
The Parliament of the Commonwealth of Australia

Co-ordinating Catchment Management

Report of the Inquiry into Catchment Management

**House of Representatives
Standing Committee on Environment and Heritage**

December, 2000
Canberra

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ISBN [Click **here** and type ISBN Number]

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Foreword

Evidence emerges on an almost daily basis that the environmental health of catchments is not what it should be. It has recently been reported that 5.7 million ha of farmland is at risk of being salt ravaged. In addition, 20,000 km of main roads and 1600 km of railway are also at risk from salinity.

Unless we act swiftly and decisively to protect our waterways and soils, the future prosperity and quality of life for all Australians will be diminished.

Catchment degradation affects all Australians, urban and rural alike. Consequently, grappling with this threat is not the monopoly of anyone community group. It is a national challenge; it is an individual responsibility that addresses itself to all Australians.

As a nation, we have already laid a strong foundation, at the Commonwealth, state, local government, and community levels to address environmental problems. The Landcare movement is a case in point and demonstrates the practical and enormous amount of good work that can be achieved. As the growing body of evidence demonstrates, however, much more needs to be done, and more quickly.

Unfortunately, the work of communities as well as policy makers and legislators has often been piecemeal and poorly integrated, within jurisdictions and between communities. Our future efforts must be more coordinated; they must be sustained; and they must be based on solid information and sound planning. And they must be adequately financed.

This report examines and recommends feasible proposals that, when implemented, will deliver decisive results, across the nation.

The Committee, unanimously, recommends three major innovations:

- an assessment of the feasibility of an environment levy to pay for the public contribution to implementing the policy of ecologically sustainable use of Australia's catchments;
- a national catchment management authority to ensure that the many programs are coordinated, funded and appropriate to the problem at hand; and
- national catchment management coordinating principles, targets, and legislation.

A report such as this relies upon the voluntary efforts of many people. They give freely of their time and expertise in order that the Committee, and ultimately the Parliament and the community, can be informed and make better decisions. On behalf of the Committee, I wish to thank all those people who assisted the Committee in its work. Without their help, the work of Parliamentary committees would be much harder and the results less certain.

I wish also to thank my fellow Committee members. Their dedication to the important matters addressed in this inquiry is reflected clearly in the report.

While much remains to be done in research and in the field, I am sure the recommendations in this report will go a long way to strengthening still further the solid foundations we have put in place to address catchment management problems.

The Hon. Ian Causley MP
Chair



Membership of the Committee

Chair Hon I R Causley, MP

Deputy Chair Mr A M Byrne (from 1/6/2000)
Mrs J Irwin, MP (to 1/6/2000)

Members Mr P A Barresi, MP

Mr K J Bartlett, MP

Mr B F Billson, MP

Ms A K Corcoran, MP
(from 27/11/2000)

Mrs C A Gallus, MP

Ms J Gerick, MP

Mr H A Jenkins, MP

Hon Dr C M Lawrence, MP
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Terms of reference

The House of Representatives Standing Committee on Environment and Heritage undertook a review of the 1997-98 annual report of the Department of the Environment and Heritage, and tabled a report on its review on 21 June 1999. This review was carried out under the provisions of House of Representatives Standing Order 324 (b).

The management of Australia's water resources, particularly regarding the health of urban and rural waterways and water quality standards, was outlined in the annual report and identified by the committee in its review as a topic warranting further examination. On 2 June 1999 the committee resolved to continue its investigation of water resource issues through an inquiry into catchment management, with particular attention to the following matters:

- the development of catchment management in Australia;
- the value of a catchment approach to the management of the environment;
- best practice methods of preventing, halting and reversing environmental degradation in catchments, and achieving environmental sustainability;
- the role of different levels of government, the private sector and the community in the management of catchment areas;
- planning, resourcing, implementation, coordination and cooperation in catchment management; and
- mechanisms for monitoring, evaluating and reporting on catchment management programs, including the use of these reports for state of the environment reporting, and opportunities for review and improvement.



