first place, then they paid again to store the excess stockpiles.
4. In the United States, one government agency heavily subsidises irrigation for crops that another agency has paid farmers not to grow. To cite the comment of an economist critic, Paul Hawken: “The government subsidises energy costs so that farmers can deplete aquifers to grow alfalfa to feed cows that make milk that is stored in warehouses as surplus cheese that does not feed the hungry.”
5. Also in the United States, gasoline is now cheaper than bottled water, thanks in major measure to subsidies of many sorts. Despite the view of many Americans that gasoline is expensive, it now costs less in real terms than 60 years ago. The same applies to many other aspects of United States road transportation, thanks to extensive subsidies. It may be said that Detroit and oil companies are on a kind of welfare—the unpaid costs of road transportation amount to \$464 billion per year, which is equivalent to \$1700 per American. Hidden subsidies for oil serve to create an energy policy by default—a policy that is actually the reverse of the government’s stated priorities. Oil subsidies prolong the country’s risky dependence on foreign supplies, especially from the Persian Gulf. To quote Amory Lovins^{xxxiii} (referring to the US situation): “We’re spending money we don’t have, to defend ships that aren’t ours, to ship oil we don’t use, for allies who won’t pay, in pursuit of a policy we haven’t formulated.” Moreover, this de facto energy policy discourages private investments in new, cleaner technologies such as hyper-cars and other revolutionary forms of energy efficiency. Lovins suggests that the full use of superwindows (special reflective windows) on US buildings could save more oil and gas than Alaska now supplies.

Perverse Subsidies In Australia

Some of these subsidies no doubt sound familiar – they should! We too spend taxpayers money on subsidies which have the perverse capacity to simultaneously distort the economy in a way that was not intended and then make us spend more money to repair damage to the environment caused by the activity that was subsidised. Not since the 1974 have subsidies to the environmentally damaging exploitation of natural resources been subjected to intense scrutiny.^{xxxiv} This Inquiry came to the breathtaking conclusion that:

“When Australian Government pay-outs in subsidies and concessions to these minerals and energy companies were deducted from tax collected, Australia was \$55 million in the red.”

In other words, the Australian tax-payer paid the multi-national companies \$55 million to take our minerals away! There is little to suggest that this problem has gone away. The Fraser Government's 1976 budget became known as 'The Miners' Budget' – for a good reason. A leading financial journalist at the time, Robert Gottlieb, commented that: "Most of their dreams have come true at once." The Treasurer who presented that Budget is now our Prime Minister.

An investigation by the ATO^{xxxv,xxxvi} last year revealed that more than half of the multi-national companies operating in Australia paid no tax at all in Australia, and most paid less than 10% of their declared profit. The ATO is also concerned that widespread use of transfer pricing, intra-company loans, imported technology and equipment, and tax havens, are being used to reduce the tax liabilities of these companies in a big way.

In this context then, it is strange that the mining industry is not mentioned at all in the 1996 DEST report 'Subsidies to the use of natural resources'². In fact, apart from coal, oil and gas, the mining, manufacturing and construction industries were not included, despite their use of non-renewable resources, water resources, and their effect on the environment. Even those areas that were covered have been dealt with in a rather narrow way. For example, tax concessions and environmental subsidies are not covered completely, even though they are likely to be far larger than direct financial subsidies. Likewise, the future costs of the enhanced greenhouse effect are not covered properly either. Basically, anything that was regarded as too difficult to estimate was left out altogether!

The diesel fuel rebate for farmers and miners is not included because it is mainly applied to fuel used for off-road vehicles, machinery and power generation, whereas the excise is regarded as a road user charge, even though it is also paid by the railways. This is a rather specious argument because the excise does not come anywhere near covering the cost of the externalities. The externalities of non-road fuel use were considered to be negligible in rural areas because few people would be affected by the atmospheric emissions (pollution). They made no mention of the effect of pollution on crops, trees and other plants and animals, or of the effect of energy-intensive farming practices on the soil and crop yields. They admit that if the excise is seen purely as a revenue tax (which it is because the tax is not hypothecated to the construction and maintenance of roads), then the rebate might be seen as a subsidy, but they do not seem to appreciate that the economics of renewable energy in remote areas are crucially affected by the rebate, especially for heating, cooling and power generation. The diesel fuel excise is currently worth \$4.5 billion, but the rebate to miners is \$870 million and the rebate to farmers, foresters and fishermen is \$646 million in 1998-99. Hence the total rebate is now worth \$1.5 billion (compared with \$1.15 billion in the DEST report). The truth is that the excise is regarded as a source of revenue, and the rebate should be regarded as a subsidy to those industries eligible for it.

They define a “normal” rate of return as the opportunity cost of capital use in the community, one that reflects the cost to the community of using public assets. Then, after pointing out that government bond rates have fluctuated from 2% to 13% during this century (corresponding to real rates of 1% to 6% if you allow for inflation), they decide to adopt the rather high rate of 8% as a benchmark for their study and defend this choice by suggesting that it is comparable with current rates of return, even though the current real rate is about 3%! It can be justified to add a small risk margin to this real rate, which would give a discount rate of say, 4%, but not 8%. The size of the discount rate is very important because it makes a big difference to the annualised cost of capital projects. In WA, for example, differential discount rates were used to show that wind power was less economic than a coal-fired power station when in fact the reverse was true. A very high discount rate of 15% was used for the wind-power option and a much lower rate for the power station! (Gilchrist, p.175)^{xxxvii} There was no justification for the higher rate because wind power is now a mature technology with no more risk than a power station. Indeed, the risk is less because it

can be built in a modular fashion in line with demand and does not take so long to build. US economist Shimon Awerbuch has recommended that high, market-based discount rates are not applicable to renewable energy technologies because long-lived benefit streams reflect society's time preferences. The social rate of time preference discount rate approximates the long-term growth rate of developed economies, about 3.5% a year. (Gilchrist, p.57) According to J. Quiggin^{xxxviii} (p.153), the risk premium attributable to public debt should be about 1%. If this is added to the current real bond rate, we get a discount rate of about 4%. For comparison, private power authorities in the United States typically use a real discount rate of 6% (Gilchrist, p.175) These rates are all less than 8%! Moreover, when you look at the economics of environmental benefits (such as planting trees as sinks for greenhouse gases), the growth rate of trees is too slow to show a return at high discount rates. This is why so many distortions arise in the use of natural resources. To achieve ecologically sustainable development, which implies inter-generational equity, we must not discount the future. This is the real dilemma for the pricing of natural resources and making economic decisions which affect the environment. **While discounting money may make sense, discounting environmental values seems to be an example of what Daly and Cobb^{xxxix} call 'misplaced concreteness': in other words, getting mixed up between the measure (in this case, money) and the real world (the environment), and assuming that the real world behaves as the measure does. Just because people would rather have money now than later, this does not mean that they will value the maintenance of an area of environmental significance less each year into the future.**

The valuation of environmental subsidies in the DEST report is dominated by the "abatement cost" or "control cost" of environmental damage. However, due to the very limited knowledge of the extent of damage to the environment, this is usually interpreted as the cost of maintaining the damage at acceptable levels in the short term. Even the contingent valuation method is flawed because the people asked may have little idea of the long-term consequences of environmental damage and people who feel that they have no alternative to carrying out activities which damage the environment (such as miners, timber workers or fishermen) tend to discount the damage heavily, putting more value on exploiting the environment.

Taking the Costanza estimate^x of 1.8 times GDP as the true cost of environmental subsidies, then with a GDP of \$500 billion per annum, the annual cost would be \$900 billion! This is two orders of magnitude greater than the \$8 billion (admittedly a partial estimate) figure suggested by the DEST report. It suggests that a much more fundamental review of environmental costs in Australia should be undertaken, and that it should include a wider range of natural resources and all the sectors (such as mining, manufacturing and construction) left out of the DEST report.

The Question of Tax

Financial subsidies to enterprises in both the public and private sectors can be disguised in the form of tax concessions. However, detailed analysis of tax treatment of the resource activities was considered beyond the scope of the DEST study and discussion was limited to areas where tax subsidies may arise, e.g. in electricity generation. Tax concessions to other industries are at least as large as the indirect subsidies considered in the report.

A quick examination of the 1997 Treasury report on Tax Expenditures^{xli} shows that total tax expenditures amounted to \$19.5 billion in 1996/97, or \$10.8 billion if superannuation concessions are excluded. If deferred tax (mainly 'timing' tax expenditures such as the accelerated depreciation allowance (AD8)) are taken into account, the total budget impact is around \$21.1 billion in 1996/97.

Taking all of the first two items (Fuel and Energy, Agriculture, Forestry and Fishing) from the table 'Aggregate Tax Expenditures by Function 1995-96 to 2000-01' and a fraction (say 1/3) of the remainder (Mining, Manufacturing, Construction and transport) as being in rural areas and associated with the exploitation of natural resources, then current tax expenditures for that

purpose would be about \$3.09 billion! If you then add direct outlays for the first two items and 1/3 of the third (percentage of transport outlays unknown), the total outlays related to the exploitation of natural resources in 1996/97 would be \$2.48 billion. This gives a total of \$5.57 billion, very close to the total financial subsidies (government payments and revenue foregone) figure of \$5.7 billion for 1993/94 given in the DEST report, but it appears that the DEST figure is mostly additional to the above outlays and tax concessions because the DEST figure largely concentrates on electricity and water subsidies, and did not cover tax concessions in detail. It all suggests that the financial subsidies have been grossly under-estimated.

Environmental Subsidies

The quantified estimate of \$8 billion for environmental subsidies is an incomplete estimate because such subsidies were not estimated for most areas. Of this figure, the bulk of it is \$2.5 billion for electricity-related greenhouse & pollution, and \$1.4 billion for other fuel-related greenhouse (coal, oil, gas and renewables not estimated due to lack of data), \$0.2-1.32 billion for transport-related greenhouse, giving a total of \$1.08-5.2 billion for energy-related environmental subsidies. Similar subsidies on water supplies are not estimated. The subsidy on waste water (sewage) was \$3.5 billion and solid waste \$0.14 billion. Environmental subsidies on forest products were not estimated. Finally, there is just \$0.03 billion allowed for fisheries. Hence, the major categories are greenhouse and waste water, not much else being estimated. Even the above estimates seem rather suspect because where a range of values was encountered, the values chosen tend towards the low end.

It is not well known that the processing and liquefaction of natural gas for export as LNG from the NW Shelf requires a considerable amount of energy. In fact, this energy amounts to about $\frac{1}{3}$ of the energy in the gas exported, or $\frac{1}{4}$ of that actually produced. This energy does not appear in any official statistics because it is used internally by the producers of the gas and is not sold. However, the LNG exported was 321 PJ in 1993-94, so about 100 PJ must have been used in processing. The pollution and greenhouse gases associated with the combustion of that amount of gas is quite significant, being equivalent to the pollution from all of the LPG produced in Australia, or $\frac{1}{10}$ th of all the natural gas produced. Assuming a 30% conversion efficiency to electricity and an environmental cost of 1 c/kWh as given on page 42 of the DEST report, the environmental cost of producing LNG for export would amount to:

$$(100 \times 10^{15} \text{ J} / (3.33 \times 3.6 \times 10^6 \text{ J})) / 100 = \$8.34 \times 10^7 = \$83.4 \text{ million.}$$

The veracity of this figure will of course depend on whether the 1 c/kWh is an appropriate figure in the first place. It is lower than the figure quoted by Stocker et al (mentioned in the DEST report), and it does not appear to include greenhouse charges. The DEST report also does not appear to include the environmental costs for quite large amounts of gas used for mineral processing (eg. bauxite), cement, aluminium smelting or paper manufacture.

According to Manins (Outlook 97)^{xlii}, the costing of transport externalities has grossly underestimated the cost of air pollution by only including the impact of toxic components, avoiding the greater problem of non-specific associations between particle loading and mortality and morbidity. He quotes the figures from other studies which suggest a cost due to particulate pollution of \$3.0-5.3 billion, ten times as great as the estimates in previous studies, and comparable to estimates of congestion costs. This would be in addition to other transport externalities of about \$9 billion. These figures suggest that the figures presented in the DEST report require much closer examination to work out what has or has not been included.

Eliminating Perverse Subsidies

Some useful suggestions for the elimination of perverse subsidies have been presented in an OECD publication^{xliii}. It describes the political, institutional and trade issues that make it so difficult to eliminate any subsidy, let alone perverse subsidies. Subsidies that encourage human action damaging to the environment are perverse because they create incentives to behave in ways which decrease social welfare. In order to analyse such situations, one must first examine the

environmental problems that arise from the human activity that is encouraged by these subsidies. Panayotou's list of Economic Manifestations of Environmental Degradation (below) is a useful starting point for analysing such situations. It gives the economist a list of signals that indicate problems. These can then be followed up with further analysis.

**Figure 1. PANAYOTOU'S REPRESENTATIVE LIST OF
ECONOMIC MANIFESTATIONS OF ENVIRONMENTAL DEGRADATION'**

The first step for understanding the root causes of environmental degradation is to look for its economic manifestations, to help define the true dimension of the problem, and to suggest the scope and opportunity for cost-effective intervention. Economic manifestations are counter-intuitive observations or contradictions (puzzles); their very identification calls for an analytical explanation (why?); and a policy implication (what and how?). The following is a representative list of such economic manifestations of environmental degradation:

- Overuse, waste and inefficiency co-exist with growing resource scarcity (shortages).
- An increasingly scarce resource is put to inferior, low-return, and unsustainable uses, even though superior, high-return and sustainable uses exist.
- A renewable resource, capable of sustainable management is exploited as an extractive resource (i.e. it is mined).
- A resource is put to a single use, when multiple uses would generate larger net benefits.
- Investments in the protection and enhancement of the resource base are not undertaken, even though they would generate a positive net present value by increasing productivity and enhancing sustainability.
- A larger amount of effort and cost is incurred, when a smaller amount of effort and cost would have generated a higher level of output, more profit and less damage to the resource.
- Local communities and tribal and other groups, such as women, are displaced and deprived of their customary rights of access to resources, regardless of the fact that, because of their specialised knowledge, tradition and self-interest, they may be the most cost-effective managers of those resources.
- Public projects are undertaken that do not make adequate provision for, or generate sufficient benefits to, compensate all those affected (including the environment) to a level where they are decidedly better off "with" than "without" the project.
- Failure to recycle resources and by-products, when recycling would generate both economic and environmental benefits.
- Unique sites and habitats are lost, and animal and plant species go extinct without compelling economic reasons which counter the value of uniqueness and diversity and the cost of irreversible loss.

Making Markets Work and Prices Tell The Truth

The basic steps are:

- Remove perverse subsidies
- Internalise the externalities
- Invest in saving resources wherever that is cheaper than extracting new ones
- Make markets in saved resources (eg. "Negawatts")
- Use prices that tell the truth

- Reward the behaviour you want, not its opposite
- Tax the undesirable, not the desirable
- Scrap inefficient devices prematurely and replace them with efficient ones

These basic principles have been described by Weizsacher & Lovins^{xliv} and H.M. Hubbard^{xlv}. Instead of treating the preservation of the environment as a COST (the supply-side approach), market forces need to be steered in more constructive directions by making markets in saved resources and encouraging the more efficient use of resources (demand management). It is not a problem of developing new technology or waiting for some new scientific breakthrough – the problems lie more in the politics of vested interests. Technologies already exist for many resource-saving innovations, but institutional problems, out-dated thinking by decision-makers, and market failure, are preventing these innovations from being used. The lack of ‘no-regrets’ measures in the greenhouse response modelling by ABARE is a direct result of their assumption of ‘perfect’ markets. In reality, market failure is everywhere! The fact that ABARE’s advisory committee on greenhouse policy is dominated by producers of fossil fuels and other organisations with vested interests in the exploitation of resources speaks for itself! Their interests in the exploitation of resources explain why ABARE espouses the approach of ‘pollution abatement’ so ferociously. They want the environment to be seen as a cost and their job is to reduce costs.

How, then, do we make markets work and make prices tell the truth? After removing perverse subsidies and tax concessions for activities related to the exploitation of natural resources, the principle of ‘least-cost planning’ (also known as ‘integrated resource planning’) should be introduced. Many people do not like any sort of planning except when it is carried out by a corporation, but a degree of politically accountable oversight is perfectly justified for the exploitation of ‘public goods’ such as natural resources and ecosystems (the ‘common’ wealth). When a new dam, irrigation scheme, power station, highway, uranium mine or pulp mill is proposed, there are inevitably public and environmental costs. The least-cost principle requires that we ask: What is the purpose of the project and is this the best way of achieving it? Like the US Intermodal Surface Transport Efficiency Act and amendments to their Clean Air and Clean Water Acts, a wide range of alternatives, including efficiency-based alternatives, should be given fair consideration alongside supply-side options.

One reason why this does not occur in Australia (apart from differences in the law) is that the profit of the organisation (whether it be a company or a public utility) increases with the quantity of the resource sold. There is a split incentive involved in reducing demand through greater efficiency – the organisation does not want to invest in something that will reduce its sales, even if the customer (or the citizen) would benefit. This problem was overcome with US power utilities by allowing the utility to keep a share of whatever it saved its customers. Eg. In 1992, Pacific Gas & Electricity (a Californian utility) spent more than \$170 million helping its customers to save electricity – the largest such program in the world. That single year’s investments yielded net benefits worth \$300-\$400 million. Of that created wealth, the customers got 85% as lower bills, while the shareholders got the rest – more than \$40 million – as higher dividends.¹⁴

In 1994, numerous field studies confirmed that the efficiency programs had in fact saved the amount of energy predicted, and had done so at far lower cost than producing the same amount of energy. The Californian authorities have also stopped the practice of ‘retail wheeling’ (a scheme now becoming common in Australia in which any utility customer can pretend to buy electricity directly from any supplier at prices they alone determine). It allows large industrial customers to shift the costs of the most expensive power stations to smaller and weaker customers instead of fairly sharing all costs among all customers and rewarding utilities for reducing those costs.

Some US utilities have now gone beyond educating customers about saving energy and have started to finance their customers’ insulation and other home improvements at low or zero interest. Some even give away compact fluorescent lamps and high-performance shower heads because the savings are worth much more than the costs. Some utilities offered rebates not just for buying efficient new equipment, but also for scrapping inefficient old equipment so that nobody would ever use it again. Numerous other options are available to save energy and money, so they are being vigorously explored. People want lighting and heating at least overall cost, not cheap electricity as such. It is time that we explored some of these options in Australia. Similar innovations are possible for the supply of gas, water and transport.

The next step towards making prices tell the truth is to introduce Ecological Tax Reform, or Pigovian taxes (named after the British economist Arthur Pigou). It is a way of internalising the externalities. Although there are many opportunities for achieving greater efficiency of resource use now, with current prices and current technology, the incentive to develop even better technologies and implement them rapidly would follow the imposition of ETR. A revenue-neutral ETR could lead to economic gains if the losses inflicted by the previous taxes were higher than potential losses resulting from the new tax. For example, the use of revenue from a carbon tax to allow the elimination of payroll tax would make labour more affordable and reduce unemployment. There have been many proposals for green taxes and some of them have already been implemented in the

European Union. In 'Ecological Tax Reform in Australia', Hamilton et al^{xlvi} present a range of such taxes on fossil fuels, water, industrial wastes, natural amenities and native forests. When combined with energy efficiency standards, rebates on the purchase of fuel-efficient vehicles, land-fill charges, tradable permits for irrigation water, bans on the logging of high conservation value native forest and increased royalties on logs from native forests, the overall impact on the economy could be very positive while also protecting the environment. The diesel fuel rebate should be abolished and fuel excises increased to reflect the cost of externalities associated with the supply and use of those fuels.

As an example of how such a system might work with irrigation water, consider the current controversy over environmental flows in the Snowy River. A recent report in the Age^{xlvii} said that:

The Snowy River should be given back 15 per cent of its original flow, according the final report of the Snowy Water Inquiry.

About 99 per cent of the Snowy's original flow was channelled into the Murray and Darling Rivers for power generation and irrigation when the Snowy Mountains Hydro Electric Scheme was finalised in the 1960s.

A spokeswoman for Environment Victoria, Ms Freya Merrick, said three successive scientific panels had recommended that at least 28 per cent of the Snowy's original flow be restored.

"The Snowy needs at least 28 per cent to bring it back to life. That's a threshold. Going halfway will not result in half the benefits and they seem to have missed that point," she said.

On the other side of the fence, the Ricegrowers Association of Australia said anything involving taking water savings from farmers was unacceptable.

A possible solution to this dilemma might be to reduce irrigation flows by 15% as already decided, but increase unit water charges by 18% so that total water charges remain the same. Hence, the water authority will lose nothing, even though the water is still subsidised. The farmers will have to reduce their water usage initially, but they will continue to pay the same amount as before. The water will not cost less. If the farmers are then put on notice that water charges will rise 5% per annum from now on, that the increased revenues will be used to finance modifications to the irrigation channels to reduce seepage and evaporation losses as well as to provide cheap loans to farmers so that they can invest in more efficient irrigation and agricultural practices, but they are also allowed to sell excess water rights to other farmers, then total water consumption for irrigation in that area should gradually fall without great costs being imposed on farmers. As long as their water consumption falls to a greater extent than the price increase, they will pay no more than before, but the rising unit price will make them more aware of the value of the water and give them the incentive to conserve it. It should be made clear at the outset that the aim of the scheme is to restore full environmental flows (ie. at least 28%) in the Snowy without causing excessive financial demands on farmers or a drain on the taxpayer. Similar schemes could be devised for fuel, electricity and other resources to provide an incentive for more efficient utilisation. As long as the revenue from increased charges is used to finance improvements in efficiency, it should not have a negative effect on the economy. In the case of fuels and electricity, the certainty of rising prices would provide a spur to the development of alternatives such as renewable energy. With other resources, it would provide an incentive for greater recycling and the development of substitutes. Ultimately, it will help to reduce the impact of resource exploitation on the environment.

Appendix 4

Natural Heritage Trust: What happened to that \$1 billion for the environment?

Summary

Although there has been extra funding devoted to the environment as a result of the NHT, it has far less than \$1.25 billion. Cost-shifting at the Commonwealth and state levels, particularly the replacement of core funding in Environment Australia with NHT funds, has depleted the NHT.

The unwillingness of the Federal government to link environmental performance to the provision of funds has also resulted in the squandering of funds. The single biggest environmental commitment the Howard government made was to turn around Australia's rate of vegetation loss to have a net gain of vegetation by the end of the NHT (2001). On current trends this outcome is near impossible and will remain that way while funding is not tied to performance. Vegetation clearing and associated habitat destruction continues at a high rate despite the NHT.

Funding of dubious projects has also diminished the NHT's ability to achieve tangible environmental outcomes.

It is difficult to exactly quantify the cost-shifting and inappropriate funding because full access to figures and program details is not possible. However, a reasonable estimate is presented in table 1. It uses as its base the level of funding for DEST and DPIE environmental programs in the last year of the Keating government using the same budget figures as in the graphs and other tables in this report. It projects the cost-shifting for the entire duration of the NHT but breaks it into two sections: the actual expenditure during the term of the Howard government, and the forward estimates for the remainder of the NHT period.

Cuts in core environmental expenditure since the Keating government (table 1)

In term of Howard government	
DPIE	
97/98	\$25M
98/99	\$25M
DEST/EA	
96/97	\$45M
97/98	\$52M
98/99	\$70M
In forward estimates for term of NHT	
DPIE	
99/00	\$44M
00/01	\$44M
EA	
99/00	\$105M
00/01	\$119M
TOTAL	\$529M

If one assumes 5% cost-shifting by States and Territories for the life of the NHT this adds another \$62.5 million. This is likely to be a conservative figure bearing in mind that the ANAO reports 40% of State and Territory agency projects were rejected in 1997/98 because of cost-shifting attempts and that panel members report cost-shifting and double-dipping attempts were rife and sophisticated.

If one assumes that 5% of the funding for the life of the NHT was funding for environmentally dubious or inappropriate projects this adds another \$62.5 million. This figure is also likely to be conservative giving the \$12 million expenditure for the Hume dam and approximately \$50 million for irrigation/drainage schemes during the life of the NHT and therefore does not account for other dubious expenditure identified by environmentalists and/or political parties such as farm forestry schemes and funds for industry promotion officers etc.