List of abbreviations

ABS	Australian Bureau of Statistics
ACF	Australian Conservation Foundation
AFFA	Agriculture, Fisheries and Forestry Australia
ASS	Acid Sulfate Soils
CALP	Catchment and Land Protection Board
CMA	Catchment Management Authority
CMB	Catchment Management Board
CoAG	Council of Australian Governments
CRP	Conservation Reserve Program
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CWMB	Catchment Water Management Boards
CWMP	Catchment Water Management Plans
DPIWE	Department of Primary Industries, Water and the Environment
EA	Environment Australia
EBI	Environmental Benefits Index
ECITA	Senate Environment, Communications, Information Technology and the Arts References Committee

EPBC	Environment Protection and Biodiversity Conservation Act
GBCMA	Goulburn Broken Catchment Management Authority
GIS	Geographic Information Systems
HRIC	Herbert Resource Information Centre
IBRA	Interim Biogeographic Regionalisation for Australia
ICM	Integrated Catchment Management
LWMP	Local Water Management Plan
LWRRDC	Land and Water Resources Research and Development Corporation
MDBC	Murray Darling Basin Commission
NCMA	National Catchment Management Authority
NFF	National Farmers' Federation
NGO	Non-government organisation
NHT	Natural Heritage Trust
NLWRA	National Land and Water Resources Audit
RCSs	Regional Catchment Strategies
SCA	Sydney Catchment Authority
SCMCC	State Catchment Management Co-ordinating Committee
SWP	State Water Plan
TCM	Total Catchment Management
TFN	Trust for Nature
TLWMC	Tasmanian Land and Water Management Council
UBLN	Upper Barwon Landcare Network
USDA	United States Department of Agriculture



List of recommendations

Improved Administration

Recommendation 1

The Committee recommends that the Commonwealth adopt a lead role in terms of:

- facilitating the development of principles, priorities targets and programs for the ecologically sustainable use of Australia's catchment systems;
- implementing appropriate legislative and institutional arrangements to attain the ecologically sustainable use of Australia's catchment systems; and
- obtaining from the community the funding necessary to ensure that the problems facing Australia's catchment systems are addressed.

Recommendation 2

The Committee recommends that the Government ask and resource the Australian Law Reform Commission to examine the feasibility of, and options for, a national body of law to deal with the ecologically sustainable use of land, and in particular, report on feasibility of, and options for:

- consolidating Commonwealth laws;
- consolidating State and Territory laws; and
- integrating laws at all levels

into a consistent body so as to provide for the ecologically sustainable use of Australia's catchment systems.

Recommendation 3

The Committee recommends that the Government work towards an agreement through COAG that requires each jurisdiction to enact complementary legislation to establish an independent statutory authority, the National Catchment Management Authority (NCMA). This authority should have a division corresponding to each of Australia's catchment systems and it should have the following powers and functions:

- to accredit and assist in the development of whole of catchment, regional and local catchment management plans;
- to co-ordinate the ecologically sustainable use of Australia's catchment systems;
- to fund research on the ecologically sustainable use of Australia's catchment systems;
- to apply the findings of that research to the development of the ecologically sustainable use of Australia's catchment systems;
- to facilitate the dissemination of information and access to skills, data and educational programs for the ecologically sustainable use of Australia's catchment systems;
- to monitor the implementation of whole of catchment management plans; and
- with the support and the states and territories, ensure compliance with nationally mandated principles and targets and whole of catchment plans for the ecologically sustainable use of Australia's catchment systems.

Recommendation 4

The Committee recommends that:

- if the report of the Australian Law Reform Commission referred to in recommendation 3 reports that it is feasible for the Commonwealth to enact a single piece of legislation;
- if agreement can be reached through COAG for such legislation; and
- then such legislation be enacted to apply to all aspects of the ecologically sustainable use of Australia's catchment systems that are within the jurisdiction of the Commonwealth.

Recommendation 5

The Committee recommends that, in consultation with stakeholders, national catchment management principles be developed and enacted in comprehensive, national catchment management legislation. The Committee further recommends that:

- these principles should be enacted no later than the end of 2002; and
- all programs in Australia that have an effect upon the use of catchment systems should, no later than 2005, be assessed against these principles and by 2007, modified if necessary, to ensure that they comply with them.

Recommendation 6

The Committee recommends that:

- the Government work through COAG to set targets for the ecologically sustainable use of Australia's catchment systems under the national catchment management legislation as soon as possible;
- these targets be mandatory, reviewable and disallowable instruments;
- funding be dependent upon partner organisations accepting and aiming for these targets; and
- the Government, in conjunction with the states and territories, conduct a stocktake of current data, and the usefulness of that data when determining national targets.