Total of cost-shifted funds and dubious projects (table 2)

Commonwealth cost-shifting	\$529M
State cost-shifting	\$62.5M
Funding for dubious projects	\$62.5M
TOTAL	\$654M

This indicates that over half of the NHT (\$624 million of \$1.25 billion) has been (or will be) of no additional benefit to the environment as it has been used to either fill funding cuts at various levels of government or has gone to projects of little or no environmental value. Only about half of the NHT funding has been additional to the funding that existed at the time the Howard government came to office and this only amounts to an average of \$120 million per year.

Securing Our Environment

**Submission on the Environment to the
Federal Government Budget 1998-99**

February 1998

Executive Summary

1. Given the enormity of the environmental protection task in Australia, Federal government fiscal policy assumes considerable importance.
2. Even with the application of short term NHT funds, environment-focussed expenditure commitments are projected to be only \$503 million in 1998-99 (based on Government forward estimates), or 0.37 per cent of total 1998-99 budget outlays, or 0.13 per cent of GDP. ACF argues that this level of funding is still totally inadequate.
3. ACF is undertaking two major studies which will provide substantial new information on the nature and level of government funding needed to protect the environment. The two studies are an 'Extended State of the Environment Report' and an assessment of NHT expenditure priorities. Results from these studies will form the basis for a substantial new budget submission in 1999-2000.
4. In the short to medium term, ACF believes that there are two fundamental issues which the Federal Government must address through the Budget and related economic policy if environmental protection is to be improved in Australia. These are taxation reform and strengthening the government's economic and environmental policy frameworks.
5. ACF argues that the taxation system should be restructured so as to meet the broader principles of ESD. This means removing distortionary tax incentives and subsidies which encourage unsustainable resource use or taxes which discourage environmentally beneficial activity. Recent reports indicate that subsidies of this nature are still very extensive.

New taxes and incentives are also needed to encourage environmentally beneficial activities. The effective use of 'green taxes' and 'green incentives' would promote investment in those areas of the economy which are likely to be both profitable and environmentally sound, and provide strong disincentives for activities which are environmentally damaging.

ACF proposes a series of measures for the 1998-99 Budget which can help the Government to restructure the taxation system consistent in a manner consistent with ESD. These proposals should not be seen as a comprehensive taxation policy. Rather, they represent an initial menu of measures which are indicative of the sort of taxation reforms needed to achieve ESD. A comprehensive ACF taxation policy is currently under development.

Removal of distortionary tax incentives, subsidies and taxes

Proposals in this area include:

- *Removal of tax deductions for land clearing. (R1-3: Revenue via savings, uncosted)*
- *Abolition of the Diesel Fuel Rebate to the forestry and mining industries and to the farm sector. (R4: Revenue via savings: \$1300 million, recurrent)*
- *Removal of tariff and tax advantages for four-wheel drive vehicles (R5: Revenue via savings uncosted)*
- *Elimination of fringe benefit tax concessions which encourage the provision and use of company cars (R6: Revenue via savings: \$300 million, recurrent)*
- *Sales tax exemption on recycled paper (R7: uncosted)*
- *Sales tax exemption on recycled plastics (R8: uncosted)*
- *Decrease in state payroll tax (R:9 Cost, \$1000 million in 2001/2002).*

New eco-taxes and eco-incentives

Proposals in this area include:

- *An environmental levy on personal income of 0.5% of taxable income. (R10: Revenue, \$1250 million in 1998-99, recurrent)*
- *An export woodchip levy of 15 per cent. (R11: Revenue, \$65-100 million in 1998-99)*
- *Environmental water use levy (R12 : Revenue, uncosted)*
- *A carbon levy at \$8 per tonne of emitted carbon, with the revenue raised to be devoted to energy conservation, broadly defined. (R13: Revenue, \$880 million in 1998-99)*
- *Skewed sales tax on new motor vehicles. (R14: revenue neutral)*
- *Consumer technology rebate (R15: uncosted)*
- *Incentives for clean production (R16-17: uncosted)*
- *Tax deductions for conservation projects (R18-19: uncosted)*
- *Farm tax conservation incentives (R20-21: uncosted).*

6. Policies relating to ecologically sustainable development affect and are affected by all spheres of government. ACF is concerned that governments have failed to integrate environmental and economic planning. The pursuit of ESD requires better coordination within and between governments on environmental and economic policy, improved environmental auditing and reporting and more detailed environmental economics information. ACF proposes a series of measures for the 1998-99 Budget to achieve these objectives.

Strengthening government economic and environmental policy frameworks

Major proposals in this area include:

- *A Bureau of Environmental Economics to provide the Minister for the Environment with strategic environmental-economic policy advice and produce a Green Budget (R22: Cost: \$5 million in 1997-98).*
- *Production of a Green Budget:*
- *(R23: Cost: \$ 0.5 million, recurrent);*
- *A statutory Office of Environmental Assessment, to perform three major tasks: environmental audits of Commonwealth departmental activities and programs; Environmental Impact Assessments; national State of the Environment reports. (R24: Cost: \$5 million, recurrent).*

Summary of Recommendations³

Recommendation	Department	Revenue/ (Expenditure)	(Page)
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³ ***Note on Estimates and costing in this Submission***

The estimates and costings in this submission are based on past Federal Budget statements and Commonwealth Public Accounts; departmental Program Performance Statements; regular and occasional departmental reports (such as from ABARE); published information about income tax revenue and base data; information from the Australian Bureau of Statistics; and formulae for costing employment-related programs (training costs; wages; establishment costs; etc). However, it has also not been possible to provide costings for all proposed items of expenditure or revenue - these are represented as \$ [uncosted], in the text.

\$ million

TAXATION REFORM

REMOVAL OF DISTORTIONARY TAX INCENTIVES, SUBSIDIES AND TAXES

1,2,3	Removal of tax deductions for land clearing	Treasury	uncosted	9
4	Cancellation of diesel fuel rebates	Treasury	\$ 1300	11
5	Removal of tariff and tax advantages for 4WD vehicles	Treasury	uncosted	11
6.	Revised fringe benefits tax for company cars and parking	Treasury	\$ 300	12
7	Sales tax exemption on recycled paper	Treasury	uncosted	12
8	Sales tax exemption on recycled plastics	Treasury	uncosted	13
9	Decrease in state payroll tax	Treasury	(\$ 1000)	13

NEW ECO-TAXES AND ECO-INCENTIVES

10	Environmental levy	Treasury	\$ 1250	15
11	Export woodchip levy	Treasury	\$ 65-100	16
12	Environmental water use levy	Treasury	uncosted	16
13	Carbon levy	Treasury	\$ 880	17
14	Skewed sales tax on new motor vehicles	Treasury	revenue neutral	20
15	Consumer technology rebate	Treasury	(uncosted)	20
16,17	Incentives for clean production	Treasury	(uncosted)	21
18,19	Tax deductions for conservation projects and land cons.	Treasury	(uncosted)	22
20,21	Farm tax conservation incentives	Treasury	(uncosted)	22

STRENGTHENING GOVERNMENT ECONOMIC AND ENVIRONMENTAL POLICY FRAMEWORKS

22	Bureau of Environmental Economic Research	EA	\$ (5)	24
23	Office of Environmental Assessment	DPMC	\$ (5)	25
24	Green budget	Treasury	\$ (0.5)	27

Introduction

Over the past decade environmental protection has consistently remained at the forefront of the Australian community's list of concerns. A recent national survey⁴ shows that 64 per cent of Australians rate 'the environment' as a very important issue for action by government, ranking third behind only unemployment and health.

This high level of concern is certainly warranted. *State of the Environment Australia 1996*, provides perhaps the best national overview to date of the state of the Australian environment. The report highlights the huge task facing governments and the community to achieve restoration and protection of the natural environment.

Given the enormity of the environmental protection task in Australia, Federal government fiscal policy assumes considerable importance. In 1997-98, the Federal government allocated \$ 255 million to its Environment portfolio⁵. This represented a welcome increase of approximately \$ 64 million on the previous year's allocation. The amount is projected to increase again to \$ 267 in 1998-99. In addition, another \$ 236 million is committed through the Primary Industries and Energy portfolio in 1998-99 for ostensibly environment-related programs.

All of the recent expenditure increases have essentially come through the *Natural Heritage Trust* (NHT), which in 1998-99 is expected to provide \$ 290 million of the total Federal government environment-based commitments of \$ 503 million⁶.

In purely expenditure terms the national trend looks, at first glance, quite positive for environmental protection. However, it needs to be recognised that even with the addition of the short term NHT, total environmentally-focussed expenditure commitments for 1998-99 will represent approximately only:

- 0.37 per cent of likely total federal Budget outlays; or
- 0.13 per cent of estimated Gross Domestic Product (GDP) ; or
- \$27 for each person in Australia.

ACF argues that, given the extent of environmental problems facing Australia, this level of funding is still totally inadequate. Furthermore, there are substantial questions marks against the environmental benefit of many of the NHT-funded programs.

Reviewing Government Environment Programs and Expenditure

ACF is currently undertaking two studies which will provide substantial new information on the nature and level of government funding needed to protect the environment.

⁴ Newspan survey, *How do you rate these issues?*, The Australian, 27 January 1998.

⁵ This does not include expenditure on the Antarctic, Bureau of Meteorology, Sport and Recreation, Territories and Corporate Services, all of which receive allocations through the Environment, Sport and Territories Department.

⁶ This total represents environment programme funding in the Environment and Primary Industries and Energy Portfolios only. There is, arguably, some additional environment-related programmes in other portfolios.

The first study, being researched through the course of 1998, is aimed at carrying forward the findings of *State of the Environment Australia 1996* to their logical conclusions. Implications of the condition of the Australian environment are to be developed to ascertain the policies needed to achieve sustainability in Australia. The ACF 'Extended State of the Environment Report' will include in its analysis a detailed discussion of the level and direction of funding required from the federal government to contribute to this objective.

The second study is an NHT budget analysis aimed at assessing NHT expenditure priorities and levels. On a number of occasions ACF has expressed concern that unless financial and environmental accountability measures, including cross-compliance, were incorporated into the Commonwealth/State partnership agreements of the NHT, many of the funds would be wasted on programs which do little to further environmental protection. ACF has also pointed to the danger of using the model and delivery structure of Landcare, with its strong emphasis on maintaining agricultural productivity, with the result that the nature conservation and biodiversity goals of the Trust would be lost or subsumed. The NHT budget analysis will analyse total national expenditure on the environment over the past three years and the transfer of funds within the NHT. In particular it will focus on:

- the extent to which NHT funding is replacing previous Commonwealth programs;
- the extent to which NHT funding is replacing previous State/Territory programs; and
- transfer of funds to projects of dubious, little or no environmental value.

Reports arising from the two ACF studies will be released later in 1998. Results from these reports will then form the basis for a substantial new budget submission for 1999-2000.

In the meantime, two other aspects of government fiscal and broader economic policy must be addressed if environmental protection is to be improved in Australia. In this submission ACF proposes a series of measures for the 1998-99 Budget which represent initial steps toward reforming the taxation system along environmental lines and strengthening the government's economic and environmental policy frameworks.

Taxation Reform

Most economic activities cause environmental damage to at least some degree. Environmentalists have long argued that in the great majority of cases the full cost of this environmental damage is not reflected in the transaction prices of the activities concerned. If prices did fully reflect environmental damage costs, the price of more environmentally damaging products and services would rise, both in absolute terms and relative to less environmentally damaging activities. This would influence consumption patterns and reduce environmental damage.

In most situations the required price changes to an environmentally damaging activity can only be achieved by government action to levy an appropriate charge or tax on the activity. Conversely, any tax, whether or not it is levied with environmental goals in mind, increases the cost of the activity being taxed. As a matter of broad principle therefore, it is important to ensure that all tax incentives or rebates which actively encourage environmentally damaging actions are removed. Furthermore, it is preferable, where possible, to levy taxes on activities which are environmentally damaging, rather than activities which are environmentally neutral, and most emphatically not on activities which are environmentally beneficial. Finally, the taxation system should be structured so as to meet the broader principles of ecologically sustainable development including the principle of social justice and equity and the development of a more resilient, diverse and ecologically sustainable economy

Taxation reform is now a major issue on the national policy agenda. Since the present national tax system does not conform to the preferred model outlined above, ACF supports, as a matter of general principle, a comprehensive change to that system. A detailed position on taxation reform is currently being developed by ACF. In the meantime, ACF proposes a range of measures which are clearly warranted as part of the broader taxation reform agenda. These measures essentially fall into two categories of that agenda:

- removing distortionary tax incentives and subsidies which encourage unsustainable resource use or taxes which discourage environmentally beneficial activity;
- encouraging environmentally beneficial activities and actions through new taxes and incentives.

The taxation proposals in this submission should not be seen as a comprehensive taxation policy. Rather, they represent an initial menu of measures that are indicative of the sort of taxation reforms needed to achieve ESD. A more comprehensive ACF taxation policy is currently under development.

Removal of Distortionary Tax Incentives, Subsidies and Taxes

The first step towards taxation reform is to ensure the removal of all distortionary tax incentives and other Commonwealth economic subsidies which encourage unsustainable resource use and environmental damage. Taxation and other economic incentives for the use of natural resources can have a number of deleterious environmental impacts. Such subsidies encourage ecologically unsustainable practices by industry, consumers and governments, contributing to the over-exploitation and inefficient use of natural resources. In the process, the natural ecosystems from

which these resources are sourced are often degraded at a rapid pace. In the case of non-renewable resources, the resources are depleted at a faster rate than would otherwise be the case and the welfare of future generations is compromised accordingly.

These subsidies are inconsistent with other government policies and programs which are aimed at promoting ecological sustainability.

Although moves have been made in recent years to remove some of these distortions, many still remain. At both the state and commonwealth government level, numerous institutional, pricing, funding and other arrangements exist which effectively subsidise the use and management of natural resources. Recent reports indicate that subsidies of this nature are still very extensive in Australia. In 1996 the Department of Environment Sport and Territories released Subsidies to the use of Natural Resources, a report which reviewed financial and environmental subsidies to a range of industry sectors. Sectors studied included energy production, water and wastewater, solid waste disposal, forestry in native forests, agricultural chemicals and fisheries. (Mining was excluded from this study). The report concluded that, in terms of government payments and pricing subsidies, financial subsidies to the above sectors totalled ***“at least \$5.7 billion in 1993-94, equal to 4.4 per cent of total revenues of Australian governments.”***

Removal of distortionary economic subsidies would represent an initial step towards achieving full cost pricing which requires the removal of all subsidies - economic, environmental and social - associated with resource production and consumption. ACF proposes in particular that ongoing taxation rebates which encourage unsustainable practices and patterns of development and consumption should be removed immediately.

On the other side of the ledger, a number of existing taxes and government charges are distortionary in that they discourage environmentally beneficial or neutral activities. ACF proposes that these taxes and charges should be removed or modified.

Removal of tax deductions for land clearing

The ongoing clearing of native vegetation on private land is one of the most serious threats to biodiversity in Australia. It continues at an alarming rate. Each year, up to 500,000 hectares are still being cleared - half the annual rate for Brazil.

The threats to biodiversity from the loss or degradation of native vegetation are severe and widely recognised. They include the permanent loss of habitat for native species and a substantial contribution to enhanced climate change through the release of Greenhouse gases. The National Greenhouse Gas Inventory for 1995 estimates that over 17 per cent of total net greenhouse gas emissions come from land clearing. In addition, the causal connections between the clearing of native vegetation and land degradation are also well established.

The ACF believes that if the Federal Government is to honour its commitments under the international Biodiversity Convention and the Kyoto Protocol, it either must regulate to end clearing of native vegetation on private land or encourage States to do so through rigorous control over funding and taxation arrangements. ACF is currently developing a detailed proposal for state and regional cross-compliance mechanisms to ensure that the effectiveness of the Federal Government's Native Vegetation Initiative is maximised. In the meantime, remaining distortionary taxation incentives and rebates which have the effect of encouraging land clearing need to be removed.

R(1): ACF recommends that the Commonwealth should review all taxation arrangements in relation to land clearing and develop regional cross compliance measures (further details to be provided).

Cost: \$ [uncosted]
Implementing Agency: Treasury

R(2): ACF recommends that all tax deductions relating to the costs of labour, machinery and fuel expended during the modification or clearing of native vegetation, including draining or destruction of wetlands, on private land should be disallowed as business expenses.

Cost: Additional revenue (via savings) \$ [uncosted]
Implementing Agency: Treasury
Outcomes: Improved conservation of biodiversity and protection of remnant vegetation on farmland

R(3): ACF further recommends that tax deductions for the value of timber felled on land during the first year after acquisition, for land where the purchase price is attributable in part to the existence of that merchantable standing timber, should only be allowed where these trees are already specifically planted for plantation timbers on previously cleared land.

Cost: Additional revenue (via savings) \$ [uncosted]
Implementing Agency: Treasury
Outcomes: Improved conservation of biodiversity and protection of remnant vegetation on farmland

Diesel fuel rebate - abolition

ACF argues that the Diesel Fuel Rebate to the primary industry, forestry and mining sectors has a distortionary effect by encouraging the use of greenhouse emitting and polluting fossil fuels at the expense of sustainable energy sources such as energy efficiency and remote area renewable energy systems. The National Greenhouse Advisory Panel (NGAP) has stated that it “...sees diesel rebates as acting against the uptake of renewable energy systems, particularly in remote locations” and that “... the removal of the diesel rebate for stationary power generation would represent ...a step in the right direction” (NGAP 1997; p.29).

Some small amendments to the rebate scheme have been made to the scheme in the last two budgets to close some loopholes. However, the changes have not fundamentally altered the indirect subsidy inherent in the rebate, which is still available for most off-road diesel fuel consumption.

ACF has previously argued for the abolition of the diesel fuel rebate as it applies to the forestry and mining sectors only, and that the rebate continue to apply to the farming sector. At the time we recognised the importance of the Diesel Fuel Rebate to the farm sector on the basis that farmers and pastoralists were required to finance their environmental management responsibilities. However, given the Government’s commitment to the Natural Heritage Trust and Landcare, ACF believes that the NHT, provided that it is effectively implemented, represents a much more direct mechanism for ensuring that funding is provided to enable a transition to more ecologically sustainable land use.

R(4): The ACF recommends that the Diesel Fuel Rebate be cancelled to the forestry and mining industries and the farm sector.

Revenue (via savings): \$ 1300 million (recurrent)
Implementing agency: Treasury

Removing tariff and tax advantages for four-wheel drive vehicles

The Commonwealth currently imposes lower taxes and charges on the large, high fuel consuming, high pollutant emitting (especially particulates) four-wheel drive vehicles. These vehicles are also generally tax exempt even though they compete for the same market with more fuel efficient locally-made passenger vehicles.

R(5): In view of the high fuel consumption of four-wheel drive vehicles relative to other passenger vehicles and their contribution to urban air pollution, ACF proposes that the tariff and tax advantages currently available to imported four-wheel drive vehicles be completely removed.

Revenue: \$ uncosted (recurrent)
Implementing agency: Treasury

Revising fringe benefits tax for company cars and parking

Concessions exist within the existing fringe benefit tax system that encourage the provision and use of 'company cars', encourage the over-use of cars in inner urban areas and work against the public transport system. These should be eliminated.

R(6): The ACF proposes the elimination of the fringe benefits tax exemption which applies to parking spaces and an increase in the FBT relating to company cars to 30 per cent.

Revenue: \$ 600 million in 1998-99 (approximately) (recurrent)
Implementing agency: Treasury

Sales tax exemption on recycled paper

The ACF report, *The Environmental Impacts of Paper-Consuming Office Technologies in Australia*, has identified enormous environmental impacts associated with paper-consuming office technologies, in particular through the consumption of paper itself. The report found that about 230,000 tonnes of plain office paper were consumed in Australia in 1994/95, about four times as much as ten years ago.

The report also highlighted the significant environmental benefits of recycling office paper including:

- greatly reduced greenhouse gas emissions (one third of the amount associated with virgin paper over its lifecycle); and
- savings of 8 mature eucalypts and 3m³ of landfill for each tonne of office paper recycled.

Due to these benefits, the report recommended that an environmentally preferred copy paper would be made from 100% post-consumer waste. It also emphasised the need for the Federal Government to reinstate its Environmentally Preferred Paper Products Strategy.

Recycling rates of office paper are increasing in Australia but the majority of recoverable paper is still not recycled. An important means of improving office paper recycling rates is to encourage markets for recycled paper. The former Labor Government introduced exemptions for some recycled paper products from a 22% wholesale sales tax. Although there were some inconsistencies in the way the exemptions were applied, they generally enabled recycled paper to compete more effectively in the market with virgin paper which, in many cases, has major inherent environmental and economic subsidies associated with its production, especially paper sourced from native forests.

Unfortunately, the Labor Government removed the bounty in the 1995/96 Budget despite opposition from ACF, other environment groups and recycled paper manufacturers and wholesalers.

R(7): ACF recommends that the Federal Government exempt 100 per cent recycled paper from wholesales sales tax. It also recommends that 80% recycled paper be taxed at a concessional rate.

Cost:	\$ [uncosted] (recurrent)
Implementing Agencies:	Treasury
Outcomes:	Greater use of recycled paper. Increased rates of paper recycling. Reduced greenhouse gas emissions and landfill.

Sales tax exemption on recycled plastics

The ACF and the plastics industry also wish to see the exemption from wholesale sales tax extended to recycled plastic products, to encourage plastics recycling and reduce resource use and waste.

R(8): The removal of sales tax from recycled plastic products is also recommended, to increase efficiency of resource use and minimise waste.

Cost:	\$ [uncosted]
Implementing Agency:	Treasury

Decrease in state payroll tax

The ACF believes that taxes on labour - such as payroll tax - serve as an employment disincentive for industry (especially for small business). At the same time, natural resources are often underpriced and come with a host of hidden subsidies in the form of uncosted social and environmental 'externalities'. These distorted price signals encourage society to maintain lavish levels of resource consumption, waste and pollution.

The ACF proposes that this imbalance be adjusted over time, with certain taxes on labour reduced as significant taxes, charges and levies on natural resources are imposed or increased. Several new and increased environmental and resource-related taxes and levies are proposed in the following section of this submission.

The implementation of an expanded regime of Federal resource and environmental taxes, levies and charges as part of the tax reform process would require corresponding adjustment of State-based

charges. This would in part depend upon States agreeing to diminish payroll tax and similar imposts on business, in return for increased funding from Commonwealth resource taxes and levies. This transfer of the tax base would enhance incentives for employment by lowering labour costs and also promote efficiency of natural resource use by internalising the environmental costs and removing the hidden subsidies which distort natural resource-related decision-making.

R(9): The ACF recommends that the Federal Government negotiate an agreement with the States for reductions to payroll tax, to be subsidised by the Commonwealth from revenues derived from resource taxes and levies proposed in this Submission (excluding the proposed environmental levy).

Cost: Nil in 1998-99 (rising to \$ 1 billion in 2001/2002 and recurrent)
Implementing Agency: Treasury and State Governments

New Taxes and Incentives

The second step towards taxation reform is a broadening of the taxation base to one that promotes an ecologically sustainable economy, while reducing public indebtedness.

The ACF supports the use of economic instruments for implementing environmental policy where this is shown to be the most effective, administratively efficient and socially equitable approach to resolving environmental and resource use problems. ACF believes, however, that these must also be tied to social justice considerations - with corresponding rebates and assistance measures to ensure that impacts are not felt disproportionately by low income earners, pensioners and welfare beneficiaries.

The effective use of 'green taxes' and 'green incentives' would promote investment in those areas of the economy which are likely to be both profitable and environmentally sound, and provide strong disincentives for activities which are environmentally damaging.

For instance, accelerated rates of depreciation should be available to industrial investors for capital equipment which is highly resource or energy efficient; consumer goods which are rated among the most energy or resource efficient available should attract subsidies or rebates which enhance their market position. Conversely, natural resources - such as fossil fuels and timber - are often underpriced, leading to their rapid consumption and to a host of hidden subsidies in the unacknowledged costs of environmental 'externalities' such as waste and pollution. Taxes on the use of these resources would help to remove these hidden subsidies.

Both industry and consumer behaviour can be strongly influenced by the market signals which environmental and resource taxes provide, encouraging the production and consumption of environmental 'goods' in preference to the 'bads'.