Recommendation 7

The Committee recommends that the Government ask and resource the ALRC to report on options for resolving in a cost effective and speedy manner cross-jurisdictional environmental disputes.

Recommendation 8

The Committee recommends that the National Land and Water Resources Audit be formally established as an ongoing independent statutory Commonwealth authority called the National Environment Audit Office, with the:

- power to collect relevant data and maintain an ongoing audit of the state of Australia's catchment systems; and
- purpose of educating the community on the need for, and effective measures to attain, the ecologically sustainable use of Australia's catchment systems.

Recommendation 9

The Committee further recommends that the NLWRA should be provided with sufficient funding to enable it to complete within the next five years a comprehensive audit of Australia's catchment systems and sufficient ongoing funding thereafter to enable it to maintain an ongoing audit of Australia's catchment systems and the policies and programs designed to ensure the ecologically sustainable use of Australia's catchment systems.

The Committee further recommends that funding for the Audit should not come from the Natural Heritage Trust or from asset sales but from general taxation revenues and that any products of the Audit should be made available free of charge.

Recommendation 10

The Committee recommends that the Government enter into negotiations with all state and territory governments to establish clear protocols for the exchange of information concerning the ecologically sustainable use of Australia's catchment systems and that:

- funding to the states and territories be dependent, in part, upon entering into information sharing protocols;
- this information be collected and maintained on a national basis, in a national database maintained by the NLRWA; and
- this information be freely, publicly available through catchment area district offices and over the internet.

Recommendation 11

The Committee recommends that the Government develop and implement an education strategy, including appropriate on ground activities, on the ecologically sustainable use of Australia's catchment systems.

Recommendation 12

The Committee recommends that the government work through COAG to create in legislation, catchment management authorities (CMAs) and that these authorities form the basic administrative element of each catchment system and, overall, of the national catchment management authority.

Recommendation 13

The Committee recommends that all programs that affect the ecologically sustainable use of a catchment area, region or system, be accredited by

the proposed NCMA (or local CMA), or its equivalent, and that funding be provided only to accredited programs.

Recommendation 14

The Committee recommends that when local government boundaries are revised they be, as far as practicable, aligned with the natural divisions within catchment systems.

Recommendation 15

The Committee further recommends that the Government work through COAG to obtain agreement from state governments that they will enact such legislation as is needed to require local governments to exercise such powers as they possess in ways that are consistent with the national principles and targets for the ecologically sustainable use of Australia's catchment systems.

Recommendation 16

The Committee recommends that:

- formal recognition be given to 'partner organisations';
- eligibility criteria for accreditation as a partner organisation, be enacted;
- that accreditation as a partner organisation be reviewable and subject to special conditions; and
- all contracts with partner organisations and between partner organisations and other suppliers or clients, be tabled within three months of signature if the contract involves the expenditure of public monies.

Recommendation 17

The Committee recommends that all programs that affect the ecologically sustainable use of a catchment area, region or system, be accredited by the proposed NCMA (or local CMA), or its equivalent, and that funding be provided only to accredited programs.

Recommendation 18

The Committee recommends that the Government develop a program to foster the development of, and access to, the internet for rural Australians and the development of information data bases pertaining to the ecologically sustainable use of Australia's catchment systems that can be accessed over the internet.

Recommendation 19

The Committee recommends that the Government expand the operation and purpose of the rural transaction centres to include, but not be limited to:

- Providing ready access to information and expertise on the ecologically sustainable use of Australia's catchment systems, and access to education and advice services;
- Acting as a shopfront for regional management authority offices; and
- A base for catchment management extension officers and program co-ordinators.

Recommendation 20

The Committee recommends that the Government, in co-operation with the states:

- establish a network of local people who can act as local area co-ordinators and catchment management extension officers who will advocate for the ecologically sustainable use of Australia's catchment systems;
- provide appropriate training to these people; and
- encourage, with the states, the re-establishment of a system of extension officers whose duty will be to facilitate the development and implementation of local catchment programs.

4

Funding and Resources

Recommendation 21

The Committee recommends that funding systems be open, understandable and accountable and that any allocations made under a system be reported in the annual report of the Department that administers the funds.

Recommendation 22

The Committee recommends that an audit of policies be conducted to identify counter-productive incentives in respect of promoting ecologically sustainable land use that are contained in Commonwealth, state and territory programs and that proposals be developed for their removal.

Recommendation 23

The Committee recommends that all Commonwealth funding for programs for ecologically sustainable land use, be aggregated and co-ordinated for performance monitoring and reporting purposes, and be aligned with national plans.

Recommendation 24

The Committee recommends that the Government develop options for increasing the taxation incentives to participate in landcare activities for landholders on low incomes.

Recommendation 25

The Committee recommends that the Government conduct a public inquiry into the disincentives for the ecologically sustainable use of Australia's landscape contained in the present taxation arrangements at all levels of government, and make recommendations for change, including costings.

Recommendation 26

The Committee recommends that the Government examine the feasibility of introducing an environment levy to pay for the public contribution to implementing the policy of the ecologically sustainable use of Australia's catchment systems.

The Committee further recommends that such a the levy:

- remain in place for no less than 25 years; and
- be clearly marked on each taxpayer's taxation assessment notice.

Introduction

- 1.1 Australia's catchment areas sustain life on this continent. They provide food and water for our communities, contribute substantially to our economy and provide the foundation for our rich and diverse natural environment.
- 1.2 Over the past decade, a compelling body of evidence has emerged that Australia's catchment systems are facing enormous and ongoing threats from human activities.¹ Unless we, as a national community, begin to address these problems, the quality of our life will be substantially eroded over the coming decades. It is not overstating the matter to say that the ecologically sustainable use of Australia's catchment systems is the most pressing contemporary public policy issue facing the community.
- 1.3 The problems affecting Australia's catchment management systems affect urban and rural Australians alike: no member of the community is exempt. Already, many agriculturalists experience the effects of land degradation. Ultimately, they will be unable to continue farming unless action is taken immediately.
- 1.4 Apart from the farming sector, rural communities are experiencing not only degraded water supplies but also rising water tables and salinity that are destroying whole towns and villages from the ground up. Expensive elements of our rural infrastructure, such as roads, are being destroyed. As Dr Wendy Craik, then executive director of the National Farmers' Federation testified: 'salinity is affecting not only the farming sector but

1 Evidence of environmental degradation due to salinity was noticed in Western Australia as far back as 1917. See P L Eberbach, 'Salt-Affected Soils: Their Cause, Management and Cost' in J Pratley and A Robertson, *Agriculture and the Environmental Imperative*, CSIRO: Collingwood, 1998, p. 79. Dr Wendy Craik, executive director, National Farmers' Federation, advised the Committee at its hearing into public good conservation, that 'salinity had been identified as a problem in 1897'; House of Representatives Standing Committee on Environment and Heritage inquiry into public good conservation, *Transcript of evidence*, p. 232.

also the whole community. You only have to drive to Cowra and bump along the road there and also look at the buildings in Wagga to see that it is a whole community problem'.²

- 1.5 These problems are not faced only by rural communities, but are now experienced by the outlying suburbs of our coastal cities and indeed the cities themselves. At the present rate of salinity increase in the Murray-Darling basin, Adelaide will not have water fit for human consumption by 2020.³
- 1.6 These are just a few well known examples. All these problems, however, impose additional and avoidable costs upon the entire community. Those costs are not only financial, such as the cost of repairing the damage or the cost of lost production, but a social cost, as our rural communities lose viability and the quality of life in our urban and rural communities is degraded.
- 1.7 It is sometimes claimed that urban Australians are not concerned about this problem. This is wrong: recent polls indicate that it is an issue that is of concern to the vast majority of Australians, no matter where they live.⁴ There is, then, no rural – urban divide, as some claim.
- 1.8 What emerged clearly from this inquiry, and what has emerged in other inquiries⁵ is the intense interest in these issues by Australians from all parts of the Commonwealth. Australians understand that the problems that the nation faces through poor catchment management encompass an inter-related set of issues that range across the spectrum of natural resource management concerns and they want ecologically sustainable use of Australia's catchment systems.

2 *Transcript of evidence*, p. 296.

3 The Hon. John Howard MP, *Our Vital Resources: National Action Plan for Salinity and Water Quality in Australia*, p. 1.