Australia lags well behind other OECD countries in its development and use of instruments for implementing environment policy. Overseas, examples abound of the successful use of a combination of regulatory, educational and economic measures. While such instruments need to be tailored to suit Australian social and economic conditions, many would work well here.

ACF proposes a range of economic incentives and taxes and levies to encourage better environmental practice. In particular, it proposes several resource-related taxes and levies -

including an environmental levy, a carbon levy, a woodchip levy and an environmental levy on water use.

As previously discussed, these proposals foreshadow a more comprehensive taxation strategy from the ACF for raising resource and environmental taxes and levies and for offsetting the revenue from these taxes with simultaneous reductions in taxes on environmentally and socially beneficial activities such as payroll tax.

Environmental levy

As discussed in the introduction to this submission, ACF is concerned that, notwithstanding the advent of the *Natural Heritage Trust* (NHT), there is still a major under-funding of environmental programs in Australia. ACF doubts the ability of national agencies responsible for environmental protection to oversee national environmental protection and restoration without the certainty of a guaranteed, long term funding source.

ACF welcomes the NHT as a positive initiative, particularly for its potential to address land and water degradation. From the outset, however, ACF has expressed concern about the 'once-off' nature of funding for the Trust and the potential for it to be used to shift funding away from core environmental programs. Environmental protection should be seen as a core function of government, ACF argues, and should not be linked to the once-off sale of government assets.

Given these dual concerns - uncertainty about the long term maintenance of existing programs and uncertainty about funding for new programs - ACF argues that a major new revenue source for environmental protection must be initiated which is commensurate with its status as an issue of national importance. ACF therefore proposes the introduction of an environmental levy, to be imposed at the rate of 0.5 per cent of taxable personal income. All money raised through the levy must be earmarked for environmental protection and restoration so as to maintain and build upon Australia's natural capital base.

As with the Medicare levy, no environmental levy should be payable by low income earners. Welfare income recipients, single people earning less than approximately \$14,000 per annum and sole parents and couples with a combined income of less than about \$25,000 would not be required to pay the levy.

Estimated annual revenue from the levy would be \$1250 million.

The proposed environmental levy has an important precedent in the Medicare levy which is widely supported by the community as a major funding source for health programs.

R(10): The ACF recommends that the Federal Government introduce an environmental levy to be the major funding source for national environmental protection and restoration programs. The levy would be applied on personal income at the rate of 0.5% of taxable income. Low income earners would be exempted.

Revenue:	\$ 1250 million in 1998-99 (recurrent)
Implementing Agency:	Treasury
Outcomes:	Permanent funding source sufficient to enable national environmental protection and restoration programs to be

implemented on an ongoing basis. The levy is likely to have broad community support.

Export woodchip levy

The ACF opposes export woodchipping because of its unsustainable ecological impact where based on native forests, and because of the need to further process raw commodities in Australia. However, in lieu of this objective being realised, it recommends the immediate introduction of an export woodchip tax of 15 per cent to improve Australia's share of the economic surplus generated by Australian woodchip exports.

Numerous hidden subsidies have been identified in the export woodchipping industry. In addition, several studies have identified major problems with the accounting methods used in the industry, and underpricing and under-taxing of the exported resource. Due to this situation, the Resource Assessment Commission Inquiry into forests and forest industries recommended the introduction of a resources tax on woodchips.

Part of the revenue generated from the levy should be directed into grants for plantation establishment, agroforestry programs and research into further processing of timber from plantations.

R(11): The ACF recommends the introduction of a 15 percent levy upon Australian woodchip exports (including whole log exports).

Revenue: \$ 65-100 million in 1998-99 (recurrent but decreasing over time)
Implementing Agency: Treasury

Environmental water use levy

A Commonwealth sales tax on water for agricultural purposes could be used as an incentive for more efficient agricultural water use and to fund environmental activities. Imposed at 5 percent, this tax rate would rise to 20 percent over 10 years, to allow farmers and irrigators time to increase their water use efficiency. A full exemption would be available for those farmers returning 20 percent of their water entitlement/right to the environment under an agreed and Federally approved mechanism negotiated with the States. Given the almost intractable issue of water allocations and the imperative of reducing allocations for environmental purposes, this initiative will be at least partially effective in returning water to the environment.

Revenue collected would be hypothecated and used for environmental restoration of inland aquatic environments and to finance programs including :

- . fencing remnant vegetation
- . provision of off-river stock watering
- . riparian revegetation

R(12): The ACF proposes the graduated imposition of a Commonwealth sales tax on water for agricultural purposes. Imposed at 5 percent, this rate would rise to 20 percent over 10 years. Revenue would be hypothecated and used for restoration of inland aquatic environments.

Cost:	Revenue (\$ uncosted) recurrent
Implementing Agencies:	Treasury, State Water and Conservation depts.
Outcomes:	Increased efficiency of agricultural water use; increased water for environmental flows; revenue for environmental restoration

Carbon levy

International agreement on the Kyoto Protocol in December 1997 adds to the already strong impetus for international action to address global warming and climate change. Australia played an essentially negative role at Kyoto and has been allocated an extremely weak greenhouse gas emissions target.

This should not be seen as a justification for complacency in tackling Australia's emissions, though. Australia has now the fourth highest *per capita* level of energy-related CO₂ emissions in the world and the second highest per capita level of all emissions. In addition, its manufacturing sector has performed worse than almost all other OECD countries in increasing energy efficiency. Even after allowing for structural factors, the real energy intensity of manufacturing in Australia fell by only about 15 per cent, compared with over 30 per cent for the OECD overall during the past two decades.

In the lead up to Kyoto, the Federal Government announced a new greenhouse package. The package includes some positive new energy efficiency and renewable energy initiatives. However, by international standards Australia's emission reduction programs remains extremely limited, both in terms of the overall level of funding and in terms of the scope of the measures. For example, the five year, \$180 million package represents expenditure of just \$2 per person, per year. Most other industrialised countries are spending 3-10 times this amount. Furthermore, the package does not contain any economic instruments aimed at encouraging lower energy consumption or shifting energy consumption away from carbon-intensive fuels.

A variety of economic instruments have been developed for encouraging increased energy efficiency in the domestic, industrial and energy sectors, and as tools for reducing CO₂ emissions. These include taxes on emissions, tradeable emissions permits and subsidisation of emissions reduction. Of these, taxes on fuels based either on their carbon emissions or their energy content are now widely regarded as the one of the most feasible instruments for achieving these ends in the short to medium term.

Carbon taxes have been applied in a range of European countries, including Denmark, Finland, the Netherlands, Norway and Sweden, with positive outcomes for energy consumption and efficiency.

The possible implementation of a carbon levy in Australia has been discussed for almost a decade without action. The levy was proposed in previous ACF Budget Submissions as one component of a broader package to address greenhouse gas emissions. The ACF again proposes the introduction of a carbon levy on all fossil fuels consumed in Australia. It is emphasised that the levy should be seen as only one component of a broader greenhouse and energy package.

The levy will apply to all production of fossil fuels for consumption in Australia. It does not therefore apply to exported energy. It recommends that, for administrative ease, the levy be imposed at point of production and wholesale. The levy is proposed predominantly in order to raise revenue for funding and implementation of greenhouse emission reduction programs. However, the

proposed levy also represents a small step towards having the price of these fuels begin to reflect their true environmental and social costs. The proposed carbon levy would:

- . provide revenues for the development and implementation of energy efficiency programs and, increasingly, use of non-renewable sources of energy;
- . provide a signal to consumers about the need to reduce use of fossil fuels; and
- . increase the economic attractiveness and potential for substitution of alternative fuels and technologies.

The ACF proposes the initial levy be set at \$ 8 per tonne of carbon (\$2.20 per tonne of emitted CO₂). This would be imposed according to the carbon content per unit mass of the fossil fuels concerned, corresponding approximately to:

- . \$ 5.40 per tonne of black coal
- . \$ 2.50 per tonne of brown coal

If fully passed on to consumers, this would mean a price increase of :

- . 13 cents per Gigajoule of natural gas (a normal household on natural gas would pay \$ 9.13 instead of \$ 9.00 approx. per Gjoule of natural gas)
- . 0.24 cents/ kilowatt hr of electricity (average for Australia) (so, coal-based electricity goes from 10 cents to 10.24 cents/kilowatt hr, on average)
- . 0.28 cents/ kilowatt hr for Victorian electricity
- . 0.57 cents/ litre of petrol (i.e. petrol costing 70 cents per litre becomes 70.6 cents)
- . 0.28 cents/ litre of LPG

As these examples indicate, the price and inflationary impacts of the levy will be slight. The rate proposed is modest compared to the other countries (Denmark, Finland, Netherlands, Norway, Sweden) where a carbon tax has already been applied.

This initial low rate of incidence serves to signal the impending impact of this instrument rather than have a significant effect on energy use and emissions.

The resultant revenue should be hypothecated to fund emission reduction measures including :

- . funding, loans and other assistance for energy auditing, retrofitting and other conservation work in domestic and industrial sectors,
- . infrastructure designed to reduce energy consumption overall and fossil fuel consumption in particular (e.g. public transport),
- . compensation for regressive impacts of energy imposts on low income earners and welfare beneficiaries,
- . tax concessions for producers moving to more energy-efficient forms of manufacturing or transport,
- . research and development of renewable energy sources, and
- . assistance for development of Australian renewable energy enterprises.

A carbon levy may have a greater impact on low income earners. However the regressive impact is likely to be slight, especially with the low levy proposed. This conclusion is supported by a recent OECD study of green taxes.⁷

At the same time, the potential industrial and regional economic benefits of effectively recycling carbon levy revenues need also to be taken into account. These include employment generation - directly through energy conservation and new energy technology projects and indirectly through

⁷ OECD, 1997, *Environmental Taxes and Green Tax Reform*, OECD, Paris.

reduction of payroll taxes. It is suggested that these developments will more than compensate for the increased costs to intensive energy users, and employment impacts in these sectors.

The proposed hypothecated carbon levy would have a sunset clause and be subject to review after five years. Over time, ACF proposes that a broader, revenue neutral carbon/energy tax be introduced and be used to offset payroll and other employment and investment taxes, thereby lowering costs and increasing incentives for employment and investment.

R(13): The ACF proposes the establishment of a hypothecated carbon levy at a rate of \$8 per tonne of carbon, to be imposed according to the carbon content of carbon per unit mass of the fossil fuels concerned. The levy would have a sunset clause and over time be replaced by a broader and larger, revenue neutral carbon/energy tax.

Cost:	Revenue: \$ 880 million in 1998-99 (recurrent for five years)
Implementing Agency:	Treasury
Outcomes:	Reduced CO₂ emissions; Increased market pressure for energy efficiency; revenue for energy-related structural and other reforms; (in the medium term) revenue for reduction of payroll tax; enhanced employment in and beyond the energy sector.

Skewed sales taxes on new motor vehicles

The transport of people and goods by fossil-fuel dependent vehicles is heavily subsidised (both environmentally and economically) by the community. The subsidies include additional hidden costs associated with fossil fuel use (urban air pollution and greenhouse gas emissions), the costs of road maintenance, accidents and related health costs. One means for overcoming these subsidies is to encourage purchasers of fuel-inefficient motor vehicles to pay more for these vehicles through a skewed sales tax which favours fuel efficient and penalises fuel-inefficient vehicles. Current sales tax is levied at 20 percent for normal vehicles and 16/45 or 21/45 percent for luxury vehicles. These should be replaced by the skewed sales tax based on fuel-efficiency, plus 20/45 percent for all luxury vehicles.

Under the new tax, vehicles with fuel consumption of :

. under 6.5 litres/100 km	would be sales tax-exempt;
. 6.6 to 7.8 litres/100 km	20 percent sales tax
. 7.9 to 9.0 litres/100 km	30 percent sales tax
. 9.0 to 10 litres/100 km	35 percent sales tax
. over 10 litres/100 km	40 percent sales tax

R(14): The ACF proposes the introduction of a skewed sales tax on motor vehicles, based on fuel efficiency, with a new luxury tax rate of 20/45 percent.

Cost:	Revenue neutral]
Implementing agency:	Treasury

Best available consumer technology rebate

Over the past decade, there have been significant advances in the design of a range of consumer goods - automobiles, refrigerators, washing machines, and so on - leading to major improvements in

the resource efficiency with which they are produced, their fuel efficiency and environmental safety in operation, their durability, and the efficiency with which they can be recycled.

The ACF proposes a scheme which will subsidise by 10 percent the cost of those consumer appliances and goods which have been identified by an independent evaluation panel as the most environmentally efficient in their product area (including most energy-efficient; most recyclable; least material intensive; most durable; etc). This scheme can only be implemented alongside strict price controls for the identified goods.

It would provide incentives for local producers to develop goods to World Best Standard, while it would also lead to major indirect savings of domestic resources and the environment by 'forcing' the pace of ecological modernisation.

R(15): The ACF proposes that a scheme be introduced in 1998-99 which will subsidise 10 per cent of the cost of those consumer goods identified by an independent evaluation panel as the most environmentally efficient in their product area. The scheme is to operate in the context of strict price controls for these goods.

Cost: \$ [uncosted]
Implementing agency: Treasury

Company tax and green incentives for clean production

Although improving in the last two to three years, rates of private sector investment in new plant and equipment remains relatively low in historical terms. For the Australian economy to develop in directions which are environmentally sound, considerable new investment is required in 'clean production', including in energy-efficient technologies, machinery and processes which are resource efficient and waste minimising, and in technologies which enable the domestic recycling of waste products. In addition, development of domestic capacity for conversion of raw materials into value-added products is essential to both maximise export potential and minimise the importation of goods which could be produced efficiently locally.

If appropriately targeted, company tax can be used as an incentive to encourage capital investment and lead to improvements in Australia's trade performance. Tax concessions could be used as incentives for companies to use or install BAT - best available technologies - those which are most resource efficient; most energy efficient; least polluting. etc, and to use renewable energy sources. A range of other criteria would also be applied to companies seeking to attract grants, low interest loans or other concessions. The advantage of this approach is to ensure that future tax relief is focussed upon and tied to specific investment and sustainable development objectives.

R(16): The ACF recommends that targeted tax concessions be developed which can be applied to industries which meet the requirements of an environmental audit of their production processes, research and development activities, products and firm investment commitments.

R(17): ACF further recommends that enhanced tax deductibility at a rate of 110 per cent should apply to investment in accredited imported Best Available Technologies, and 120 per cent where Australian-made products are available and purchased.

Cost: \$ [uncosted]

Implementing Agency: Treasury

Tax deductibility for conservation projects and land conservation

R(18): The ACF supports the recommendation by the Resource Assessment Commission's Coastal Zone Inquiry, for the provision of tax deductibility to companies (at the rate of 120 percent) and individuals for expenditure on coastal resource conservation projects, where these expenditures are in accordance with guidelines to be developed by local and State government agencies. ACF further argues that deductibility not be limited to just coastal conservation projects but should extend to all conservation projects which meet agreed guidelines designed to ensure environmental and financial accountability.

Cost: \$ [uncosted]

Implementing Agency: Treasury

R(19): The ACF also proposes that donations of land to an approved conservation organisation be made tax deductible and that donations of a conservation easement over any area of land identified as being of high ecological significance be deductible against income.

Cost: \$ [uncosted]

Implementing Agency: Treasury, Environment Australia

Farm tax conservation incentives

The ACF recognises that incentives for ecologically sustainable agriculture may be created by expanding the use of tax rebates/credits for farmers.

ACF recommends that the following environmentally beneficial practices, be eligible for taxation rebates/credits:

R(20): Tax rebates/credits should be extended to cover the costs of any rehabilitation of natural ecosystems or habitat on farmland, such as the restoration of riparian zone, wetlands, woodlands etc. The costs (for materials) of protecting remnant natural vegetation on farmland should also be eligible for rebates.

Cost: \$ [uncosted]

Implementing Agency: Treasury

Outcomes: Enhanced conservation of biodiversity on farmland; improved soil conservation and salinity control.

R(21): All costs relating to monitoring of agricultural soil and water quality and testing for chemicals in produce and wildlife on farmland, should be fully deductible *on the condition that the monitoring is conducted in a manner which makes the results useable for state of the environment reporting and results are available to appropriate public agencies (with all appropriate confidentiality assured)* .

Cost: \$ [uncosted]

Implementing Agencies: Treasury; State Agriculture Departments; DEST

Outcomes: Improved productivity; more effective agricultural resource planning; improved monitoring of environmental impacts on farms.

Strengthening Government Economic and Environmental Policy Frameworks

The influence of government economic policy on the ecological viability of Australia extends well beyond its direct fiscal measures. Policies relating to ecologically sustainable development and environmental management affect and are affected by all spheres of government.

ACF is concerned that governments in Australia have failed to integrate environmental and economic planning. The pursuit of ecologically sustainable development requires coordination across Commonwealth departments and a centralised point of access for communication with, and input from, the states. This coordination is absent at present, both within and between governments. As well, existing administrative and institutional arrangements prohibit effective implementation of significant environmental reforms which can have both environmental and economic benefits.

ACF is also concerned that environmental auditing and reporting be placed on the same footing as the generally rigorous accounting and annual financial reporting by companies and governments. The preservation and effective management of national environmental assets require rigorous and regular auditing of resource use practices from the enterprise level through to comprehensive national accounts. At present, effective environmental auditing programs are yet to be established. Environmental monitoring is not adequate for us to understand the impacts of our activities on the environment or to meet our international obligations to provide environmental information.

To meet the improved planning, coordination and auditing requirements ACF proposes a series of changes starting with the idea of a Bureau of Environmental Economic Research, a Federal Office for Environmental Assessment and regular Green Budget statements. Over time, these will see environmental economic research, environmental assessment and reporting and environmental and economic policy achieve the status, regularity, rigour and integration it requires.

Bureau of Environmental Economic Research

Increasing attention is being paid to the economics of environmental management and degradation. There is growing interest in the use of economic instruments for implementing environmental policy. The need for the Department of Environment to be able to argue its case in terms of the revenue implications of various programs and projects has increased as the relationship between industry, social and environmental policies strengthens.

The Department of Environment currently has a Strategic Planning Section which incorporates an environmental economics unit. The unit is small and, despite the quality of its staff, has been unable to provide strategic advice and pro-active policy development across the range of environmental economic issues which the Department now needs to address.

The ACF believes there is a strong argument for establishing a Bureau of Environmental Economic Research (BEER). Attached to DEST and modelled on similar bureaux elsewhere in Government (for example, ABARE in the Department of Primary Industries and Energy), it would be equipped to provide the Minister for Environment with strategic policy advice - including on economic instruments for environmental policy - and objective, independent evaluations of economic arguments supporting industry initiatives developed by other departments. It would also produce the Federal Green Budget (see recommendation 23).

It is suggested that the Bureau would include some 20 staff (including administrative support) and be funded to also draw upon specialists outside Government according to need. It would be resourced to undertake appropriate economic modelling.

R(22): The ACF proposes the establishment of a Bureau of Environmental Economic Research (BEER) to provide the Minister for Environment with strategic environmental-economic policy advice and objective evaluations of industry initiatives developed by other departments. It would also produce the Federal Green Budget. The Bureau should include some 20 staff (including administrative support) and be funded to draw upon specialists outside Government.

Cost:	\$5 million in 1998-99 (\$10 million recurrent thereafter)
Implementing agency:	DEST
Outcomes:	Provision of environmental-economic policy advice and objective evaluations of industry initiatives developed by other departments to the Minister for Environment;

Office of Environmental Assessment

The public has a right to know about the environmental performance of government agencies and industry, and must understand the environmental implications of its own actions and decisions. The credibility of such information depends on its independence and its accuracy. The United Nations Conference on Environment and Development (the Earth Summit, at Rio in 1992) emphasised the environmental rights of citizens and pointed to the fundamental obligation on governments - as a part of democratic practice - to provide accurate and detailed information to ensure effective public debate and decision-making on environmental matters.

Several key functions relating to environmental assessment are currently not being carried out in ways which ensure that the public can be assured of the credibility and independence of the information provided.

For this reason, the ACF proposes the creation of an independent Office of Environmental Assessment to conduct three related tasks:

- . ***Environmental audits of federal departmental activities and programs.***
This function would be similar to that of the Auditor-General's Office, (for example, in providing an efficiency audit of the implementation by the Department of Primary Industries and Energy's Energy Management Programs as part of the Government's Interim Greenhouse Response);
- . ***Environmental Impact Assessments.***
At present there is justifiable and strong community cynicism about the processes by which EIAs are conducted (either by consultants to the proponents of an industry proposal, or by development-focussed government departments). In both cases, there is a strong structural bias towards producing reports which tend to assume the inevitable implementation of the project concerned. The quality and independent authority of the assessments are usually compromised as a result.
- . ***National State of the Environment reports.***

State of the Environment (SoE) reports provide regular, scientifically accurate and comprehensive information about key environmental conditions and trends. The current arrangements, with the development of the unit producing national State of the Environment Reports within the Department of the Environment and answerable to the Minister of the Environment, is not ideal as it could compromise the independence of national SoE reports.

The Office should - as part of its work on environmental indicators for State of the Environment reporting - contribute to the development of a comprehensive set of Quality of Life indicators of environmental, social and economic well-being, which can be used to assess trends the social justice and ecological sustainability of government policies outcomes.

The OEA should be established under its own legislation, with sufficient powers and resources to successfully fulfil its three defined tasks. It should present its reports annually and directly to Parliament. The Office should be headed by a Commissioner for the Environment, appointed by the Parliament, and accompanied by an Advisory Council selected on the basis of independence, expertise and community representation.

R(23): The ACF recommends the establishment of an independent Office of Environmental Assessment, to perform four major tasks:

- . **Environmental audits of Federal departmental activities and programs .**
 - . **Environmental Impact Assessments.**
 - . **National State of the Environment reports.**
 - . **Green budgets.**
- Initial focus of the Office should be on audits of Federal departmental activities.**

Cost: \$ 5 million in 1998-99 (recurrent)

Implementing Agency: DPMC

Green budget

One very effective way to understand the impact of environmental degradation on the national economy is to ensure that its costs are fully audited. As a first step, governments should report on the environment-related financial costs, returns and consequences of their activities. Although in the past two years a report has been produced which details many aspects of the Commonwealth's environment programs, Australia does not have a fully consolidated Green Budget.

There are well-developed overseas precedents for such activity. In Norway, all government departments are required to submit, as part of their budget bids to Treasury, full costing of past and proposed :

- . expenditures relating to repair of existing environmental degradation;
- . environmental 'defensive' expenditures, (expenditure on preventative measures); and
- . environmental expenditure relating to passive conservation measures.

These accounts are then reported separately and provide the basis for public scrutiny and environmental auditing of the performance of these government agencies.

The ACF proposes that a comparable **Green Budget**. It proposes that the Treasury and the proposed Office for Environmental Assessment jointly manage the production of a Green Budget which reports, for all Federal departments and agencies, on :

- (i) Expenditure on environmental remediation (direct environmental costs);
- (ii) Expenditure on conservation programs (direct environmental defensive expenditure); &
- (iii) Cost of the environmental impacts of normal activities, across government departments in all future budget submissions (indirect environmental costs and benefits);

R(24): The ACF proposes the development of an annual Green Budget report, to be produced by the Bureau of Environmental Economic Research and presented in Parliament by the Minister for Environment.

Cost: \$ 0.5 million in 1998-99 (recurrent)

Implementing agencies: Treasury and Office for ESD

Additional items from the 1997/98 submission

ENVIRONMENTAL AUDITING AND REPORTING

Rigorous accounting and annual financial reporting by individuals and companies are an accepted part of commercial life. They are seen as an essential component of national well-being, as they encourage a degree of transparency and trust in commercial life and underpin the operations of a comprehensive national tax system. The ACF believes that it is essential that environmental auditing be placed on the same footing. The preservation and effective management of national environmental assets also require rigorous and regular auditing of resource use practices from the enterprise level through to comprehensive national accounts.

At present, effective environmental auditing programs are yet to be established. Environmental monitoring is not adequate for us to understand the impacts of our activities on the environment or to meet our international obligations to provide environmental information.

Therefore the ACF proposes a series of changes - starting with the idea of regular Green Budget statements, triennial Prime Minister's Environment Statements, local State of the Environment Reporting and the establishment of federal Offices for Environmental Auditing and ESD - which over time will see environmental reporting achieve the status, regularity, rigour and integration it requires.

Green Budget

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There are well-developed overseas precedents for such activity. In Norway, all government departments are required to submit, as part of their budget bids to Treasury, full costing of past and proposed :

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- . environmental 'defensive' expenditures, (expenditure on preventative measures); and
- . environmental expenditure relating to passive conservation measures.

These accounts are then reported separately and provide the basis for public scrutiny and environmental auditing of the performance of these government agencies.

In Australia, thematic approaches to Budgetary reporting are well-established in other areas. Both Commonwealth and State (Victorian and South Australian) governments have produced separate Women's Budget reports for several years. These have been based on a formula and framework against which all individual departments provide information reporting the impacts on women of:

- . ordinary government programs
- . programs *involving* women
- . program initiatives *specifically aimed* at women

The ACF proposes that a comparable **Green Budget** process be introduced at the federal level. It proposes that the Treasury and the proposed Office for Ecologically Sustainable Development (see later pages) jointly manage the production of a Green Budget which reports, for all Federal departments and agencies, on :

- (i) Expenditure on environmental remediation (direct environmental costs);
- (ii) Expenditure on conservation programs (direct environmental defensive expenditure); &
- (iii) Cost of the environmental impacts of normal activities, across government departments in all future budget submissions (indirect environmental costs and benefits).

As in Norway, existing programs and new initiatives would also be assessed jointly by Treasury and the Office for ESD compatibility with guidelines for Ecologically Sustainable Development.

This framework would serve as a mechanism to modify or eliminate programs and initiatives which breach adopted whole-of-government ESD principles, and lead to a more effective implementation of the ESD process. Each department should publish its individual assessment in its annual report.

In addition, the proposed Office of Ecologically Sustainable Development should publish these departmental Green Budget assessments in an consolidated document which would be presented in Parliament annually by the Minister for Environment.

R(78): The ACF proposes the development of an annual Green Budget report, to be jointly produced by Treasury and the Office for Ecologically Sustainable Assessment, published by the Office for ESD and presented in Parliament by the Minister for Environment.

Cost: \$ 0.5 million in 1997-98 (recurrent)
Implementing agencies: Treasury and Office for ESD

State of the Environment Reporting by Local Government

In Australia, it has been estimated that the 915 local councils spend at least \$2 billion - or about one sixth of their total outlays - on functions which are crucial to the protection of the environment. About \$1.1 billion of this is spent on the treatment and disposal of household and industrial waste.

Local government is increasingly involved in mobilising the community to undo the environmental damage of the past and to care more about the consequences of present-day actions. It does so by organising waste recycling services and facilities, energy conservation advisory and retro-fitting services, community 'rubbish clean-up' and park weeding days, providing free trees for planting out in parks and homes and garden advisory services, helping to reduce the number of stray cats (predators on wildlife), and through other environment-related amenities and educational services. The success of each of these depends on community awareness and participation.

The ACF believes that recent moves by shires and LGAs around Australia to enhance their environmental performance are both an indication of the 'greening' of public awareness of the importance of the environment and a sharper recognition by local government of its responsibilities for environmental management.

State of the Environment (SoE) reporting provides the public with clear assessments of the environmental trends and conditions. A National SoE Report has just been released in Australia, providing perhaps the best national overview to date of the state of the Australian environment. Amongst the drawbacks of the national and state SoE reporting process to date though has been its failure to examine trends and conditions at the local and community level.

In New South Wales, legislation has been enacted to require local government to produce annual State of the Environment reports and has led to the production of over 140 SoE reports by local government in that State.

This legislation is based on the recognition that:

- . State of the Environment reports advertise the activities of councils in environmental management.
- . State of the Environment reports can assist councils to make informed judgements about the broad environmental consequences of their policies and plans, by establishing a body of background information against which potential benefits or impacts of a specific project may be evaluated, in the larger context of the LGA or the region.
- . Trends identified through SoE reports will indicate areas in which councils may make financial savings over time. For instance, programs for waste minimisation and recycling may show considerable financial savings for councils. Indicating the limits to local landfill options will educate the local community to be aware of the longer term implication for their rates, of unchecked production of household waste.
- . Integrating environmental information with social and economic information will assist councils to plan effectively for future demands on infrastructure and services - for example by indicating when, given current growth rates, where zoning for certain activities should or should not proceed on environmental grounds.

The resourcing available for the task of SoE reporting by local government is minimal despite the importance of the information which would result from this program for local, State and federal environmental management. While other States have not yet moved to require such reporting, some (as in Victoria) have put programs in place to encourage and assist local government to develop local and regionally co-ordinated conservation strategies. These will require monitoring and should provide information for future SoE reports.

The ACF recognises the importance of these developments and believes that they should be given active assistance and funded support by the Federal government, through the Department of Environment.

R(79): The ACF proposes that \$ 16 million be allocated over three years for assistance to Local Government for the development of local, and regionally co-ordinated conservation strategies and for the establishment of regular State of Environment reporting by local government to complement state and national SoE reporting.

Cost:	\$ 4 million in 1997-98 (\$ 6 million p/a in 1997-98 and 1998-99)
Implementing Agency:	ENV. AUST.
Outcomes:	Establishment of SoE reporting programs co-ordinated between each level of government, with appropriate training and GIS facilities.

Community Based Environmental Monitoring and SoE

Throughout Australia, numerous government agencies and non-government organisations are involved in monitoring various aspects of the environment and developing State of the Environment reports.

The ACF has recently released a major directory of community environmental monitoring (CEM) groups in Australia, *Listening to the Land*. A major point raised in the introduction to the report is that a vital step towards a truly national approach to SoE reporting is support for community environmental monitoring groups from government SoE budgets. To improve CEM in Australia a number of commitments need to be met by governments. These include:

- . fostering increased community involvement in SoE Reporting
- . promoting increased involvement in CEM (through funding of workshops, compiling a national manual of CEM techniques and allocating funds for development of user-friendly monitoring devices);
- . establishing better links between monitors and environmental managers;
- . beginning a participatory process to establish national data standards;
- . encouraging initiatives to integrate data at the regional level;
- . providing national leadership in data sharing;
- . building community capacity to interpret data.

ACF is currently developing a major proposal to facilitate these objectives.

R(80): The ACF recommends that the Federal Government provides funding to promote Community Based Environmental Monitoring Australia-wide including increased community involvement in State of the Environment reporting.

Cost:	\$ [uncosted]
Implementing Agencies:	to be determined
Outcomes:	Better co-ordination between community-based environmental monitoring programs, and with SoE reporting programs at each level of government.

ENVIRONMENTAL PERFORMANCE FUND (EPF)

Intensive industrial activity in Australia has left it with a heritage of persistent environmental contamination, with waterways and land sites polluted by heavy metals, chemicals and radioactive substances. Collective approaches must be found for resolving these persistent problems and a process developed to ensure that future industrial activities are conducted in ways which ensure that the public is insured against the financial costs of dealing from any unforeseen problems resulting from them.

At present, clean-up costs almost entirely occur at the public expense. For instance, millions of dollars of public funding - exceeding the revenue to the government from the mine itself - have been poured into the rehabilitation of the site of Australia's first uranium mine at Rum Jungle. Similarly, large costs have been incurred by the public to clean contaminated sites for industrial and housing development in Victoria. Sometimes such activity is to make sites available for future commercial activities which mostly benefit a limited number of producers and investors. Such an approach is economically unwise and socially unjust.

The ANZECC has begun looking at issues relating to financial liability for contaminated site rehabilitation. The following proposal is in part the ACF's response to issues relating to a national liability scheme dealing with the costs of environmental remediation; the basis of the liability regime; government involvement; and the problem of 'orphan sites', raised in the ANZECC discussion paper on *Financial liability for Contaminated Site Remediation* .

The ACF proposes the establishment of an ***Environmental Performance Fund*** (EPF).

The fund will :

- . finance the remediation of existing and future 'orphan' contaminated sites;
- . finance emergency clean-up operations or other aspects of emergency site control (thereby covering public costs where significant delays may occur in the attribution of legal liability and the recovery of costs from the responsible parties);
- . fund the creation and maintenance of a national register of contaminated sites;
- . fund environmental auditing of current and future sites of relevant industrial activities;
- . fund more general environmental remediation in future; and
- . help minimise environmental risks by providing strong financial incentives for self-regulation by companies and encouraging them to employ accredited environmental best practice and technologies.

All companies handling significant quantities of specified chemicals or engaging in certain specified commercial processes, would be required by national legislation to place performance bonds with the fund. These bonds would be maintained at the value of 1 percent of averaged annual company turnover (averaged over five years). Companies which operate according to accredited world best environmental technologies and practice would be allowed to reduce their contribution to 0.6 percent of averaged annual company turnover - a significant incentive for adoption of best practice.

Certain modifications to bond and funding requirements, and to rebating of bonds, could be made according to a formula relating to individual sites where large companies operate over several locations. Similarly, a formula to deal with fund contributions from Federal and State government agencies whose operations entail risks of environmental contamination would need to be developed. In addition, local, State and Federal governments would also be required to contribute to the Fund on the basis of their involvement in permitting industrial processes which entail a degree of environmental risk. The formulae for such contributions would need to be determined.

The ACF continues to support the Polluter Pays Principle (PPP), which has also been endorsed by Federal and State Governments in the Intergovernmental Agreement on the Environment (Section 3.5.4). As the ANZECC discussion paper notes, the PPP contributes to the internalisation of environmental costs that are then reflected in the final costs of goods and services causing pollution during their production or consumption. The PPP therefore must remain the main driving principle of any scheme determining financial liability for remediation of a contaminated site.

The establishment of an EP Fund should not impair but rather enhance the operations of the PPP, nor affect the criminal or civil liability of polluting companies, including retrospective liability where companies have knowingly polluted a site, failed to reach predetermined standards at the time of contamination, or failed to exercise reasonable care in their operations. Overall, the ACF supports a combined 'liability' and 'risk-based ' approach to responsibility for environmental damage.

The use of the EP Fund to finance cleaning up existing contaminated sites would be according to a national register of contaminated sites that should be developed through the Commonwealth EPA in cooperation with State environmental protection agencies. The register should be used to create a National Priority List, ranking sites according to their importance as environmental risks, then according to cost, time and engineering feasibility factors associated with their environmental remediation.

To initiate the EP Fund, the ACF proposes that the Federal Government:

- . establish a legislated process requiring all companies handling significant quantities of prescribed chemicals to place performance bonds with the fund.
- . contribute \$5 million of Federal funding to the Fund.

The bonds would be repaid, without interest, after environmental audits have concluded that, upon completion of activity, no additional contamination had occurred at site/s or related environs.

The interest earned by the Fund on its bond monies would be considerable. It would be this interest which, in the first instance, would fund remediation of existing 'orphan sites' and then would go on to contribute funding for more general environmental remediation and conservation work. It is possible that, as the need for remediation diminishes over time,

the percentage contribution by companies could be reduced. The costs of remediation would be passed on to purchasers of treated sites as an expense recoverable to the Fund.

R(82): The ACF proposes that:

- . **legislation be enacted to establish an Environmental Performance Fund, requiring all industries handling significant quantities of prescribed chemicals to place performance bonds with the Fund. These bonds would be maintained at the equivalent of one percent of average annual company turnover, or reduced to 0.6 percent where companies adopt accredited world best environmental practice and technologies.**
- . **the Federal Government contribute \$5 million to the establishment of the Environmental Performance Fund (EPF), the initial National Register of Contaminated Sites and a National Priority List of contaminated sites.**

Cost: \$5 million
Implementing Agency: ENV. AUST.

OFFICE OF BIODIVERSITY

Policies relating to biological diversity affect most areas and all spheres of government. Their successful implementation requires co-ordination across Federal departments and a centralised point of access for communication with and input from the States. This co-ordination has not been achieved through existing departmental processes or structures, which prove unsuited to the goals of biodiversity preservation because of their multiple and partisan roles. The establishment of a specialist, statutorily empowered agency is essential to the Government meeting its national and international commitments for the preservation of biodiversity.

The ACF proposes the creation of an Office of Biodiversity, incorporating the present Biodiversity Unit. It should be established as a statutory authority operating in association with a *Biological Diversity Advisory Council* (as recommended in the Commonwealth's Strategy) and reporting to the Minister for the Environment. This Office would have six major functions, including:

- . Policy development to meet the requirements of the Biodiversity Convention and the National Strategy on the Conservation of Australia's Biodiversity - including through preparation of a special purpose Biodiversity Act (as preferred in the Commonwealth's Strategy) to enshrine obligations relating to conservation and ownership of genetic biodiversity in Australia in legislation;
- . Channelling of resources for biodiversity research and development, including for identification and maintenance of habitat requirements, monitoring and implementation of plans emerging from policy work, and research and legislative commitments;
- . Co-ordination of work on identification of Australia's genetic resources;
- . Facilitation of implementation of biodiversity-related policies between Commonwealth departments, and the Commonwealth and the States;
- . Meeting the Government's responsibilities in international and regional (Asia-Pacific) fora, for assistance with biodiversity issues;
- . Provision of public information and educational material on biodiversity, (especially to assist in public participation in policy development and decision-making in this area).

The development of such an Office and its work will take several years, and additional funding will need to be allocated in time. The ACF sees the development of a *National Biological Diversity Conservation Act* as an urgent first task for the Office.

R(91): The ACF recommends the creation of an Office of Biodiversity to provide essential policy development and interdepartmental co-ordinating functions within the Commonwealth government and between the Commonwealth and the States, and facilitate public participation in policy development and implementation processes.

Cost: \$4 million in 1997-98 (\$7 million in 1997-98; \$10 million recurrent thereafter).
Implementing Agency: DPMC
Outcomes: Effective co-ordination of whole-of-government policy implementation with regard to national and international commitments to the preservation of biodiversity.

OFFICE FOR ECOLOGICALLY SUSTAINABLE DEVELOPMENT

The ACF believes that an Office for Ecologically Sustainable Development should be established to overcome the impasse reached in the implementation of the recommendations of the ESD Working Groups and National Strategy for Ecologically Sustainable Development.

Policy relating to ESD requires co-ordination across Federal departments and a centralised point of access for communication with and input from the States. An interdepartmental Office for Ecologically Sustainable Development, which is autonomous from but associated with the Departments of Prime Minister and Cabinet and the Environment, is required to ensure that 'the environment' will not be subordinated to sustained development'.

The major functions of this Office would include :

- . Policy development to meet the requirements of the National ESD Strategy;
- . Facilitation of ESD related activities between Commonwealth departments, and the Commonwealth and the States;
- . Provision of public information and educational material on ecologically sustainable development;
- . Preparation of the Green Budget statement, jointly with Treasury.

R(92): The establishment of an Office for Ecologically Sustainable Development is proposed, to facilitate and co-ordinate the implementation of the recommendations of the National Strategy for Ecological Development, and to monitor and review implementation of the Strategy.

Cost: \$1 million in 1997-98 (recurrent and indexed)
Implementing Agency: DPMC

OFFICE OF ENVIRONMENTAL ASSESSMENT

The public has a right to know about the environmental performance of government agencies and industry, and must understand the environmental implications of its own actions and decisions. The credibility of such information depends on its independence and its accuracy. The United Nations Conference on Environment and Development (the Earth Summit, at Rio in 1992) emphasised the environmental rights of citizens and pointed to the fundamental obligation on governments - as a part of democratic practice - to provide accurate and detailed information to ensure effective public debate and decision-making on environmental matters.

Several key functions relating to environmental assessment are currently not being carried out in ways which ensure that the public can be assured of the credibility and independence of the information provided.

For this reason, the ACF proposes the creation of an independent Office of Environmental Assessment to conduct three related tasks:

- . ***Environmental audits of Federal departmental activities and programs.***
This function would be similar to that of the Auditor-General's Office, (for example, in providing an efficiency audit of the implementation by the Department of Primary Industries and Energy's Energy Management Programs as part of the Government's Interim Greenhouse Response);
- . ***Environmental Impact Assessments.***
At present there is justifiable and strong community cynicism about the processes by which EIAs are conducted (either by consultants to the protagonists of an industry proposal, or by pro-active government departments). In both cases, there is a strong structural bias towards producing reports which tend to assume the inevitable implementation of the project concerned. The quality and independent authority of the assessments are usually compromised as a result.

. ***National State of the Environment reports.***

State of the Environment (SoE) reports provide regular, scientifically accurate and comprehensive information about key environmental conditions and trends. The current arrangements, with the development of the unit producing national State of the Environment Reports within the Department of the Environment and answerable to the Minister of the Environment, is not ideal as it could compromise the independence of national SoE reports. Furthermore, there is considerable doubt as to whether the the SoE Unit within the Department of the Environment is to be maintained on an ongoing basis after the release of the current SoE Report for Australia.

The Office should - as part of its work on environmental indicators for State of the Environment reporting - contribute to the development of a comprehensive set of Quality of Life indicators of environmental, social and economic well-being, which can be used to assess trends the social justice and ecological sustainability of government policies outcomes.

The OEA should be established under its own legislation, with sufficient powers and resources to successfully fulfil its three defined tasks. It should present its reports annually and directly to Parliament. The Office should be headed by a Commissioner for the Environment, appointed by the Parliament, and accompanied by an Advisory Council selected on the basis of independence, expertise and community representation.

R(93): The ACF recommends the establishment of an independent Office of Environmental Assessment, to perform three major tasks:

- . **Environmental audits of Federal departmental activities and programs .**
 - . **Environmental Impact Assessments.**
 - . **National State of the Environment reports.**
- Initial focus of the Office should be on audits of Federal departmental activities.**

Cost: \$ 5 million in 1997-98 (recurrent)
Implementing Agency: DPMC

Appendix 6

Ecological Tax Reform in Australia

August 1998

Part 1

Pursuing The Environment/Economic Double Dividend

Summary

1. Taxation Reform in the Context of Ecologically Sustainable Development

- The current taxation system is unwieldy, inefficient and distorted.
- However, pursuing taxation reform in isolation from broader sustainability objectives risks further entrenching unsustainable patterns of production and consumption and increasing social inequality.
- Ecological Tax Reform (ETR) attempts to marry the goals of ESD with an 'efficient' taxation system.

2. Pursuing the Double Dividend - Taxing Environmental 'Bads', Encouraging Social 'Goods'

- The primary focus of ETR is to shift taxation off the value-adding and socially beneficial activities of society - including employment, sustainable and productive investment and savings - and onto the value-subtracting use of resources and energy and associated wastes and pollution.
- Taxation shifting along these lines has the potential to produce an environment/employment 'double dividend'.
- This approach to tax shifting (from labour and capital to pollution and waste) is strongly favoured by progressive industry organisations such as the Business Council for Sustainable Development.
- Tax shifting has been a major component of tax reform undertaken in a number of European countries including Denmark, Finland, Netherlands, Norway, Sweden and the United Kingdom.

3. Removing Distortionary Tax Incentives, Subsidies and Rebates

- The first step involved in tax shifting should be to remove all distortionary tax incentives, rebates and subsidies which encourage unsustainable resource use and environmental damage.
- Although moves have been made in recent years to remove these distortions, many still remain. The report, Subsidies to the Use of Natural Resources, undertaken for the Department of Environment in 1996, concluded that total financial subsidies to the use of natural resources in Australia totalled at least \$5.7 billion in 1993-94, equal to 4.4% of total revenues of Australian governments.
- A detailed analysis of the proportion of these subsidies relating to the Commonwealth tax system has not been undertaken. However, preliminary assessment suggests that they could be as high as \$2 billion per annum.
- ACF has identified a number of relevant rebates and subsidies which should be removed. These include:
 - taxation deductions relating to the clearing of land and draining of wetlands: although direct deductions for land clearing have been removed, indirect deductions and rebates relating to labour, machinery and fuel costs still remain;
 - tariff and taxation advantages for high fuel consuming/polluting four-wheel drive vehicles;
 - concessions within the existing fringe benefits tax system that encourage the use of company cars.

•It is important to note that any reduction in fuel excise as part of a tax reform package would add to the existing net financial and environmental subsidies associated with petroleum production and consumption in Australia.

4. New Green Taxes and Charges

- The second step towards ETR will involve the broadening of the taxation base to include new taxes that discourage unsustainable resource use and environmentally damaging production and consumption.
- A number of European countries have already introduced new green taxes as part of their tax reform programs. These have included energy and carbon taxes, landfill taxes and air and water pollution taxes and charges.
- These taxes and charges are additional to a broad-based consumption or value-added taxes which are in place in those countries.
- In keeping with the principles of ESD, it is essential that the use of green taxes is tied to social equity considerations - with corresponding rebates and assistance measures.
- In Australia, most green taxes will be applied at the state or local government level.
- Fossil fuel consumption represents perhaps the most important and pervasive of 'environmental 'bads' that falls within the scope of Commonwealth taxation.
- A carbon tax represents the most appropriate means of internalising the environmental costs of fossil fuel use. Overseas and Australian studies indicate that a carbon tax introduced, with the revenue recycled to reduce payroll taxes (see section 5) has the potential to generate a significant environment/employment double dividend. Other elements of a carbon tax introduced in Australia might include:

- the tax would only apply to domestic consumption of fossil fuels;

- the tax would initially be applied at a relatively low level, for example \$10/tonne of carbon (\$2.75/tonne of CO₂). A carbon tax in this range would increase the price of electricity by 0.3 cents/kilowatt hour, an increase of about 3% in the domestic price of electricity;

- the proposal would include a full tax rebate to low income earners and welfare recipients;

- in view of existing taxes and excises already applying to petroleum, the carbon tax could be levied on non-transport consumption of fossil fuels only.

- Other new green taxes which should be considered at the Commonwealth level include:

- a tax or levy on water used for agricultural purposes;

- an export woodchip levy; and

- an amendment to the sales/GST tax applying to motor vehicles to skew it in favour of fuel-efficient motor vehicles.

5. Removing Taxes on Activities That Are Socially Beneficial and Sustainable

- The third step in the tax shifting process is to remove existing taxes on value-adding, socially beneficial activities including employment, productive investment and savings, in lieu of the new, green taxes.
- Most empirical studies undertaken to date suggest that a carbon tax combined with an equivalent reduction in employment-related taxes (usually payroll taxes) will generate both a reduction in CO₂ emissions and an increase in employment
- State payroll taxes represent a major disincentive to employment in Australia. Existing payroll taxes constitute a cost impost on employers of almost \$7 billion per annum. Removing these taxes would therefore significantly reduce labour costs and act as a considerable incentive to employment.
- A range of other tax reductions and rebates could be considered at the Commonwealth level including: sales/GST tax exemptions on recycled products; and enhanced tax deductability for approved best practice environmental activities by industry and in agriculture.

Part 1

Pursuing The Environment/Economic Double Dividend

1. Taxation Reform in the Context of ESD

The issue of taxation reform is high on the national agenda with the Federal Coalition Government about to announce its much discussed tax reform package.

This discussion paper has been produced in the hope that the relatively narrow objective of taxation reform will be undertaken in the context of the broader and more searching agenda of Ecologically Sustainable Development (ESD).

Over the past few years the central principles of ESD – biodiversity protection and equity - have been pushed to one side so that ESD or ‘sustainable development’ has now become something of a catch-all phrase for all manner of government policies. This has enabled them to pay lip-service to the concept despite it being a declared ongoing objective at both the federal and state levels. In reality, the overwhelming policy focus of governments throughout Australia has been on improving short-term economic efficiency - an objective that does not necessarily lead to more ecologically sustainable and equitable outcomes. Unfortunately, the tax reform process in Australia appears headed in the same direction.

In a recent examination of economic reform in the US the President’s Council on Sustainable Development recommended the establishment of a Tax Commission to investigate a shift in taxation aimed at reducing inefficiency, waste and pollution. According to the Council, the Commission should address the following criteria:

- Social equity must be improved to meet the goals of sustainable development. Therefore, the burden of taxation should fall on the higher paid.
- The tax regime should encourage savings, private investment and job creation.
- There should be a critical review of existing tax subsidies that run counter to the implementation of sustainable development, particularly those subsidies in water, forestry and land management programmes that promote wastage.
- Any shift should be gradual, it should not obviate high environmental protection standards, and it should enhance the efficiency of meeting quality-of-life objectives (Referenced in O’Riordan 1997).