4 For example, see the Australian Conservation Foundation poll on land clearing, downloaded www.acfonline.org.au/campaigns/landclearing/briefings/Poll%20results_08_01landc.htm, accessed 10 August 2000.

5 Industry Commission, *A Full Repairing Lease: Inquiry into ecologically sustainable land management*, Canberra: Commonwealth of Australia, 1998; Agriculture, Fisheries and Forestry – Australia, *Managing Natural Resources: A discussion paper for developing a national policy*, Canberra: Commonwealth of Australia, 1999; Agriculture, Fisheries and Forestry – Australia, *Steering Committee report to Australian governments on the public response to 'Managing Natural Resources in Rural Australia for a Sustainable Future: A discussion paper for developing a national policy'*, Canberra: Commonwealth of Australia, 2000. Senate Environment, Communications, Information Technology and the Arts References Committee, *Report: Commonwealth Environment Powers*, Parliament of the Commonwealth: Canberra, 1999, p. 91.

- 1.9 The Committee does acknowledge, however, that too often in discussions of natural resource management and catchment management issues the urban – rural divide is used to justify inaction. As well, the problems facing our catchment systems are used to advance narrow sectional interests to the detriment of present and future Australians. Finally, the development of appropriate and co-ordinated solutions is hindered by a lack of reliable information being unavailable or stakeholders not being aware of factual matters.
- 1.10 The community, like the Committee, believe that the inaction, the cost-shifting, the shifting of responsibility and political opportunism has to cease.
- 1.11 The expectation within the community is that legislators will act – sooner rather than later; decisively, rather than timidly. Australians want the talking to stop and the action to begin.
- 1.12 Furthermore, they do not want a piecemeal approach, but a national approach, co-ordinated at a national level, and founded upon a national policy to which all stakeholders should subscribe and in which all Australians have the opportunity to participate.
- 1.13 The Committee acknowledges that there are many initiatives addressing and many reports highlighting the problems facing our catchment systems. There has been, until recent times, little systematic and co-ordinated action. There is at the time of tabling this report, no nationally co-ordinated approach.
- 1.14 The Committee therefore welcomes the announcement by the Prime Minister, the Hon. John Howard MP, of *Our Vital Resources: National Action Plan for Salinity and Water Quality in Australia*. The action plan proposes the first co-ordinated, national approach to the problems of salinity and water quality. The plan provides the Commonwealth with the lead role in facilitating, in co-operation and agreement with the states, solutions to these problems. The Prime Minister said that unless the Commonwealth took the lead role, the problems ‘will never be fixed because there are competing and colliding state interests that only the facilitating, co-ordinating leadership role of the Federal Government can overcome’.⁶

6 Prime Minister, The Hon. John Howard, Press conference transcript on the launch of *Our Vital Resources: National Action Plan for Salinity and Water Quality in Australia*, Parliament House, Canberra, 10 October, 2000, downloaded from www.pm.gov.au/news/interviews/2000/interview475.htm, accessed 11 October 2000.

- 1.15 While the Committee welcomes this initiative, it does believe that the action plan can be strengthened in a number of ways and specific recommendations to this effect are made in chapters 3 and 4.
- 1.16 This report does not aim to duplicate the findings of other inquiries or make specific recommendations on measures that could be used to address specific, local problems. Rather, the Committee seeks in this report to identify the systemic issues facing the development and implementation of a national approach to the ecologically sustainable use of Australia's catchment systems and to provide a blueprint for such an approach.

Inquiry background

- 1.17 The House of Representatives Standing Committee on Environment and Heritage undertook a review of the 1997-98 annual report of the Department of the Environment and Heritage, and tabled a report on its review on 21 June 1999. This review was carried out under the provisions of House of Representatives Standing Order 324 (b).
- 1.18 The management of Australia's water resources, particularly regarding the health of urban and rural waterways and water quality standards, was outlined in the annual report and identified by the Committee in its review of that report as a topic warranting further examination.
- 1.19 On 2 June 1999 the Committee resolved to continue its investigation of the matters raised in the annual report through an inquiry into catchment management. In doing so, the Committee resolved to pay particular attention to the following matters:
- the development of catchment management in Australia;
 - the value of a catchment approach to the management of the environment;
 - best practice methods of preventing, halting and reversing environmental degradation in catchments, and achieving environmental sustainability;
 - the role of different levels of government, the private sector and the community in the management of catchment areas;
 - planning, resourcing, implementation, co-ordination and co-operation in catchment management; and