Unfortunately, the tax reform debate in Australia has skirted around or totally avoided these sustainability-related criteria. The focus instead has been on achieving what economists often refer to as ‘fiscal neutrality’ – a taxation system that is uniform, simple and economically and administratively efficient. In the Federal Government’s major taxation statement to date, for example (Costello 1998), it is the principles of simplicity and efficiency that are most strongly emphasised.

Few analysts or interest groups would disagree with the proposition that the current taxation system is unwieldy, inefficient and contains numerous loopholes and distortions. However, pursuing fiscal neutrality in isolation from sustainability objectives poses the risk of further entrenching unsustainable patterns of production and consumption and increasing social inequality.

To some extent this risk has been recognised by a number of Western European governments which in their pursuit of taxation reform have attempted, at least in part, to marry the goals of fiscal neutrality and ESD (OECD 1997). As a respected British economist recently noted, there need not be a fundamental contradiction between the two goals since:

"(tax) uniformity will not promote economic efficiency if production and consumption activities are accompanied by (environmental and social) externalities. If a tax regime does not alter the pattern of externalities, the apparently level playing field of a uniform tax system will contain biases – and even gaping holes ..." (Smith 1997; p. 22).

Green or ecological tax reform (ETR) is being encouraged by a wide range of economists and advisory bodies as a potentially efficient means of removing these biases and filling in the holes (including by a range of federal government advisory bodies such as the Industry Commission 1997 and Productivity Commission 1996).

As the preceding discussion indicates, ecological tax reform should go beyond simply the notion of ‘green taxes’. In keeping with the goal of ESD, ETR should also entail the following principles:

- influence societal behaviour, in particular encourage sustainable practices and discouraging unsustainable practices;
- raise sufficient revenue to provide all of society with the essential infrastructure and services (including environmental services) that for various reasons are not adequately provided by the private sector;
- promote social equity by redistributing wealth; and
- achieve transparency in public revenue raising and expenditure.

The first of these principles is arguably the major element of ETR and is the primary focus of Part 1 of this discussion paper.

Part 2 of this paper evaluates the Coalition Government’s tax reform package against all of the above principles.

2. Pursuing the Double Dividend - Taxing Environmental ‘Bads’, Encouraging Social ‘Goods’

Most economic activities cause environmental damage to at least some degree. Environmentalists and some economists argue that in many cases the full cost of this environmental damage is not reflected in the transaction prices of the activities concerned. As World Resources Institute economist, Robert Repetto has noted, these environmental ‘externalities’ generated by market failure are “.. ubiquitous and inevitable and occur at all stages of the life-cycle of production and consumption.” Yet many economists and governments have not yet incorporated this fundamental fact into their analyses because they treat environmental externalities as exceptional (Repetto 1996).

If prices were to fully reflect environmental damage costs (in economists’ jargon, ‘internalise the costs’) the price of more environmentally damaging products and services would need to rise, both in absolute terms and relative to less environmentally damaging activities. This would influence consumption patterns and reduce environmental damage.

In most situations the required price changes to an environmentally damaging activity can only be achieved by government action to levy an appropriate charge or tax on the activity. Conversely, because all existing taxes increase the cost of the activities being taxed, some of these taxes may act as disincentives to environmentally or socially beneficial activities.

The primary focus of ETR is to shift taxation off the value-adding and socially beneficial activities of people - including employment, sustainable and productive investment, and savings - and onto the value-subtracting use of resources and energy and associated wastes and pollution. This will involve three complementary steps:

- 1.removing or modifying existing distortionary tax incentives and rebates which encourage unsustainable resource use, waste and pollution;
- 2.discouraging environmentally damaging production and consumption through new ‘green’ taxes and charges; and
- 3.encouraging value-adding and socially beneficial and ecologically sustainable activities by removing or reducing taxes on those activities.

A large body of literature has examined the potential benefits of this approach to tax shifting (see for example, Carraro and Siniscalco 1997; Hamilton et al. 1997; OECD 1997; O’Riordan 1997). In particular, the potential of an environment/employment ‘double dividend’ has been discussed and evaluated. The concept of the double dividend stems from evidence that an appropriately designed tax package that recycles new taxes on pollution and waste through cuts to taxes on labour and capital can result in both reduced environmental damage and increased economic welfare and employment.

Many of the studies that have examined the concept have noted that a double dividend from ETR is not inevitable. The overall outcome depends significantly on the design of the new tax package and the extent of existing market ‘distortions’. Nevertheless, virtually all of the studies give at least qualified support to tax switching (from capital and labour to pollution and waste), concluding that a shift will yield overall net benefit to society.

It is for this reason that a shift of this nature has been strongly favoured by progressive international business organisations such as the Business Council for Sustainable Development (1994).

In Europe the promotion of tax shifting has been especially evident. The 1995 European Ministerial Round Table Conference on Sustainable Production and Consumption recommended the removal of

“.. subsidies that generate unsustainable patterns of production and consumption; and shifting the tax burden from labour to the use of resources and damage to the environment, to promote greater efficiency, reduce pollution, strengthen the market for cleaner technologies and create new jobs” (quoted in Gee 1996)..

And, as outlined in Table 1, tax shifting is now being pursued or actively examined by numerous European governments.

3. Removing Distortionary Tax Incentives, Subsidies and Rebates

The first step involved in tax shifting is to remove distortionary tax incentives, rebates and subsidies that encourage unsustainable resource use and environmental damage. Taxation and other economic incentives for the use of natural resources can have a number of deleterious environmental impacts. Such subsidies encourage ecologically unsustainable practices by industry, consumers and governments, contributing to the over-exploitation and inefficient use of natural resources. In the process, the natural ecosystems from which these resources are sourced are often degraded at a rapid pace. In the case of non-renewable resources, the resources are depleted at a faster rate than would otherwise be the case

and the welfare of future generations is compromised accordingly. The subsidies are also inconsistent with other government policies and programs which are aimed at promoting ecological sustainability.

Table 1

Shifting the tax burden from employment to environment – current practice

Country	Tax Shift
Denmark	New or increased environment related taxes, including a carbon tax have been used to reduce employer and income taxes.
Finland	New landfill and energy taxes used to lower income and labour taxes.
Netherlands	New energy tax used to reduce employer social security levy.
Norway	Proposal by Tax Commission to introduce new ecotaxes and to reduce environmentally harmful subsidies and payroll tax.
Sweden	New environment related taxes used too reduce income taxes, with reductions in employer taxes being considered.
United Kingdom	New landfill tax used to reduce employer's social security contributions.

Source: OECD 1997

The OECD is currently undertaking research into the level and environmental effects of distortionary subsidies and tax provisions in OECD countries (see OECD 1997). As in many other OECD countries, moves have been made in recent years to remove some of these subsidies in Australia. However, many still remain. At both the state and Commonwealth government level, numerous taxation rebates, concessions and other financial subsidies exist which have the effect of subsidising the overuse or mismanagement of natural resources.

A recent report indicates that subsidies of this nature are still very extensive in Australia. In 1996 the Department of Environment Sport and Territories released *Subsidies to the use of Natural Resources*, a report which reviewed both financial and environmental subsidies to a range of industry sectors. Sectors studied included energy production, water and wastewater, solid waste disposal, forestry in native forests, agricultural chemicals and fisheries. (Mining was excluded from this study). The report concluded that government financial subsidies to these 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 per cent of total revenues of Australian governments" (NIEIR 1996).

A detailed analysis of the proportion of these subsidies relating to the Commonwealth tax system was not undertaken. However, preliminary assessment for this paper suggests they could be as high as \$2 billion per annum.

In the US the 'Green Scissors' program has identified and targeted for removal existing subsidies that contribute to environmental and public health damage. A similar process needs to be undertaken as part of the Australian tax reform process. A number of Commonwealth tax-related rebates and subsidies are identified below. Removal of these would represent an initial step towards achieving full cost pricing of resources which requires the removal of all subsidies - economic, environmental and social - associated with resource production and consumption.

Removal of tax deductions for land clearing.

The ongoing clearing of native vegetation on private land is one of the most serious threats to biodiversity in Australia. It continues at an alarming rate. Each year, up to 500,000 hectares are still being cleared - half the annual rate for Brazil. The threats to biodiversity from the loss or degradation of native vegetation are severe and widely recognised. The causal connections between the clearing of native vegetation and land degradation are also well established. In addition, land clearing contributes a substantial proportion of Australia's annual greenhouse gas emissions.

Although direct taxation concessions for land clearing were removed some years ago, there are a number of indirect rebates and incentives which have the effect of encouraging land clearing and draining of wetlands. These include:

- the costs of labour, machinery and fuel expended during the modification or clearing of native vegetation and the draining or destruction of wetlands, on private land which can be claimed as deductible operating expenses;
- the value of timber felled on land during the first year after acquisition, where the purchase price is attributable in part to the existence of that merchantable standing timber, can also be claimed as a deduction - this should only be allowed where the trees had been specifically planted for plantation timbers on previously cleared land.

Removal of tariff and tax advantages for four-wheel drive vehicles.

The Commonwealth currently imposes lower taxes and charges on the large, high fuel consuming, high pollutant emitting (especially particulates) four-wheel drive vehicles. These vehicles are also generally exempt from import duties, even though they compete for the same market with more fuel efficient locally-made passenger vehicles.

In view of the high fuel consumption of four-wheel drive vehicles relative to other passenger vehicles and their contribution to urban air pollution, the tariff and tax advantages currently available to imported four-wheel drive vehicles should be completely removed.

Removal of concessions within the existing fringe benefits tax system that encourage the use of company cars.

Concessions exist within the existing fringe benefit tax system that encourage the provision and use of company cars, encourage the over-use of cars in inner urban areas and work against the public transport system. These should also be eliminated. Included in the concessions is a fringe benefit tax exemption that applies to parking spaces.

Commentary on current fuel excises and the diesel fuel rebate.

There has been considerable debate about the nature and level current fuel excises in Australia. In particular, some organisations (see for example AAA 1998) have argued for the removal of or substantial reduction in the Commonwealth fuel excise on grounds that it is a cost impost on motorists and business and that only a proportion of the revenue raised through the excise is used for its stated purpose of road maintenance and construction.

It needs to be noted, however, that fuel excises in Australia are not high when compared to most other OECD countries (being in the low to medium end of the scale in percentage terms - see OECD 1995). Furthermore, a number of studies indicate that if all financial costs are taken into account, including for example the value of land taken out of alternative usage by roads, then the total value of fuel excises and other quasi user charges paid to governments by road users falls well short of the actual cost of road provision. In other words, there is presently a net financial subsidy to road users, particularly in urban areas (NIEIR 1996). If the environmental and social subsidies associated with petroleum use on roads (including air and noise pollution, accidents and congestion) were also to be taken into account, the total net subsidy to road users would be very substantial indeed.

On that basis, there is little justification for a reduction in fuel excises. Such a reduction would merely exacerbate the existing financial and environmental subsidies associated with fuel consumption. It is for this reason that virtually all European countries which have introduced a broad-based GST/VAT have maintained or even increased energy taxes and fuel excises as part of their overall tax reform packages.

There is also some debate as to whether the rebate currently provided to the mining, forestry and agricultural sectors for fuel excise paid on off-road consumption of diesel is in fact a subsidy. Arguably it is not a financial subsidy, since the stated purpose of fuel excises is to cover costs associated with roads. However, there is undoubtedly substantial environmental subsidies associated with off-road diesel fuel use, including for example, the use of diesel fuel in vehicles involved in land clearing (see above). Any discussion of the diesel fuel rebate should at least take these environmental subsidies into account, however imprecisely.

4. New and Restructured Green Taxes and Charges

The second step towards ETR will involve the broadening of the taxation base to include new taxes that discourage unsustainable resource use.

The effective use of 'green taxes' can provide strong disincentives for activities which are environmentally damaging. As previously discussed, natural resources - such as fossil fuels and timber - are often underpriced, leading to their rapid consumption and to a host of hidden subsidies in the unacknowledged costs of environmental 'externalities' such as waste and pollution. This pollution and waste represents a real net cost to society. Taxes on the use of these resources and on pollution would help to remove these hidden subsidies by encouraging industry and consumers to reduce their pollution and waste. Green taxes can also encourage the production and consumption of environmental 'goods' in preference to the 'bads'.

Australia lags behind most other OECD countries in its development and use of green taxes and other economic instruments for environmental protection. As outlined in Table 1, a number of European countries have introduced new green taxes as part of their tax reform programs. These have included energy and carbon taxes, landfill taxes and air and water pollution taxes and charges. It is important to also note that these green taxes and charges are additional to the broad-based consumption or value-added taxes which are in place in those countries.

While such instruments need to be tailored to suit Australian social and economic conditions, many are likely to be equally effective here. In Australia, state and local government management of resources and the environment means that most green taxes will be applied at the state or local level. There are a number of green taxes which would appropriately be applied at the commonwealth level, however. These are discussed below.

In keeping with the principles of ESD, it is essential that the use of green taxes is tied to social equity considerations - with corresponding rebates and assistance measures to ensure that impacts are not felt disproportionately by low income earners, pensioners and welfare beneficiaries.

Energy and carbon taxes

Fossil fuel consumption represents perhaps the most important and pervasive of 'environmental 'bads' that falls within the scope of Commonwealth taxation. As well as contributing to greenhouse gas emissions, fossil fuel consumption is a major cause of urban air pollution as well as the pollution of bays and estuaries from stormwater runoff. It is appropriate therefore that any tax reform package that includes changes to the present mix of indirect taxes should include in its new mix of indirect taxes a tax on the use of energy and associated pollution.

A carbon tax is perhaps the most appropriate means of internalising these environmental costs of fossil fuel use. Carbon dioxide emissions are a good proxy for most of the environmental impacts associated with fossil fuel use. A carbon tax should also be relatively simple to collect because all flows of primary energy (the source of the CO₂ emissions) pass through a small number of strategic points.

There are a number of important elements of carbon tax that would need to be addressed if introduced in Australia. These include:

- revenue recycling: overseas and Australian studies indicate that a carbon tax introduced, with the revenue recycled to reduce payroll taxes (see section 1.5) has the potential to generate a significant environment/employment double dividend;
- domestic consumption: the tax would only apply to domestic consumption of fossil fuels;
- gradual introduction: to avoid price 'shocks' the tax would initially be applied at a relatively low level, for example at \$10/tonne of carbon (\$2.75/tonne of CO₂). A carbon tax in this range would increase the price of electricity by about 0.3 cents/kilowatt hour, an increase of about 3% in the domestic price of electricity. This would keep the inflationary impact very low. Over a period (say 10 years), the level of carbon tax would rise to more accurately reflect the environmental costs of fossil fuel use;
- rebate for low income earners: the proposal would include a full tax rebate to low income earners and welfare recipients;
- non-transport consumption only?: in view of existing taxes and excises already applying to petroleum, the carbon tax could be levied on non-transport consumption of fossil fuels only.

Environmental water use levy

A Commonwealth sales tax on water for agricultural purposes could be used as an incentive for more efficient agricultural water use and to fund environmental activities. Imposed at, for example, 5 percent, this tax rate would rise to 20 percent over 10 years, to allow farmers and irrigators time to increase their water use efficiency. A full exemption would be available for those farmers returning 20 percent of their water entitlement/right to the environment under an agreed and Federally approved mechanism negotiated with the States. Given the almost intractable issue of water allocations and the imperative of reducing allocations for environmental purposes, this initiative will be at least partially effective in returning water to the environment.

Part of the revenue collected from the levy could be used for environmental restoration of inland aquatic environments and riparian revegetation.

Export woodchip levy

Numerous hidden subsidies have been identified in the export woodchipping industry. In addition, several studies have identified major problems with the accounting methods used in the industry, and underpricing and under-taxing of the exported resource. Due to this situation, the Resource Assessment Commission Inquiry into forests and forest industries recommended the introduction of a resources tax on woodchips.

The introduction of an export woodchip tax of around 15 per cent would improve Australia's share of the economic surplus generated by Australian woodchip exports.

Part of the revenue generated from the levy could also be directed into grants for plantation establishment, agroforestry programs and research into further processing of timber from plantations.

Skewed sales tax/GST on new motor vehicles

As previously discussed, the transport of people and goods by fossil-fuel dependent vehicles is heavily subsidised (both environmentally and economically). The subsidies include additional hidden costs associated with fossil fuel use (urban air pollution and greenhouse gas emissions), the costs of road maintenance, accidents and related health costs. One means for overcoming these subsidies is to encourage purchasers of new fuel-inefficient motor vehicles to pay more for these vehicles through a skewed sales tax which favours fuel efficient and penalises fuel-inefficient vehicles. Current sales tax is levied at 22 percent for normal vehicles and 45 percent for luxury vehicles. The current GST proposal would reduce this rate of tax to a flat 10%.

Any replacement of the existing sales tax should incorporate a skewed tax based on fuel-efficiency. Rates would be need to be determined, but under the new tax, vehicles with fuel consumption of under, for example, 6.0 litres/100 km would be tax-exempt, with percentage tax increments for each additional 1-1.5 litres/100 km up to say, 12 litres/100 km.

1.5 Removal of Taxes on Activities That Are Socially Beneficial and Sustainable

The third step in the tax shifting process is to remove existing taxes on value-adding, environmentally and socially beneficial activities including employment, productive and sustainable investment and savings, in lieu of the new, green taxes.

Overseas experience indicates that this approach helps promotes investment in those areas of the economy which are likely to be both profitable and environmentally and socially beneficial.

Decreasing state payroll tax

As discussed in section 2, the removal taxes on employment and has been the subject of numerous empirical studies has been a key element of taxation reform in a number of European countries. Virtually all of the empirical studies undertaken overseas to date suggest that a carbon tax combined with an equivalent reduction in employment-related taxes (usually payroll taxes) will generate both a reduction in CO₂ emissions and an increase in employment (see Carraro and Siniscalco 1996; O'Riordan 1997).

In Australia, state payroll taxes represent probably the single greatest taxation disincentive to employment. Existing payroll taxes constitute a cost impost on employers of almost \$7 billion per annum. Removing these taxes would therefore significantly reduce labour costs and act as a considerable incentive to employment.

The only Australian study undertaken to date that has examined tax shifting involving a carbon tax and a reduction in payroll taxes, concluded that the short term effects of this shift would be an increase in employment of 0.69% and a

reduction in CO2 emissions of 11.7%. To achieve this outcome, however would require the complete removal of payroll taxes, achieved through a carbon tax of approximately \$84/tonne (\$23/tonne of CO2).

The greatest challenge to reducing payroll taxes is probably political. The Commonwealth will need to enter into negotiations with the states to arrange alternative source of funds to those currently provided by payroll taxes.

Other tax reductions and rebates

Other opportunities exist at the Commonwealth level to reduce taxes or provide taxation rebates on activities that promote sustainable activity and investment. Amongst the measures which could be considered as part of a tax reform package are:

- sales tax/GST exemptions on recycled products, in particular paper and plastics;
- enhanced tax deductability to industrial investors in accredited best available environmental (energy efficient, clean production etc) technologies and practices;
- enhanced tax deductability for sustainable land management and biodiversity protection activities undertaken on agricultural land; and
- introduction of tax deductability for donations of land to conservation organisations and for donations of a conservation easement over land identified as being of high ecological significance.

Part 2

Assessment of the Coalition Government's Tax Reform Package

Summary

1.Introduction and Overview

- This is the second part of a report by the ACF that examines ecological tax reform in Australia. Part 1 of the report sets out the principles and broad framework for pursuing tax reform in Australia. This second part assesses the Federal Coalition Government's recently released tax reform packages against those principles.
- Consistent with the pursuit of Ecologically Sustainable Development (ESD), ACF is concerned that any tax reform undertaken in Australia should:

- encourage ecologically sustainable practices and discourage unsustainable practices;
- promote intergenerational by ensuring that there is adequate revenue to provide society with essential services while avoiding public indebtedness;
- promote intragenerational (social) equity; and
- achieve transparency in public revenue raising and expenditure.

This assessment reveals that the Coalition's s tax reform packages does not conform to the principles of ETR to any significant degree.

1.Assessment of the Coalition Government's Tax Reform Package

1.1 Does the Package Promote Ecologically Sustainable Practices and Discourage Unsustainable Practices?

There is little in the tax reform package to indicate that the goal of ecological sustainability was given any consideration by the Federal Government when developing its package.

The GST

- The GST is a central component of the Government's tax reform proposals. By itself, a flat rate GST is unlikely to have significant adverse or positive impacts on the environment. On the one hand, a GST will change the prices of many environmentally damaging activities. On the other hand, the prices of many environmentally beneficial or neutral activities will also change.
- There are notable exceptions to the apparent environmental 'neutrality' of the GST. The price of solar products is one such exception. Solar products, including solar hot water heaters and photovoltaic (PV) panels, are currently exempt from the wholesale sales tax. The introduction of a GST, with no exemption, will increase their price relative to other, more environmentally damaging energy products and services.
- Pursuing ecological tax reform requires there to be differentiation in the tax rates applied to environmentally damaging and resource depleting activities compared to more environmentally and socially beneficial (value-adding) activities. Furthermore, existing tax subsidies and rebates that encourage environmentally damaging activities should be removed.
- Virtually all European countries that have introduced a GST (or VAT) have included new or increased environmental/resource based taxes as part of their overall tax reforms (eg. the Netherlands, Sweden, Denmark, and Finland). They have also reduced or eliminated distortionary taxes.
- Unfortunately, the tax package proposed by the Government does not differentiate between sustainable and beneficial activities and environmentally damaging activities. Indeed, some of the tax differentiation that (by default) already exists will be reduced or removed through the Coalition's tax reforms.

Fuel Excises

- The Government's proposed change to fuel excise arrangements provides the clearest contradiction of the principles of ecological tax reform.
- The total net reduction in fuel excises as a result of these changes will be about \$3.4 billion in 2001-02. •This will add approximately \$ 2.3 billion to existing subsidies to the road transport sector, estimated in 1994 to be about \$8.5 billion.
- The proposed fuel excise changes represent the only example of tax reform in an OECD country in recent years that has resulted in a net reduction of fuel and other energy-related taxes and charges.
- The proposed changes are in breach of the spirit if not the letter of the Kyoto Protocol.
- If the government is concerned about reducing business costs, then there are more appropriate reforms that can achieve that goal, most notably a reduction in payroll taxes.
- The decision to maintain the fuel excise exemption for alternative fuels is welcomed.

Other Issues

- The reduction in vehicle prices resulting from the replacement of the 22% sales tax with a 10% GST will have both positive and negative environmental impacts. On the one hand, the price reduction may increase the turnover of old, fuel inefficient and polluting vehicles. On the other hand, the reduction in vehicle prices, combined with a reduction in fuel excises (for some consumers) and an increase in public transport fare prices under the GST will increase the attractiveness of motoring compared with public transport. •There are a number of existing, distortionary tax rebates and subsidies that the Federal Government appears not to have addressed through the proposed tax reform package. These include:

- tax rebates and deductions which encourage land clearing and drainage of wetlands;
- tariff and taxation advantages for high fuel consuming/polluting four-wheel drive vehicles; and
- concessions within the existing fringe benefits tax system that encourage the use of company cars.

- An important element of ecological tax reform is implementation of new 'green' taxes and charges, combined with offsetting reductions in taxes on value-adding activities such as payroll tax. The proposed tax package has failed to take this direction. By failing to do so it has ignored a recommendation of the OECD Group on Environmental Performance. In November 1997 the Group recommended that the government should "develop the use of economic and fiscal instruments to promote more cost-effective pollution prevention and land management".

1.2 What is the Impact of the Package on Government Revenue?

- Intergenerational equity is a key principle of ESD. One prerequisite for intergenerational equity is maintaining the quality of and access to essential government services. This must be done in a way that does not increase the level of public indebtedness. Maintaining the taxation revenue base is important to achieving these two objectives.
- Australia is already classed as a 'small government' country, with all levels of government tax revenue being low relative to most other OECD countries. Australian government outlays are also low relative to the OECD average.
- In theory, broadening the taxation system with a 'growth tax' (in the form of a GST) should help to maintain the public revenue base. In practice the Government's proposed tax reforms will reduce total government revenue by a further \$4.8 billion in 2000-01, rising to \$7.25 billion in 2002-03.
- This outcome will reduce the capacity of the government to maintain essential public services, at least in the short to medium term. Alternatively, maintaining services at current levels or improving them will increase the risk of deficit budgets.
- The potential for reduced government expenditure on environmental protection and management in the future is a major concern stemming from this revenue scenario.

1.3 Does the Package Promote Intragenerational Equity?

- Social equity is also an important principle of ESD.
- ACF has not examined in detail the equity implications of the Federal Government's tax reform package. However, we note that the majority of welfare organisations and church groups that have examined the tax reform package have expressed concerns about its equity impacts.
- In particular, concern has been expressed about the impact of the tax package on income distribution, through changes to the tax mix from direct to indirect taxes and a reduction in marginal tax rates for higher income earners.
- The full equity implications of these and other aspects of the Government's tax reform package need to be evaluated in detail.

1.4 Does the Package Increase the Transparency of the Taxation System?

- Tax reform that is consistent with ESD should increase the transparency of revenue raising and public expenditure.
- By removing some of loopholes and complications in the tax system, the proposed tax package will improve the transparency of Australia's taxation system to some extent. However, there are many distortions and subsidies inherent in Australia's current system of public revenue raising and expenditure - including an estimated \$5.7 billion in financial subsidies to resources use - that are not addressed by the package.

2. Assessment of the Coalition Government's Tax Reform Package

2.1 Does the Package Promote Ecologically Sustainable Practices and Discourage Unsustainable Practices?

Foremost amongst the objectives of ETR is promoting ecologically sustainable practices and discouraging unsustainable practices. This can be achieved through differentiating the tax rates applied to environmentally damaging and resource depleting activities compared with more environmentally and socially beneficial (value-adding) activities. This, in turn, entails three steps:

- removing or modifying existing distortionary tax subsidies and rebates which encourage ecologically unsustainable resource use, waste and pollution;
- discouraging environmentally damaging production and consumption through new 'green' taxes and charges; and
- encouraging value-adding and socially beneficial and ecologically sustainable activities by removing or reducing taxes on those activities.

Unfortunately, there is little in the Federal Government's tax reform package to indicate that these steps have been given any consideration. The new taxation package, based around a flat rate GST, does not differentiate between sustainable and beneficial activities and environmentally damaging activities. Indeed, some of the tax differentiation that (largely by default) already exists will be reduced or removed as a result of the package.

The Government may well argue that any form of tax differentiation is contrary to its principle of fiscal neutrality. However, such an argument ignores the prospect that tax uniformity will not promote even economic efficiency (let alone ecological sustainability) if current production and consumption activities are accompanied by significant environmental or social externalities. The Government appears to accept this rationale, for it is prepared to maintain and even increase tax differentiation on some goods and services, notably excises on tobacco and alcohol, in recognition of the significant social (health) externalities associated with their use.

The GST

The proposed GST is the central component of the Government's tax reform package. By itself, a flat rate GST is unlikely to have either significant adverse or positive impacts on the environment. On the one hand, a GST will change the prices of many environmentally damaging activities. On the other hand, the prices of many environmentally beneficial or neutral activities will also change.

Without modelling and other empirical work it is difficult to be certain on this point. There is little available evidence from overseas to indicate what impact, if any, the introduction of a GST/VAT has had on overall levels of consumption, resource use and environmental damage. The impact is likely to depend as much on the effects of tax changes on the disposable incomes of consumers and their patterns of savings and investment.

There are exceptions to the apparent environmental 'neutrality' of the GST. These will occur if the abolition of the wholesale sales tax (WST) and its replacement with a GST changes the prices of environmentally beneficial goods and services relative competing goods and services that are more environmentally damaging.

One notable exception is the price of solar products. Solar products including solar hot water heaters and photovoltaic (PV) panels are currently exempt from the wholesale sales tax. The introduction of a GST, with no exemption, will therefore increase their price relative to other more environmentally damaging energy products and services, the prices of which may actually fall in some circumstances. Solar products will be particularly disadvantaged in comparison to remote area power supplies based on diesel fuel. An extension of diesel credits to off-road users by (see following section) will reduce the price of diesel-based power supplies in some circumstances.

Another potential exception is the price of motor vehicles (see section below).

The solar example highlights the key deficiency of the GST in the form proposed by the Federal Government. Virtually all other OECD countries that have introduced a VAT over the past few years (principally in Europe) have included the principle of tax differentiation (between environmentally and socially beneficial and damaging activities) as part of their overall tax reform agenda. Countries that have taken this course include the Netherlands, Sweden, Denmark, and Finland. In most cases, the VAT has been accompanied by new or increased environmental and resource-based taxes, levied at a significantly higher rate than the VAT. In many cases, existing distortionary taxes and rebates have also been reduced or removed.

Fuel excises

An important element of the Federal Coalition's tax reform package is the proposal to reduce petroleum fuel excises and/or increase tax credits to business users. This proposal provides the clearest contradiction of the principles of ecological tax reform and has significant environmental implications.

The proposed changes are as follows:

- all business users of petrol and diesel will be able to claim a credit on the GST payable on fuel, resulting in a reduction of about 7c/litre relative to current prices - total value approximately \$ 1.98 billion (2001-02);
- all heavy transport (over 3.5 tonnes gross) will be eligible for a diesel fuel credit which will reduce the price of diesel fuel by around 25c/litre - total value approximately \$ 0.93 billion;
- off road use of diesel fuel to receive credit for full amount of excise - total value of approximately \$ 2.65 billion (this will effectively replace and extend the existing diesel fuel rebate scheme).

The total reduction in net fuel excise revenues as a result of these changes will be about 36 per cent or \$ 3.4 billion (2001-02) made up of:

- \$ 2.91 billion in transport-related credits and rebates;
- An extension of diesel credits to off-road users by \$ 0.49 billion (principally to the mining industry).

In environmental terms, the reduction of excises on road-based transport is of greatest concern. Existing subsidies to the road transport sector are estimated in 1994 to be at least \$8.5 billion (see NIEIR 1996), made up of:

- \$ 1.2 billion in financial subsidies (government outlays less current excises);
- \$ 1.3 billion in environmental subsidies (including noise and air pollution, but excluding greenhouse gas emissions);
- \$ 4.0 billion, traffic accidents;

- \$ 2.0 billion, congestion.

The proposed fuel excise changes will reduce total fuel excises paid by the road transport sector by approximately \$ 2.3 billion annually, effectively adding \$2.3 billion to existing subsidies.

It should be noted that the proposed fuel excise reductions are contrary to global trends. If implemented, the changes would represent the only example of tax reform in an OECD country in recent years that has resulted in a net reduction of fuel and other energy-related taxes and charges. Although in some cases, tax reforms in other OECD countries have resulted in reductions of petroleum fuel excises, these reductions have generally been more than offset by the introduction of new energy and/or carbon taxes. The net result has been an overall increase in fuel and energy prices.

The proposed excise changes are also in breach of the spirit and quite possibly the letter of Article 2, paragraph 1 (a), subsection (v) of the Kyoto Protocol, which states that governments shall:

"... implement and/or further elaborate policies and measures in accordance with its national circumstances, such as progressive reduction or phasing out of market imperfections, fiscal incentives, tax and duty exemptions and subsidies (emphasis added) in all greenhouse gas emitting sectors ...".

The major argument being advanced by the Federal Government for reducing fuel excises is the need to make Australian industry more competitive by reducing business costs. This argument ignores a number of factors including that:

- current fuel excises and charges in Australia are not high when compared to most other OECD countries, being in the low to medium end of the scale;
- existing net subsidies to the road transport sector represent a real cost to the community - increasing those subsidies by reducing fuel excises will further increase the cost imposed on the community as a whole;
- there are more appropriate options for reducing business input costs - reducing payroll taxes is perhaps the most notable of these options.

A welcome move by the Federal Government is its decision to maintain the fuel excise exemption for alternative fuels.

The price of motor vehicles

The reduction in vehicle prices that would result from replacing the current 22% sales tax with a 10% GST carries with it both positive and negative environmental implications. On the one hand, the price reduction may increase the turnover of old, fuel inefficient and polluting vehicles. This is an important consideration given the average age of the passenger motor vehicle fleet in Australia, which at more than 15 years is one of the oldest in the OECD.

On the other hand, the reduction in vehicle prices, combined with a reduction in fuel excises (for some consumers) and an increase in public transport fare prices as a result of the GST will increase the attractiveness of motoring compared with public transport. Given the environmental benefits of most forms of public transport compared with motor vehicles - in terms of reduced air pollution and greenhouse gas emissions - and the significant long term trend away from public transport and towards private motor vehicle use, this is an unwelcome scenario.

One means of reinforcing the environmental benefits associated with reducing the tax rate applied to motor vehicles would be to encourage purchasers of new fuel-inefficient motor vehicles to pay more for those vehicles through a skewed GST that favours fuel efficient vehicles and penalises fuel-inefficient vehicles.

Distortionary tax rebates and subsidies - not removed

As previously discussed, the removal of distortionary tax rebates and subsidies which encourage ecologically unsustainable resource use and pollution is a significant step needed to achieve ETR. A number of existing distortionary tax subsidies were discussed in detail in Part 1 of this report including:

- tax rebates and deductions which encourage land clearing and drainage of wetlands;
- tariff and taxation advantages for high fuel consuming/polluting four-wheel drive vehicles; and
- concessions within the existing fringe benefits tax system that encourage the use of company cars.

Unfortunately, none of these appear to have been addressed through the proposed tax reform package.

Absence of 'green' taxes

Another element missing from the Federal Government's tax reform package is new 'green' taxes and charges. Green taxes, combined with offsetting reductions in taxes on value-adding activities such as payroll tax are an essential component of ETR.

By failing to consider this direction as part of its tax reform agenda, the Federal Government has lost an enormous opportunity to address some of Australia's major environmental problems while enhancing employment prospects.

The Government has also defied a trend that is occurring in most other OECD countries (see Table 1, Part 1) and has ignored a recommendation of the OECD Group on Environmental Performance. In November 1997 the Group recommended that the government should "develop the use of economic and fiscal instruments to promote more cost-effective pollution prevention and land management".

2.2 What is the Impact of the Package on Government Revenue?

Intergenerational equity (equity between generations) is a key principle of ESD. A prerequisite for intergenerational equity is maintaining or improving the quality of and public access to essential government services such as education and health. This must be done in a manner that ensures that the level of public indebtedness does not increase over the long term. Maintaining the taxation revenue base at an adequate level is essential to achieving these two objectives concurrently.

Contrary to popular perception, Australia is classified as a 'small government' country compared with most other OECD economies (Economist 1997). The level of all government taxation revenue in Australia amounts to less than 38% of GDP. This is low relative to most other OECD countries in which government revenue constitutes approximately 44% of GDP on average.

Australian government outlays are also relatively low, amounting to less than 37 per cent of GDP in 1996, compared to an average of about 46 per cent for OECD countries (Economist 1997). Only two OECD countries, Japan and the USA, have significantly lower government expenditure, proportionally, than Australia.

In theory, broadening the taxation system with a 'growth tax' (in the form of a GST) should help to maintain the public revenue base. In practice, due to significant income tax cuts for middle and high income earners, and its failure to address some of the existing income tax loopholes, the tax package will lead to a reduction in net government revenue of \$4.8 billion in 2000-01, rising to \$7.25 billion in 2002-03. This outcome will almost certainly reduce the capacity of the government to maintain essential public services such as health and education, at least in the short to medium term. Alternatively, maintaining services at current levels or improving them, while reducing the revenue base, increases the risk of public sector debt in the future.

There are also significant implications of this future revenue scenario for government expenditure on environmental protection and management. Although total government expenditure on environmentally-related programs has improved overall in recent years, it was still only about 0.37 per cent of federal government outlays in 1997/98. Furthermore, of total environmentally-related expenditure of \$503 million, about \$290 million or 58 per cent is currently funded through the Natural Heritage Trust (NHT). And NHT funds, financed through the part sale of Telstra, are set to decline after 2000. Underlying or core expenditure by the federal environment department (Environment Australia - the major channel of federal expenditure on the environment) has already fallen by 33 per cent between 1995/96 and 1998/99. A major concern is that a long term reduction in government revenue projected under the taxation package, and no new funding for the NHT early next century, will see total government expenditure on environmental protection and management fall significantly within a few years.

2.3 Does the Package Promote Intragenerational Equity?

Intragenerational (social) equity is also an important principle of ESD.

ACF has not examined in detail the equity implications of the Federal Government's tax reform package. However, it is noted that the majority of the welfare organisations and church groups that have examined the tax reform package have expressed concern about its equity impacts.

Income distribution is one important - but by no means only - aspect of social equity. Recent studies point to the key role that federal government policy, in particular taxation policy, can play in income distribution. For example, between 1981-82 and 1993-94 equality in the distribution of real private income is estimated to have fallen. However, after adjusting for the effects of government measures including income tax, indirect tax and a range of government benefits, equality in the distribution of real final income has actually increased over the same period (Johnson et al. 1995).

Given the importance of government taxation policy to income distribution, it is not surprising that welfare and church groups have focussed on the distributional implications of the tax package. Particular concern has been expressed about the distributional impacts of a change to the overall tax mix - from direct to indirect taxation - as a result of the GST. At the same time, cuts to marginal tax rates appear likely to principally benefit upper middle to high income earners. Although some income tax loopholes are being targeted through the package - including more consistent treatment of company trusts and fringe benefits - others remain untouched. The potential for the reduced revenue base to limit essential service provision to low income earners and welfare recipients is another area of concern.

The full equity implications of these and other aspects of the Government's tax reform package need to be evaluated in detail.

2.4 Does the Package Increase the Transparency of the Taxation System?

The final principle against which the Federal Government's tax reform package is assessed is that of transparency. Tax reform consistent with ESD should increase the transparency of public revenue raising and expenditure.

By removing some of the existing loopholes and complications in the tax system, the proposed tax package will go some way towards improving the transparency of Australia's taxation system. The Government's decision to release full details of its taxation package prior to an election is also a positive move - one that may help to increase the community's understanding of Australia's system of revenue raising and expenditure.

That said, there are many existing distortions and subsidies inherent in Australia's system of public revenue raising and expenditure that are not addressed by the package or being made transparent. As discussed in Part 1 of this report, these subsidies include an estimated \$5.7 billion in annual financial subsidies to resources use. As well, there are environmental subsidies, valued at billions of dollars annually, which are not transparent to the public.

For political and other reasons, the government of the day may deem that removal of all of these subsidies is not feasible or appropriate. If that is the case, it is essential that remaining subsidies are at least transparent to the community. Transparency will best be achieved through:

- an updated and modified system of national accounts that reflect resources depletion, environmental degradation and other factors that bear upon the achievement of ESD; and
- green budgets that detail expenditure by all levels of government on repairing environmental problems, defensive expenditure aimed at preventing future problems, and expenditure and subsidies that contribute to environmental degradation.

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Appendix 7

Some discussion of the Economic Relevance of Biodiversity and Natural Resource Management Issues for the National Economy

NB: This discussion focuses on land and water use - it does not cover other aspects of natural resource management such as forests and ocean fisheries.

The development of (for example) agriculture in Australia to date has undoubtedly produced much in the way of economic benefits for past and current generations. But this development has come at a heavy cost; a cost which can be expressed in a variety of ways.

As an industry sector, agriculture (ranging from intensive irrigated agriculture to pastoralism) has a cumulative record in environmental degradation which is second to none. Broadly speaking, the most significant impacts have been (and continue to be):

1. the wholesale clearance of native vegetation in arable and pastoral lands, causing the destruction and fragmentation of terrestrial ecosystems, causing (or contributing to) major hydrological changes, salinity, and soil degradation (see also 4*, below)
2. the degradation of river and estuarine systems and aquifers resulting from extractive demands on the one hand, and degrading processes (eg. grazing, clearing, diffuse-source runoff) on the other
3. degradation of semi-arid and monsoonal ecosystems in the pastoral zone due to continuous, often heavy, grazing pressure
4. soil degradation caused (or *partially-caused) by poor agricultural practice, including acidity, salinity, compaction, structural decline, and erosion.

Australia is regarded as a megadiverse country, with more than 1 million species thought to exist within a wide range of ecosystem types. 85% of flowering plants, 84% of mammals, 45% of birds, 89% of reptiles, 93% of frogs, and 85% of coastal and freshwater fish are endemic to Australia, being found nowhere else in the world. Australia's many invertebrates are, as yet, poorly described.

Generally speaking, Australians are not very knowledgeable about our ecological heritage. To those of us who are, a drive through any rural landscape provides glimpses of what was once there – remnant patches of bushland in various stages of degradation, a few species of indigenous plants scattered along a drainage line, individual (often very old) trees in paddocks, or the distinctive colour and form of some native grass species.

Degradation of ecological communities can be a very rapid process (wholesale clearing, for example) or it can take decades before it is noticed. In our work we often encounter farmers who have noticed major changes to the landscape during their lifetimes, and are concerned about those changes. Anecdotes are commonly encountered about how there used to be many more bird species, how bandicoots, quolls and gliders were once common, and about the fish that used to be present in the river but are now nowhere to be found.

Going further back in time, the writings of some early settlers about the nature of Australia provide a glimpse of what we have lost to date, and a rough benchmark against which we can compare the present. The following quotes refer to Melbourne in the first couple of decades of European settlement:

“The Yarra River is deep; but it is difficult to navigate, for boats, on account of the quantity of sunken timber. It is about 60 feet wide, and margined with trees and shrubs. Among these can be heard, the tinkling note of the Bell-bird and ... something like the crack of a whip. ...The river is fresh to Melbourne, where there is a rapid. ...The water continues fresh for a considerable distance below the town... Towards the mouth of the river, there are swamps. covered with a narrow-leaved, white flowered Melaleuca, drawn up like hop-poles, to 30 feet in height... Contiguous to the river, there are some beautiful pieces of land, clear of trees and covered with green grass.....

The emus are fast retiring before the white population and their flocks and herds. The large bird of the crane kind, called here the Native Companion, and a Bustard, denominated the Wild Turkey, are plentiful; there are also yellow-tailed Black Cockatoos, Round-headed White Cockatoos, Parrots of

various kinds, Pelicans, Ducks, White Hawks, Laughing Jackasses, Kingfishers, Quails and various birds,
.....

James Backhouse, 1837

Day after day it was no slight army of trees against which we had to do battle;..... Some of the trees [probably redgum] were of unconscionable girth, six or eight yards in circumference..... One of these monsters of the wild was fifteen days burning; burning night and day....

We entirely routed the quiet of that old primeval forest solitude....

Then what curious and novel creatures, – bandicoots, flying squirrels, opossums, bats, snakes, goannas, and lizards – we disturbed, bringing down with dust and thunder their old domiciles about their ears. Sometimes, also, we found nests of young birds and of young wild cats; pretty black creatures, spotted with white. The wild denizens looked at us wildly, thinking, probably, that we were rough reformers, desperate radicals, and had no respect for immemorial and vested rights.....

No matter, we must do violence to our sense of the beautiful, and to nature's sanctities; we must have corn land, and we, with immense labour, cleared seventeen acres.....

Richard Howitt, Alphington, Melbourne, 1840

“I do not believe that any other country in the world is better adapted by nature as a home for waterfowl than Australia. Dreary swamps miles in extent, lagoons of immense size, where the bullrush and reed vegetate in rank luxuriance; creeks and water holes, completely hidden from the view by dense masses of tea-tree scrub, afforded unmolested shelter and breeding places for the birds; and a few years ago, when the sound of a gun was rarely heard in the solitude of these morasses and fens, the country around Melbourne must have literally swarmed with wild fowl...”

H. W. Wheelwright, 1857

In the arable farming zones of Australia, the most obvious manifestation of ecological degradation is the decline of native vegetation and the habitat it provides, resulting in often-severe habitat fragmentation (ie. creating small “islands” of habitat), often in association with on-going degradation of what remains as a result of grazing, the ‘edge’ effect, weed invasion, elevated nutrient levels (agricultural fertilisers), timber-cutting, changed fire regimes, and competition and predation by introduced fauna (cats, foxes, bees, rabbits, pigs, etc.).

According to the 1996 State of the Environment Report, around 600,000 hectares of Australia’s native vegetation is cleared annually, “about half the rate of clearing in the Brazilian Amazon in 1990-91”. Furthermore, “Nearly 70% of all native vegetation has been removed or significantly modified by human activity since 1788”.

The degree and extent of degradation to terrestrial ecosystems is often in proportion to either the value of the land for agriculture, or to the ease with which land can be cleared. For the most part, few extensive patches of bushland remain on the more productive soil types in the best climatic zones, with any remnant vegetation confined mainly to hilltops. Many farming areas are almost totally devoid of native vegetation. In contrast, vegetation communities indigenous to poor soils (eg. Pilliga Scrub in central NSW; East Gippsland coastal lowlands; sandy heathlands of S.W. WA) or to rocky landscapes (eg. Blue Mountains, NSW; Grampians & Wilsons Promontory, Vic) often remain more-or-less intact. Indeed, most of Australia’s national parks are only there because they were never considered as being worth clearing for agriculture. Of all land which is suitable for agriculture, only a very small proportion has been reserved for conservation purposes.

Habitat fragmentation – the isolation of small ecological communities due to clearing – has a serious impact on many species.

- Some species of animals exist in very low densities (for example, owls and many species of marsupials), and require very large areas of habitat to survive.
- Some bird and insect species require (for example) a wide range of plant species flowering at different times to provide food; diversity which can be seriously lacking in fragmented habitats.
- Some plant species require specialist pollinators, and when there is insufficient habitat to support the pollinators, the plant species die-out.
- Some species of birds and mammals require a diversity of understory species to serve as habitat, food supplies and/or cover from predation – often the plants to disappear first in poorly-managed remnants are understory species.

- Many species require more genetic diversity than some remnant habitats are capable of supporting.
- Depending on species mobility, once a species has disappeared from an “island” habitat, it will invariably have disappeared for ever from that location.

Across much of the pastoral zone, the major issues relate to processes which, over time, reduce the diversity and structural composition of arid and semi-arid habitats. Here, over-grazing is invariably the major culprit, together with feral vertebrate pests, which collectively depauperate the landscape of much of its shrubby vegetation, suppress tree and shrub regeneration, destroy the habitat of many species of animals and birds, and increase pressure from predation.

In the Great Artesian Basin, the introduction to water to the landscape has had a profound impact. Once this landscape consisted of ephemeral river channels in low-lying flats and broad expanses of sandhills supporting a variety of plants and animals. The provision of permanent water to the landscape through some 40,000 un-capped (ie. permanently flowing) bores has allowed a massive increase in both grazing pressure (cattle, kangaroos, rabbits, etc.), and a major increase in introduced predators (cats, foxes, dogs). In increasing grazing pressure, vegetation is vastly reduced, and habitat for small mammals and many bird species has virtually disappeared, and numerous species are regionally (if not totally) extinct.

Degradation to riverine and floodplain ecosystems is perhaps less obvious to us terrestrial humans, but nonetheless profound. River regulation, changed flow regimes (eg. reduced and/or reversed seasonal variability), water abstractions, deteriorating water quality (nutrients, sediments, toxicants and pathogens), reduced flooding, cold and (sometimes) anoxic releases from dams and weirs, barriers presented by in-stream structures, the degradation of river frontage vegetation, changes to channel and bank structure, and erosion, all constitute degrading processes which are becoming increasingly widespread in many river systems.

Australia’s largest and most diverse river system – the Murray Darling – is very degraded. A recent (and as yet unpublished) survey by NSW fisheries failed to find 50% of fish species previously found in the Murray and Murrumbidgee Rivers, and failed to find 20% of fish previously found in the Darling and its tributaries. Aquatic invertebrates are also in trouble. Wetlands decline has been widespread across the basin, and several wetlands assessed as being of national or international significance can only be described as severely degraded. Waterbird diversity and abundance has reduced accordingly.

“Inland waters of southern Australia are in poor shape, largely because of poor management. Too much water is being taken from some systems, and nutrient and algal levels are of concern. Algal blooms may be becoming a more serious problem.

‘Droughtproofing’ by damming has starved rivers of water, and drastically altered seasonal flow regimes in the most developed areas.

Pollution, over-allocation of water, changed flow regimes and exotic and displaced species are all affecting native species.”

1996 State of the Environment Report

For the most part, the decline of riverine ecosystems has resulted from agricultural impacts, particularly irrigated agriculture and associated infrastructure.

Regulatory structures, combined with the way that they are managed, can have an appreciable impact on agricultural productivity. For example, farmers in Victoria’s Mitta valley used to enjoy brief, beneficial flooding around twice annually, which maintained soil moisture throughout the year and rendered irrigation unnecessary. However, since construction of Dartmouth Dam in the early 70s, (constructed without an environmental impact statement), flooding is both reduced in frequency, and more prolonged and intense when it happens. Pasture destruction (an expensive problem) is common in such flood events. Now most graziers in the valley must irrigate (another added expense), and the very cold temperature of water released from deep down in the reservoir (the main causal factor in the disappearance of native fish below the dam) can seriously retard pasture growth when it is applied to pastures.

Hydrological changes resulting from agriculture vary considerably from place to place, but are nonetheless profound. For the most part, these changes stem more-or-less from inappropriate vegetation clearance. These include:

- Increased aquifer recharge in areas with a saline sub-soil, resulting in rising groundwater levels, saline seeps and scalds (& loss of productive land), and elevated salt levels in rivers and streams
- Erosion of stream banks (due to clearing and grazing) leads to an increasing proportion of flows travelling down river channels (rather than across floodplains), which in turn leads to increased energy dissipation (and erosion)

within river channels. This causes in-channel scouring and/or widening, reduced flooding (as required for fertile floodplains and healthy billabongs), reduced in-stream biota and their habitats, increased ratio of *erosion to deposition* on floodplain farms, and on-going growth in expensive river management works. Note here that no regulatory restrictions apply to clearance of vegetation and grazing on river frontages in agriculture, whereas quite strong regulations apply to forestry (for example).

- As native vegetation cover (and a deep, friable root zone) acts as a “sponge” in rainfall events, clearance and associated soil compaction increases runoff during rainfall events, and can be seen particularly in a higher, briefer flood hydrograph. This “peakier” hydrograph, (now a common feature of many agricultural catchments), means increased flood energy, increased erosion (particularly in-stream), reduced in-stream biota, and reduced river channel stability.
- Groundwater use, or perhaps surface drainage systems, can reduce, or even cease, discharge from aquifers into (for example) coastal ecosystems (such as seagrass beds); a fact which has not been well-researched, but which nonetheless may have a considerable impact.
- Levee construction (which has been largely unregulated to date) for flood mitigation simply moves the flooding elsewhere, and in the process, concentrates the energy associated with flood flows into a more confined space, thereby increasing erosion and other damage.

Degradation of coastal ecosystems has, to some extent at least, been caused by the impacts of agricultural activity. High levels of erosion (ie. movement of sediments and nutrients into coastal waters), leaching from acid sulphate soils, reduced flows, pollution, draining coastal wetlands, river barrages and weirs, (to provide for freshwater for irrigation) and the full range of impacts from river regulation have all contributed to the degradation of coastal waters. Of particular concern has been trends in the decline of coastal seagrass beds and coral reefs associated particularly with increased sediment and nutrient loadings.

Australia has an appalling record of mammal extinctions, with 10 (out of 144) marsupial extinctions and 8 (out of 53) rodent extinctions since European settlement. While there has been at least one mainland bird extinction (possibly more) and several island species, 50 species are endangered or vulnerable. 3 frog extinctions are documented, and many species of frogs, reptiles and freshwater fish are either endangered or vulnerable. 76 plant species have become extinct, and over 1000 species are considered either endangered or vulnerable. The parlous state of many plant and animal species and sub-species indicates that many more extinctions are likely.

The need for more accurate assessment of the impacts of agriculture, both in economic and non-economic terms, is a critical one, particularly in terms of (i) resolving cost sharing (who pays?) issues in environmental management programs; (ii) developing a clearer approach to prioritising agricultural and environmental priorities; and (iii) measuring the performance of programs designed to arrest or reverse environmental degradation resulting from agriculture.

All levels of Government in Australia have played a major role in shaping Agriculture. Government support for agriculture (both financial and non-financial support) has been a constant feature of the Australian economy. More recently, government support has been provided to redress environmental problems, although the extent to which this has been achieved is arguable.

ACF is concerned that, in many ways, governments’ roles in agriculture continue to contribute to environmental degradation, and serve as obstacles to ecological sustainability. Some or all of these deficiencies can be found in all levels of government. To summarise, these deficiencies can be found in:

- government subsidies to the capital and recurrent costs of providing water resources
- government subsidies to the provision of land
- current and historic deficiencies in regulating vegetation clearance and biodiversity conservation on private and leasehold land
- “environmental” subsidies aimed specifically at improved on-farm productivity and property values (ie. *sustaining production*) rather than at addressing ecological and natural resource degradation in a strategic way (*ecological sustainability*)
- special taxation concessions (eg. diesel tax rebate)
- special assistance programs (drought relief; Rural Adjustment Scheme)
- inappropriate planning and environmental laws/controls, including exemptions from many planning controls and environmental regulations which apply to other industries

- failure to recover costs and realise a market return in administering pastoral leases and grazing licences

While ACF is critical of deficiencies such as these, it must be noted that there are a very many other countries which have similar (often worse) deficiencies in agricultural policy and regulation. Similarly, environmental degradation caused by, or arising from, agriculture, is also a major international issue. While this is not an excuse for failing to address the issues of ecological sustainability in agriculture in Australia, the realities of global markets and global competition demands an international response.

The Economic Dimensions of Environmental Degradation in Agriculture (Market Failure and Economic Externalities)

To a large extent, the continuing and rapid decline of biodiversity and ecological integrity cannot (and should not) be expressed in economic terms; a principle which is strongly espoused in ESD principles and in international agreements such as the Biodiversity Convention. ACF believes that these ‘intrinsic values’ should stand on their own, irrespective of any market or non-market values which may be assigned by humans.

However, there are undoubtedly many different economic dimensions to this loss in biodiversity, both for current and future generations, including the following semi-discrete categories of economic costs:

1. increased costs (or increased need for expenditure) in ecosystem (and species) management and rehabilitation
2. reduced benefits to agriculture from healthy ecological functioning, resulting in increased farm management costs across a wide variety of areas
3. reduced surface and groundwater quality and availability, leading to increased costs (eg. water treatment and storage costs)
4. increased costs resulting from (for example) inappropriate floodplain or coastal developments for agriculture
5. opportunity costs in terms of reduced potential for non-agricultural activities (eg. tourism, recreation, timber production, fishing, genetic resources)
6. negative externalities, including impacts on other farms, impacts on existing industries (such as riverine and coastal fisheries), and contributions to greenhouse emissions.
7. reduced utility and cultural values associated with natural values which can, arguably, be expressed in terms of economic values and/or economic welfare.

For the most part, these can be expressed as examples of **market failure** and **economic externalities**. To some extent, these many instances of market failure and economic externalities reflect a lack of knowledge, but many other factors are involved. Whatever the reasons, they warrant a range of policy responses which are discussed in subsequent sections.

A brief discussion of each of the above – including examples – follows.

Increased Ecological Management and Rehabilitation Costs

Through its many and varied impacts on terrestrial and aquatic ecosystems, agriculture (in all its forms) has created a pressing need to allocate money and resources to ecosystem management and rehabilitation.

As species and their habitats decline, be they on public or private land, the need for active intervention to conserve these values increases. While very often these resources are simply not forthcoming, the need for funding continues to grow.

To the extent that public expenditure on ecosystem management and rehabilitation is forthcoming, it is spent in a number of ways, including:

- flora and fauna monitoring and survey work
- research into ecosystem management and management issues in areas such as:
 - environmental flows (hydrology, freshwater ecology, floodplain and wetlands ecology, geomorphology, botany)
 - rangelands management (arid lands ecology, pasture preference, stocking rates, soils, hydrology)
 - management of threats to estuaries and fisheries habitats

- preparation and implementation of management plans (including recovery plans) for threatened species and communities
- increased requirements for management planning and active intervention in parks, reserves and other public lands, in part due to the lack of similar habitats outside of the reserve system, and in part due to more direct impacts of farming (eg. weed introduction). Management issues include vehicular access, fencing, weed management, feral animal control, commercial uses (firewood, timber, bee-keeping, grazing, mining), fire management, recreation, etc.
- increased need for the development of policy and regulatory statements such as (for example) State Environment Protection Policies aimed at reducing diffuse-source pollution, improving water quality, and protecting freshwater and estuarine habitats
- grants to non-government organisations for biodiversity conservation initiatives such as:
 - biodiversity conservation on private land (eg. fencing remnant vegetation; streamside rehabilitation; revegetation)
 - species monitoring & research (eg. bird counts/banding; mammal surveys)
 - policy development & advocacy
 - education and extension

Reduced Ecological & Related Services to Agriculture

Agriculture undoubtedly receives a variety of ecological services from the natural environment.

Healthy soils are living systems in their own right, and contain a wide diversity of biota, including invertebrates, microorganisms and fungi. While clearing for agriculture alone does much to damage and change soil biota, the biota that remains contributes much towards soil productivity, playing a critical role in cycling carbon and other nutrients, in liberating nutrients and trace elements from the soil, and in maintaining soil structure.

Agricultural practices can do much to damage soil diversity and productivity. Soil compaction, excessive tillage, fertiliser application, over-grazing and irrigation are all examples of farming practices which can damage soil biota. Similarly, secondary salinity and acidity – in themselves the results of inappropriate land use – damage soil biota and (in the process) soil productivity.

Native vegetation and wetlands can provide habitat for a variety of native animals which prey on agricultural pests. Arthropods, predatory insects, birds, small dasyurid marsupials and reptiles provide services to agriculture by controlling pest insects in particular. Birds of prey help to control numbers of rodents (in cropping zones) and rabbits.

Barmah and Gunbower forests – remnant redgum floodplains which have been significantly degraded by river regulation and reduced flooding – nonetheless still provide habitat for large numbers of ibis. It is estimated that these ibis provide pest management services worth \$750,000 annually to local farmers.

A multitude of other examples exist. Retention of some tree cover can reduce wind damage to crops, and reduce stock losses from extreme weather conditions. Tree retention (or revegetation) on high salinity recharge zones, or on aquifer interception zones, can prevent (or mitigate against) the spread of dryland salinity. Some research is showing that in some areas, native grasses, combined with low-to-medium tree cover, can increase grazing productivity limiting the effects of sun, wind and frost, and by extending the growing season. And a healthy diversity and cover of vegetation in pastoral country enhances productivity and resilience to drought.

Attempts to improve productivity by displacing indigenous vegetation do not always meet with success. Our history is littered with examples of plant species introduced with the intention of improving productivity, but which have achieved the opposite. According to the 1996 State of the Environment Report, 463 exotic plant species have been introduced as pasture into the pastoral zone since 1947, and this number continues to grow. “Only 5% of these have proved useful as fodder, yet 13% have become problem weeds”.

Reduced Surface and Groundwater Quality and Availability

As discussed above, clearing for agriculture, erosion associated with agricultural practice (grazing, soil degradation, etc), pollutants in diffuse-source runoff, river regulation and water extraction for irrigation, mismanagement of artesian water, and groundwater pollution all have an impact on water resources.

A few examples are briefly discussed as follows:

- As water entitlements are issued within a surface or ground water system, (which has its own environmental impacts) allocations may (and do) reach the point where each further allocation reduces the security and reliability of supply for existing users. There are many examples throughout the Murray Darling in particular of this continual de-valuing of water entitlements due to over-allocation and over-exploitation.
- Declining water quality, together with episodic events such as toxic cyanobacterial blooms (blue-green algae), increases the cost of treating and/or storing water for domestic, industrial and (in some cases) stock watering purposes. In rural Victoria, for example, only a very few domestic water supply systems meet acceptable health and quality standards, largely as a result of agricultural impacts.
- Around 40,000 un-capped artesian bores flow into lengthy bore drains 24 hours a day within the Great Artesian Basin, a fact which has significantly reduced artesian pressure across much of the basin, and hence reducing water availability. These, combined with a lengthy (and very leaky) bore drain network, have simply provided water to many vertebrate pest species, adding grazing pressure to a sensitive landscape. This is a complex issue with serious economic and ecological implications.
- Some coastal aquifer systems have been over-allocated, and use exceeds the recharge rate. In such circumstances, saltwater can 'intrude' into the aquifer, rendering it un-useable (or at least potentially un-useable). One example here is the irrigated horticulture zone on eastern Westernport Bay, Vic.
- Similarly, "beneficial" flooding in many rivers can improve soil productivity and eliminate any need for irrigation. However in many rivers this flooding has been seriously curtailed by river regulation (eg. Mitta River, Vic), by vegetation-related channel erosion (eg. Cann Valley, East Gippsland), or by both (eg. Murray River).

Increased Costs Resulting from Inappropriate Developments

Undoubtedly many areas of Australia are now farmed which probably should never have been farmed, or at least not to the extent that farming takes place now. Here are a few examples:

- Many riverine floodplains have been inappropriately cleared and developed for agriculture. In some areas, the reality of natural flooding patterns has incurred a cost either in terms of pasture/crop damage, lost productivity, increased flood mitigation costs, reduced irrigation water availability (ie. from increased dam airspace), or all four of these. And pressure to deal with The recent case where the Murray Darling Basin Commission was forced to release a large volume of water from Hume Dam, and subsequently agreed to compensate floodplain graziers for lost pasture, highlights the costs of such inappropriate development.
- In some locations (eg. SW Victoria) coastal grazing activities have, over time, denuded or degraded natural vegetation, and probably constitute a major factor in coastal erosion and loss of land.
- Clearing and draining low-lying coastal soils known as 'acid sulphate' soils can profoundly change soil chemistry, resulting in highly acid runoff. This can have a devastating impact on the productivity of coastal fisheries.
- Clearing mangroves for (for example) aquaculture (mainly an overseas phenomenon) can have unexpectedly large economic impacts. In Queensland, it has been estimated that the average hectare of Mangrove habitat is worth \$8,000 annually in fish production.

Opportunity Costs in Agricultural Land Use

The area of opportunity costs arising from agricultural land use is difficult to discuss in anything other than abstract terms. The fact that agriculture exists (and that land has been converted to this end) means it is difficult to envisage non-agricultural land uses. However, there is an argument that, in some cases at least, alternative, less damaging, yet profitable land uses could have constituted a relatively "*more ecologically sustainable*" use of land than agriculture.

Without re-iterating too much about the impacts of agriculture (and associated clearing), agriculture has been developed at the cost of some other forms of land and resource use.

Nature conservation in itself is a land use which can generate considerable economic activity in tourism and recreation in particular. A 1994 study of the economic value of Grampians National Park in Victoria (Read Sturgess and Associates) estimated that the Park generated \$398 million annually for Victoria, with approximately ½ of this being spent in the Grampians region. If more natural areas remained for such purposes, more of this sort of economic activity could be generated.

Similarly, in some natural coastal and riverine areas, or in areas of bushland with low agricultural potential, residential or tourism accommodation may well have proven to be a more productive use of land than clearing for agriculture.

In some marginal grazing areas, apiarists working in remnant bushland actually generate an equivalent or higher net return per hectare in honey production than (for example) sheep and cattle grazing. While bees do have considerable negative environmental impacts in their own right, the total impacts would, I suspect, compare much more favourably to the impacts of farming in such areas.

Other land uses, including timber production in some areas, could conceivably be a more valuable and less damaging use of land than clearing for agriculture.

In some areas, large areas of prime agricultural land is being lost from production for low and medium-density residential development; development which could be readily located (via planning controls) onto less productive land. If (for example) high salinity recharge zones were “retired” from agricultural production and revegetated, they could also double as low-density urban development subdivisions with land-use covenants attached, thereby solving a salinity problem as well as ensuring that the farmers concerned can realise some value from the property concerned.

The Murray Darling river system used to support firstly a major indigenous fishing industry (fish was a staple food for river valley communities), and more recently, a large commercial fishing industry. However with increasing river regulation

(Other) External Economic Impacts

Throughout Australia the external economic impacts are many and varied, and for the most part are quite readily apparent. Quantifying these externalities is another question, however, and despite some good attempts (eg. ABARE’s work on the external costs of dryland salinity), generally assessment of these external impacts has been lacking.

Note that some of the examples discussed elsewhere in this section can also be described as negative economic externalities.

Again, without going into too much detail, we offer a few general examples of negative economic externalities as follows:

- Up until recent times, the Murray Darling river used to support a large fishing industry. In pre-European days, these inland river valleys used to support high densities of Aboriginal people, and fish was their staple diet. More recently, the Murray Darling used to support quite a large commercial fishing industry. Now, however, river regulation, water extraction and a range of other impacts has reduced these fisheries to a small fraction of their former size.
- Impacts on coastal fisheries (caused by elevated sediment levels, changed flow regimes, water pollution, leachates from acid sulphate soils, river regulation, etc.) is also likely to be significant in economic terms.
- More generally, changes to hydrological regimes (see above) can have a costly economic dimension in areas such as water treatment, accelerated erosion, river management, and flood damage (eg. from levee construction).
- Salinity is a problem which only rarely affects the landholdings which have contributed most to the problem; rather salinity is generally manifested outside of the major recharge areas. Dryland salinity in particular is a problem where the major underlying causes (vegetation clearance, particularly in high recharge zones) are typically manifested on properties well away from the most significant recharge zones. Salinity can also have a major economic impact on (for example) road maintenance costs, water quality management, and the suitability of land for urban subdivision.
- Pastoral activities have had – and continue to have – a significant impact on the value of traditional economies of Aboriginal people, often severely affecting the abundance and distribution of plants and animals used for food. Note here that, particularly in northern and central Australia, many Aboriginal people continue to practice their traditional ways of life if and where they can.
- The National Greenhouse Gas Inventory (NGGI) has estimated that land use change (and forestry activities) are still responsible for the net emission of approximately 130 Mt of greenhouse gases (CO₂ equivalent - National Greenhouse Gas Inventory Committee 1996). This is about 23 per cent of total emissions. Broadacre native vegetation clearing is thought to be the chief contributor to this total, with clearing rates of up to 660,000 hectare/annum contributing as much as 160 Mt of emissions. (The NGGI stresses that there is a great deal of uncertainty attached to estimates of broadacre clearing in Australia and therefore of emissions associated with that clearing. Notwithstanding this uncertainty, however, even if current estimates overstated the extent of clearing by five times, the extent of clearing in Australia would still be very substantial - higher certainly than the level of vegetation clearing in any other industrialised country.)

Affects on future productivity also have to be considered as an economic externality in this respect. Where current land use is leading to declining soil productivity over time, it cannot be claimed that the full cost of this degradation will always be internalised by the current generation of farmers. Indeed, as is the case in some areas, it may take one or more generations for the trends in land degradation to become obvious to any extent.

Irrespective of this, there are intractable difficulties in quantifying such costs for future generations as the cost may be borne to an increasing extent by each successive generation. Certainly there is no way that a conventional cost-benefit approach can be useful here, as the application of any discount rate above zero will involve a very limited timeframe. In other words, as a measurement of inter-generational equity, discounted present value analyses are of no use whatsoever.

Reduced Utility and Cultural Values Associated with Natural Values, but which are Difficult or Impossible to Quantify

The various forms of ecosystem and environmental degradation which are caused (or part-caused) by agriculture cause a decline in various utility and cultural values; values which are not generally manifested in terms of a market transaction, but values which exist nonetheless.

These values include “intrinsic” values such as aesthetic values, heritage values, “spiritual” values, wilderness values, instinctive response (eg. to a shady spot by a river), and lifestyle values. More utilitarian values associated with biodiversity may include scenic quality, naturalness, existence values, option values, vicarious use values, and bequest values.

While many attempts have been made (using various methods) to quantify these values in economic terms, most methods are contentious, and in some instances (at least), the dollar values identified are difficult to subject to any test of falsification (or verification). Nonetheless it is not logical to assert that these values do not exist – they do.

To the extent to which natural environmental values can be expressed in economic terms, it must be acknowledged that most people know virtually nothing of Australia’s biodiversity, and its ecological, geophysical and climatic history and processes. So the knowledge required for informed debate on environmental management is in itself a *very* scarce commodity; an inescapable fact which makes any consideration of the economic value of nature extremely problematic.

Fundamental to economics is the anthropocentric values which underpin things like wants, needs, likes, dislikes, and time preferences. Without anthropocentric values, economics would be a meaningless concept. In economic terms, ecologically sustainable development can probably be summarised as ‘non-declining utility’. So irrespective of the extent to which non-market values can be expressed in economic terms, these values cannot be ignored, discounted, or neglected simply because of difficulties in measurement.

Strategic Planning: Setting Meaningful – and Measurable – Goals, Objectives and Targets

A key component of policy in ecologically sustainable land use is to have a strategic planning process that provides

- clear goals, objectives, targets
- performance indicators and measurement
- a means of co-ordinating responsibilities and ensuring quality feedback
- evaluation and review

We assert that no meaningful strategic framework currently exists, either in government or in Australia’s various farming sectors. And while it is difficult to contemplate a transition to ecologically sustainable agriculture in the absence of a strategic framework, a number of factors need to be taken into account.

Setting Goals, Objectives and Targets

When we talk of Landcare or the Natural Heritage Trust, there is still no sense of any real objective at the end of the day. We are concerned that these packages comprise a range of political or organisational objectives which have been constructed largely as a response to political pressures and opportunities, rather than as a package prepared to resource a comprehensive strategy for ecologically sustainable agriculture.

Typically, a package such as the NHT is conceived as part of the political process, with politicians (understandably) balancing political opportunism with advice from a range of sources on what the environmental, land management and industry 'assistance' priorities actually are.

Once the overall components of a package such as NHT have been developed, responsibilities for deciding priorities in expenditure are, to an increasing extent, being determined by regional and state-based committees which purport to be representative of the wider community. In some states (eg. Vic & NSW), these structures are enshrined in legislation, and in Victoria at least, the Catchment and Land Protection Act actually prescribes that the majority of members must be farmers and/or irrigators.

These 'community-based' structures apply their own views, values and knowledge to the development and prioritisation of bids for government funding.

In ACF's observation of these processes to date, these bids strongly favour on-farm initiatives aimed at productivity improvements and mitigation of forms of land degradation which impacts directly on agricultural productivity. Generally speaking, very few resources are ever allocated to initiatives aimed primarily at biodiversity conservation. Similarly, virtually no work is being done on inter-generational trends and risks and how these should be responded to.

To summarise, many such public funds are allocated primarily towards the protection of farm productivity from the (mainly short-term) effects of land and water resource degradation. The emphasis is on *sustaining production*, as distinct from *ecologically sustainable land use and management*. A broad strategic framework to address ecological sustainability is comprehensively absent.

ACF has explored this question in a number of areas. One of these is **dryland salinity** where the distinction between production subsidies and environmental rehabilitation is particularly blurred and problematic.

The four state governments in the Murray Darling Basin all manage initiatives which incorporate dryland salinity objectives to a greater or lesser extent, as does Federal Government through the National Landcare Program and the NHT. Often these programs are incorporated into broader land and catchment management programs. The Commonwealth Department of Primary Industries and Energy, together with various state government departments (agriculture, conservation and land management), are generally involved in administering these programs, sometimes incorporating the advice of community-based committees. Many other agencies are also involved in salinity planning and management to some extent, including the CSIRO, the Murray Darling Basin Commission, organisations such as the Land and Water Resources Research and Development Corporation, some state water agencies, and the tertiary research sector. With a handful of exceptions, involvement of local government in dryland salinity is negligible.

For a variety of reasons there are currently few mechanisms or measures in place to assess the efficacy of dryland salinity and related expenditure. To be blunt, this overwhelming lack of financial accountability and performance reporting would not be tolerated in other areas of government expenditure.

At the same time, explicit objectives against which performance can be measured are often lacking. While the various salinity programs operating in the Murray Darling Basin are obviously intended to address rising groundwater levels, secondary salinity and in-stream salt levels, clear objectives, targets and performance indicators related to these intentions are seriously lacking. This is further compounded by the difficulties inherent in measuring progress when the benefits of effective programs can take some years to become apparent.

In our assessment the precise objectives of salinity and related programs remain vague and unclear, and open to considerable debate. A number of important policy questions have yet to be clearly answered. For example:

- How are the various manifestations of dryland salinity weighted for policy purposes? (eg. the on-going viability of farmland which is susceptible to secondary salting; management of in-stream salt levels; reduction of recharge; education and extension; etc.)
- Is salinity regarded as a permanent reality to which farmers must be encouraged to adapt while still maintaining or improving productivity levels?
- In terms of arresting or reversing dryland salinity trends, what are the specific objectives and targets?
- Are the above questions mutually exclusive, or does the pursuit of one objective (i.e. protecting farmland) come at the expense of another (in-stream salinity levels)?
- In terms of in-stream salinity, is the objective simply to defer impending disaster for as long as possible, or to avoid it altogether?

- Should salinity programs incorporate subsidies towards improved farm productivity?
- Why, to what extent, and under what circumstances, should salinity subsidies generate a positive real rate of return for (a) the landholder, and (b) the economy as a whole? Given the enormous size of economic externalities, to what extent should externalities be factored into cost benefit analyses?
- To what extent, and why, do salinity programs focus on economic outcomes, rather than on social and environmental outcomes? Comments by the Victorian Auditor General are relevant here:
“Mechanisms to place values on social and environmental factors need to be developed by government to ensure that decisions which are made in the future canvass other than economic considerations.”
 Special Report No 19, Victorian Auditor-General’s Office, March 1993, p8
- How, specifically, are economic, social and environmental outcomes to be balanced? While some forms of ‘multi-criteria’ analysis are now in use, their subjectivity means that their practical value can vary enormously.
- Why are politically difficult options (e.g. regulation of land use and diffuse-source runoff; land retirement; etc) generally excluded from serious policy debate?
- Should innovation and experimentation in farm management be more actively encouraged?

For all of the work that has been undertaken on salinity over many years, the position of governments on these and other questions remains unclear. This lack of clarity is further complicated by the fact that it is difficult to separate salinity objectives from other objectives. As awareness of the connections between different forms of land degradation has grown, many land and catchment management programs have come to incorporate salinity management. For example, tree-planting is now undertaken for a multiplicity of reasons, including erosion control, recharge control, groundwater interception, nature conservation, water quality protection, windbreaks and shelter for stock and crops, landscape and aesthetic purposes, commercial timber and firewood production, and disposal of sewage effluent.

The development of integrated catchment management strategies incorporates an even wider range of objectives, including the control of vegetation clearance, public awareness, environmental flow regimes and freshwater ecology. Notwithstanding the need to integrate these different objectives, there remains a clear need to evaluate performance against them all.

As with any other area of government and private sector expenditure, mechanisms are needed to provide reliable feedback on the extent to which value for money is achieved. Hence any salinity-related program should measure progress towards slowing or reversing trends in salinity, and to direct resources towards results. To date, however, there have been few detailed assessments or audits of salinity programs throughout the study region.

Inter-generational equity, the maintenance of constant natural capital, and the protection of biological diversity and ecological integrity are three principles fundamental to Ecologically Sustainable Development (ESD). However these principles are yet to be incorporated into the objectives of salinity management programs anywhere in the Murray Darling.

It is our view that these and other ESD principles should form the basic policy parameters for land and catchment programs generally. In particular:

- the overall productivity of agricultural land and freshwater resources in the region should not diminish over time, except where current productivity exceeds land capability;
- the actions of past and present farmers should not be permitted to compromise the welfare of future generations of land and water users;
- the diversity and integrity of freshwater and terrestrial ecosystems must be ensured, particularly through conservation and rehabilitation programs.

A study of other areas of agricultural policy (eg. rangelands management; irrigation salinity; acidity; erosion, drought relief) would in our view reveal similar problems to those which exist in dryland salinity.

ACF encourages the Commission to investigate these important questions of strategic directions (including the need for a better process of developing strategy for ecologically sustainable agriculture) in more detail.

Performance Indicators and Measurement

To assess and review progress towards goals and targets in any strategy it is important to be able to measure that performance.

Efforts to date in the development and application of performance indicators fall a long way short of what is required. For the most part, indicators cover things like:

- how much money has been spent in each program area
- how many hectares of improved pastures have been established
- how many people attended information sessions
- estimated on-farm productivity improvements flowing from a particular action
- number of plants planted, with information on reason for planting, species, (incl. understory species), provenance, and survival rates over time notably lacking

This approach to performance indicators is not satisfactory, and focuses on actions rather than outcomes. It suggests that the prime reason for developing them has been to improve accountability within government agencies, and to prove that grant funds have been spent. Financial accountability is of course important (ref. to 3.2, below), but is not the central issue here. The primary reason for performance indicators should surely be to measure the performance of government-funded (or co-funded) initiatives against targets and/or benchmarks.

Irrespective of their validity as indicators, indicators (such as those above) face another problem in that they invariably change from year to year. Hence performance from year to year cannot be measured, and no-one can say whether government programs are improving or not, or getting any closer to their objectives.

Measuring performance towards ecologically sustainable agriculture is a very difficult issue, and is closely dependent on available monitoring resources. For example:

- How do you measure biodiversity decline across Australia's vast farming and pastoral regions? What are the indicator species for each location? What are the causes of species and ecosystem decline in each location?
- How do you measure annual changes in groundwater recharge in salinity-prone regions, allowing for local geology and climate flux, and in a cost-effective way?
- How do you measure the relative efficacy of (for example) programs aimed at improving environmental flows, water quality and habitat for native freshwater flora and fauna?
- How do you measure the various forms of soil degradation, and what benchmarks are appropriate for each area?
- How do you quantify market and non-market externalities, particularly in assessing the relative priority to be assigned to different projects?

Much effort is needed to develop cost-effective performance indicators which measure actual performance relative to objectives and targets. Perhaps more significantly, much effort is required to develop the information systems required to make meaningful assessments against performance indicators.

State of the Environment reporting is something which is in a fairly developmental stage. State of the Environment Reporting is no doubt a comprehensive and reasonably accurate document, but SOE processes generally a number of critical deficiencies which seriously limit their usefulness:

- SOE processes invariably rely on very scant (or low-resolution) data, much of which suffers from significant gaps
- SOE programs are generally hamstrung by resource deficiencies
- SOE studies lack useful baseline data
- SOE studies are often once-only 'snapshots' which fail to monitor changes in key environmental indicators over time
- sometimes there is an ad-hoc approach to selecting environmental indicators
- there are serious limitations on the capacity to draw firm conclusions
- the public has a very limited capacity to access information of any practical relevance to their region
- SOE studies make insufficient use of GIS for data processing, compilation and presentation

- SOE processes fail to transfer information to those who could best make use of it
- SOE agencies are largely unaccountable to the public for the quality or usefulness of the information they produce. Community-based networks and public GIS systems would force SOE agencies to be both more accurate and more comprehensive in the information they produce.
- the scale of SOE reports is often irrelevant or unworkable for detailed regional planning and implementation

It is worth noting that SOE in some form has now become a legislated responsibility of local government in NSW, and to some extent of Catchment and Land Protection Boards in Victoria. The danger is, however, that the conventional “essay-writing” approach to SOE will continue, providing a largely subjective interpretation of scattered data which is incapable of measuring performance and trends over time.

If SOE is to be of any practical use in land and environmental management, it must develop additional characteristics required by land and environment managers. These include:

- different layers of resolution, where local data on a wide range of indicators is collected and collated for interpretation at the property, local, bio-regional and national level
- widespread and co-ordinated community involvement in some areas of data collection at least, provided that sufficient resources are provided to facilitate and co-ordinate this input
- increased effort at collection of environmental data by governments (ie. data which is difficult for the community to collect, or which requires high skill levels in collection and interpretation)
- unrestricted public access to SOE information databases

The integration of effective community-based monitoring programs may well prove essential to the success of more useful and useable SOE and performance monitoring programs.

At present, however, and until a comprehensive information base is put together and maintained, useful performance indicators and monitoring capacity remain little more than a concept. Furthermore, government assistance programs, most of which are loosely referred to as *environmental programs*, remain almost totally unaccountable.

Allocating Costs and Benefits – Transparency, Accountability and Co-ordination in Government

Funding under various programs (particularly ‘environmental’ programs), and arrangements for collecting and distributing revenue, are critical the success (or failure) of government policy in working towards ecologically sustainable agriculture.

Many issues are worthy of very detailed discussion here, and many questions need to be answered in detail. In particular:

- how does one justify the varying (and variable) levels of funding for different priorities in land and environmental management
- whether or not, or to what extent, public funds should be used to produce a private gain?
- whether, and to what extent, ‘polluters’ (ie. those who cause or contribute to an environmental problem) should pay, and how does one attribute cause and affect in any case?
- whether, and to what extent, ‘beneficiaries’ (ie. those who benefit from the expenditure) should pay, and who constitutes a beneficiary in any case
- how are priorities in expenditure determined, and what is an acceptable methodology for assigning values, priorities and for making meaningful comparisons between priorities?
- who should pay, and how should they pay?

These questions are central to public accountability and transparency in government policy and administration of funds. However, time constraints prevent them from being addressed in sufficient detail in this submission.

By way of example, the issue of drought relief to farmers is relevant here. Given that Australian farmers operate in a drought-prone environment, why should the government provide drought relief? In many ways, drought can be seen as a normal risk of production, and should be addressed via normal insurance avenues, or perhaps through an income

equalisation bond system. Ad-hoc and politically motivated payouts in response to natural climatic variability is not helpful in ensuring that Australian agriculture is robust enough to cope with reality.

Similarly, irrigation security is an issue of great concern to many irrigators (particularly for horticulturalists operating with permanent plantings, or graziers with permanent pastures), and hence water agencies find themselves under enormous pressure to deliver water to very high levels of security (particularly in Victoria and SA), at the expense of the environmental needs of rivers and associated ecosystems. While considerable public investment has been sunk into river regulatory structures which improve water supply security, it must also be recognised that, in Australian floodplain river systems, flow variability is literally essential to healthy ecosystem functioning. Improved security of supply to irrigators would require an even greater departure from natural river flow variability. However, other forms of investment security do exist, and include:

- insurance policies (as, for example, hail damage insurance is currently used)
- investing in water futures (ie. purchasing an option on next year's water under temporary markets)
- purchasing additional high security entitlements.

As water markets mature, these options will become more widely available, but in some areas the efforts of water agencies and governments to maximise security (sometimes with disregard for environmental needs) are probably undermining these options, and possibly constitute unfair competition.

ACF is concerned that a significant (or major) proportion of public environmental funds are spent on matters which have little or no importance or relevance for the environment. Rather, (and as alluded to above), the objective of many of these funding programs is evidently to finance works or productivity improvements which help to sustain existing farming operations. (Note again here that sustaining existing forms of production does not equate with ecological sustainability.) In a very real way, environmental funds are being used as production subsidies.

Examples here include:

- pasture improvement subsidies (ostensibly for dryland salinity control)
- irrigation drainage subsidies (refer to ACF for more detailed information)
- farm forestry subsidies (here, subsidies are provided to assist farm forestry ventures in competing against subsidised hardwood production from native forests; a case of throwing good money after bad!)

Less clear-cut examples involve the provision of environmental subsidies (for example, erosion control, fencing remnant vegetation, weed control, feral animal control, etc.) where funding agencies have not considered the application of the "polluter pays" principle.

In a discussion paper on water pricing prepared by the NSW Independent Pricing and Regulatory Tribunal, the following principle is recommended that "*consideration should be given to 'polluter pays' before 'beneficiary pays', indicating that those responsible for activities which cause measurable impacts on the resource should be required to pay for the remediation of those impacts*". (p. 76) The Tribunal also recommended that "*where the source of pollution is diffuse and direct attribution to any group is not feasible, a beneficiary pays approach should be used*". The problem is hence one of attributing cause and effect, and even if this approach were taken (which should be the case in our view), there is a considerable danger of it being only very loosely interpreted. Certainly it is easier to assume that polluters cannot be identified, and therefore incur the cost in question on the wider community.

Sensitivity to criticism about the fairness and accountability in some "environmental" programs has led some governments (esp. Victoria) are developing systems of "**multi-criteria analysis**" in an effort to either improve the objectivity of decision-making in allocating funds based on social, economic and environmental criteria, although a cynic could regard it as an effort to better justify existing funding priorities via a complex and largely subjective set of funding criteria and evaluation procedures.

Economic assessment under multi-criteria analysis can be seriously flawed. For example, what would a Catchment Management Committee (CMC) comprising mainly farmers know about tourism or fishing values? Or, how can a CMC assess off-site costs of salinity? What mechanisms are proposed to ensure that the economic assessments involve some degree of rigour? How much weight should be given to economic or productivity improvements as against other perceived benefits? How are *net* benefits assessed? Some important economic considerations (eg. the current or potential tourism value of parks, reserves, rivers, etc) could well be seriously underestimated.

It must also be noted that economic values can only be considered over a timeframe, and must involve the use of a discount rate. Selection of a discount rate, particularly when considering longer-term impacts, is highly problematic.

While social impact is important, ACF perceives many problems in incorporating social priorities (such as regional viability and employment), which go well beyond just local and regional considerations. There are statewide, interstate, national and even international considerations also (eg. Adelaide's water quality). Secondly, the maintenance of a particular industry (eg. dryland sheep grazing in high recharge, high salinity areas) may not be a rational objective, even though it may be "socially desirable" in the view of local people, and it may be appropriate to look at reforming, changing or even dismantling a particular industry when one looks at the total picture. In any case, accounting for employment losses/gains under social criteria represents a serious case of double counting if economic costs/benefits are also counted.

Given these problems, the incorporation of environmental criteria is even more problematic, and suggests that biodiversity conservation priorities are unlikely to be addressed via a multi-criteria analysis unless they have some social or economic benefits. Certainly existing methods for prioritising biodiversity conservation priorities are highly deficient in any case.

Methods of assigning priorities must continue to be refined. However, unless work on land and environmental monitoring and performance indicators is significantly advanced,

Funding methods, and methods of assigning costs and benefits, are literally in their infancy. Issues here include:

- funding from general state and commonwealth government sources, and what these funds should – and shouldn't – be used for
- catchment-based rates on property owners, the basis for such rating (flat rate or property value?), and what these funds should – and shouldn't – be used for
- the use of local government funds and rating powers, and instruments such as rate relief for management and covenanting of areas of private land with high natural values
- measures to ensure certain minimum contributions from landholders in proportion to grant funds
- cost recovery by state government agencies

Discussion of Policy Instruments (Legislation, Community Participation, Property Rights, & Land-Use Planning)

To date the major focus of the Commonwealth environmental policy and programs has been on two major policy instruments:

- funding programs; and
- achieving results through "volunteerism"; a culture of providing funds to those willing to undertake the required work (usually for nothing).

ACF believes these to be inadequate. **Firstly**, these instruments do not in any way guarantee that strategic environmental and NRM priorities are being addressed. **Secondly**, the culture of volunteerism (as demonstrated in Landcare movement, for example), is wearing very thin, and in many regions is in danger of collapsing. **Thirdly**, there is nothing inherent in these approaches which is more effective (or less effective) than other policy instruments, other than they may be less politically controversial. **Finally**, opportunities to optimise environmental outcomes by a more considered mix of policy instruments are being missed.

Other policy instruments *do exist*, all of which have been used to a greater or lesser extent, and with varying levels of success in meeting a mixed range of objectives.

It is not unreasonable too assert that, in developing a strategy for ecologically sustainable land use, the full range of policy instruments involved (including funding) should be canvassed, and the most effective and efficient mix of policy instruments should be put in place and reviewed periodically. For the most part, however, the development and application of these instruments is extremely piecemeal, ad-hoc and un-coordinated, and their full potential is far from being realised.

Discussion of policy instruments that focusses on land and water resource issues, but the principles involved may apply equally to other sectors.

Legislation

Currently legislation pertaining to agriculture (or potentially pertaining to agriculture) is very diverse, embracing things like:

- pastoral leases
- water quality-related environmental protection standards (EPA)
- soil conservation
- weeds and pest animals
- taxation
- water resources and river management
- commodity marketing boards (eg. Meat & Livestock Corporation)
- research and development
- local government planning and rating powers
- catchment management committees

In the time available it is difficult to present a considered and comprehensive view on these issues. Note however, that ACFs assessment of the NZ Resource Management Act (albeit a little out-of date) is attached. We believe that the NZ approach, involving the amalgamation of many pieces of legislation into one act, together with a major restructuring of different layers of government, and a policy (rather than procedurally) driven approach, represents a valuable model for Australia.

ACF urges the Commission to consider a comprehensive review of Commonwealth legislation as part of this Inquiry.

Community Participation

Community participation is a rapidly evolving phenomenon in agricultural land and resource use, and is becoming increasingly formalised via legislation and funding approval status. Community participation is also a critical consideration in a move towards ecological sustainability. Existing models of community participation, together with the legislation, funding programs and support mechanisms (at the state government level) which effective community participation requires, is an important issue for this Inquiry to address.

ACF maintains some serious concerns about these structures and processes. In a nutshell, these *generalised* concerns include:

- lack of accountability and transparency in decision-making
- lack of ecological expertise, a lack of general scientific and economic expertise, and a bias towards expertise towards farm management and land degradation
- bias in membership towards landholders and water users, sometimes prescribed in legislation, and leading to (a potential for) conflicts of interests
- lack of resources, both in terms of information and monitoring resources, and in terms of funds required to implement catchment management strategies
- a bias in CM strategies against funding for biodiversity conservation initiatives, and towards land-based on-farm works
- CMCs have a regional focus, whereas some environmental, resource management and land management issues must be addressed on a much broader scale (eg. river management in the Murray Darling Basin)

Resource Access and Use Rights & Other Market Mechanisms (eg. tradeable permits)

Access and use rights in land and natural resources are major concerns for ACF.

Water access and use rights are discussed in the attached submissions to the NSW Independent Pricing and Regulatory Tribunal.

As alluded to previously, ACF is also concerned about the potential for upgrading tenure of pastoral leases, and considers that the proposed 10 point plan in response to the Wik case would be most inconsistent with the principles of ecological sustainability. Specifically, we are concerned that upgrading pastoral leasehold tenure will:

- enable unsustainable land uses such as broad-scale land clearing, intensive irrigated agriculture, native forest logging and unregulated tourism on an as-of-right basis
- curtail existing controls on land use and management (*such as tree clearing controls in Queensland, which presently only apply to leasehold and not to freehold land*)
- pre-empt and prevent the development of a comprehensive and adequate national reserve system (*as is promised in Federal Government policy*)
- remove Government controls on unsustainable land use, such as periodic review and lease renewal, which currently provide mechanisms to promote ecologically sustainable land management on leasehold pastoral lands
- introduce impediments to the success of regional environmental strategies funded by the Commonwealth Government's National Heritage Trust
- enable non-pastoral land uses to occur throughout the rangelands, thereby introducing new kinds and levels of threats to the ecological integrity and biological diversity of the rangelands
- "reward" leaseholders with freehold title regardless of their previous and current performance in resource management
- reduce flexibility of decision-making in the event of climate change, and further declines in biodiversity
- reduce public access to information about environmental values and the conservation status of land converted to freehold, and increase the occurrence of land speculation
- remove the capacity of governments to act in the public interest by adjusting stocking rates, setting logging rates, requiring land rehabilitation, and re-establishing or conserving wildlife corridors and riparian vegetation
- provide a huge windfall gain for pastoralists in the form of increased security of tenure
- creating a negative financial impact on public expenditure due to the higher costs of achieving conservation outcomes from freehold land
- require massive taxpayer-funded payments to compensate for the extinguishment of native title
- ensure a sub-optimal use of rangelands by granting unrestricted land uses to a minority of the population on a majority of public lands

Land Use Planning

Land use planning controls have, historically, been only minimally applied to agricultural lands. Major issues here include:

- encroachment of low-density rural residential and "hobby farm" developments into prime agricultural lands, principally through lax and inconsistent subdivision controls, or through a lack of attempts to protect prime lands by directing subdivisions to lesser quality lands.
- lack of requirements for planning permit approvals involving changed (particularly intensive) forms of land use, non-agricultural ventures, and developments which are likely to have an adverse impact on surface and groundwater quality
- lack of requirements to implement remedial works as required (eg. erosion control generally; river frontage fencing, revegetation and erosion control)
- a lack of (or inconsistencies in) controls over the construction and maintenance water infrastructure (eg. dams and retarding basins), drain construction, and levee bank construction), particularly where:
 - dam construction results in reduced water availability in over-stressed river systems (such as the Murray Darling), without allocation of formal water entitlements
 - levee construction prevents flooding in key floodplains and wetlands, and in the process, increases flooding impacts elsewhere and contributes to increased channel erosion
 - drainage of wetlands results in significant loss of wetland habitat, noting also that wetlands generally are now poorly represented in agricultural regions
 - plantations result in reduced surface runoff or reduced groundwater recharge where water resources are already

over-stressed

- drain construction which (i) exacerbates, or alternatively denies, surface water flows on other properties, or which (ii) increases movement of salt, nutrients and/or sediments into rivers and streams
- a lack of conservation protection provisions in planning schemes and zones to protect identified areas of private land with high conservation values, and a corresponding lack of rate relief for covenanted land with high conservation values.

Industry Codes of Practice/Certification Requirements

Adoption of industry codes of practice, or of industry standards, together with independent auditing and certification processes, is one area with considerable potential for advancement if the Commonwealth were to take the lead.

Agriculture is one industry where such standards are virtually non-existent, with only very few sectors (eg. cotton) making advances down this path. However, as is acknowledged in the Draft Report of the Industry Commission's Inquiry into Ecologically Sustainable Land Management, it is one with considerable potential.

Funding Cross Compliance mechanisms

Commonwealth funds for environmental purposes are currently allocated to States with little or no regard for the actual performance by the States in the areas concerned.

For example, considerable sums of NHT funds relating to revegetation and vegetation management are being allocated to (for example) Queensland with no regard for the very high rates of vegetation clearance in that State. In essence, this not only represents a failure in the funding mechanism towards achieving environmental outcomes, but a missed opportunity to encourage improved performance on vegetation clearance and management.

While the Commonwealth seems quite prepared to enforce policy compliance in some other areas (eg. National Competition Policy and the related payments schedule), it has so far resisted attempts at introducing cross-compliance in environmental funding.

Appendix 8

AUSTRALIAN ENVIRONMENT GROUPS PRINCIPLES OF ECOLOGICALLY SUSTAINABLE DEVELOPMENT

Inter-generational equity

The present generation should ensure that the next generation is left with an environment that is at least as healthy, diverse and productive as the one the present generation experiences. Owing to the massive and irreversible rate of loss of species and habitats at present, we have an additional responsibility to give the highest priority to conserving the world's natural environment and species.

Conservation of biodiversity and ecological integrity

Conservation of biodiversity and the protection of ecological integrity should be a fundamental constraint on all economic activity. The non-evolutionary loss of species and genetic diversity needs to be halted and the future of evolutionary processes secured.

Constant natural capital and 'sustainable income'

Natural capital i.e. biological diversity, healthy environments, freshwater supplies, productive soils must be maintained or enhanced from one generation to the next. Only that income which can be sustained indefinitely, taking account of the biodiversity conservation principle, should be taken.

Anticipatory and precautionary policy approach

Policy decisions should err on the side of caution, placing the burden of proof on technological and industrial developments to demonstrate that they are ecologically sustainable.

Social equity

Social equity must be a key principle to be applied in developing economic and social policies as part of an ecologically sustainable society.

Limits on natural resource use

The scale and throughput of material resources will need to be limited by the capacity of the environment to both supply renewable resources and assimilate wastes.

Qualitative development

Increases in the qualitative dimension of human welfare and not the quantitative growth in resource throughput is a key objective.

Pricing environmental values and natural resources

Prices for natural resources should be set to recover the full social and environmental costs of their use and extraction. Many environmental values cannot be priced in monetary terms and hence pricing policies will form part of a broader framework of decision making.

Global perspective

A global perspective is needed to ensure that Australia does not simply move its environmental problems elsewhere.

Efficiency

Efficiency of resource use must become a major objective in economic policy.

Resilience

Economic policy needs to focus on developing a resilience to external economic or ecological shocks. A resource-driven economy is unlikely to be resilient.

External balance

Australia's economy needs to be brought into balance. External imbalance creates pressure to deplete natural capital and could undermine the prospect for an ecologically sustainable economy.

Community participation

Strong community participation will be a vital pre-requisite for effecting a smooth transition to an ecologically sustainable society.

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