- mechanisms for monitoring, evaluating and reporting on catchment management programs, including the use of these reports for state of the environment reporting, and opportunities for review and improvement.
- 1.20 The Committee held inspections and public hearings in Queensland, New South Wales, South Australia, Western Australia, Canberra and Victoria.
- 1.21 At public hearings, the Committee heard from representatives from all levels of government, as well as industry, research, environmental and community groups who are involved in catchment management.
- 1.22 During inspections, the Committee met with catchment management groups to discuss on-ground issues such as administration, funding, best practice in catchment management, and how communities can be encouraged to partake in catchment activities.
- 1.23 The Committee has also looked at catchment projects on the ground, to get an appreciation of the types of activities undertaken by community catchment groups.

The structure of the report

- 1.24 Evidence taken by the Committee has shown that the current approach to, and application of catchment and natural resource management in Australia is ad hoc, inconsistent and confusing. In this report, the Committee attempts to highlight the various approaches to catchment and natural resource management employed by the states; to outline the benefits and problems of these approaches; and to make recommendations to simplify the administration of catchment management in Australia.
- 1.25 It is important to understand how catchment management is applied in Australia and to appreciate the environmental and social context in which it operates. Chapter 2 highlights environmental issues, and examines management strategies employed by the states and territories. Chapter 2 also looks at associated benefits and problems, and examines the level of support for catchment management.
- 1.26 Chapter 3 discusses the present administrative arrangements for catchment management in Australia. The current arrangements, based on inadequate information and ongoing monitoring, are poorly co-ordinated and do not provide for effective harmonisation of programs between jurisdictions. As a consequence, what would be effective programs in one

area can be undone by poorly conceived actions in another. Moreover, while specific local programs have been implemented, whole-of-catchment programs are not developed or implemented. The approach is piecemeal and embodies considerable inefficiencies.

- 1.27 Chapter 3, therefore, highlights the benefits and difficulties of the present administrative arrangements, and proposes a new structure for catchment management that will not only more efficiently deliver programs to problem areas but co-ordinate and harmonise programs between catchment areas as well as jurisdictions.
- 1.28 Administrative arrangements will be effective, however, not only if they are well constructed but also adequately resourced. For this reason, chapter 4 examines the funding options that will most efficiently support a nationally co-ordinated catchment management program so that Australia's catchment systems are managed and maintained in an ecologically sustainable manner.

Catchment management in context

- 2.1 'Catchment-based management' is the approach used for land and water resource management in Australian states and territories. In Australia, this management approach is implemented through the creation of partnerships between the different levels of government and non-government organisations. Although these groups gather around different interests – facilitation, regulation, agriculture, conservation, rural communities, large urban cities – they share a common goal: ongoing access to land and water resources. Successful catchment-based management relies upon communication, co-ordination and cooperation between all stakeholders to ensure that the catchment systems are managed for the benefit of all Australians.
- 2.2 The Committee believes that the most cost effective way to manage the nation's natural resources to produce an ecologically sustainable outcome is through the co-ordinated management of Australia's catchment systems. The present catchment arrangements are varied and present insights into improved catchment management practices that, the Committee believes, would be more effective and efficient. Consequently, in this chapter and in chapter 3 the Committee makes recommendations that, it believes, when implemented will improve the present arrangements and make them much more effective.
- 2.3 Despite the shared interest in the beneficial and responsible management of Australia's catchment systems, large scale environmental degradation has been identified. It does not threaten only those Australians who live on the land or in rural communities. It threatens agriculture, rural communities, urban communities and other environmental assets. This assessment was reported in starker terms in a recent discussion paper, *National Investment in Rural Landscapes*, commissioned by the Australian

Conservation Foundation (ACF) and the National Farmers' Federation (NFF), with assistance from the Commonwealth Government's Land and Water Research and Development Corporation (LWRRDC):

Australia is facing a crisis. Our rural environment and natural resources are suffering. Problems such as salinity, river degradation and pollution, biodiversity loss, and soil degradation, show us that the way our land is used and managed is not sustainable.

These environmental issues have significant economic and social dimensions:

- the viability of farming (and, thus, our agricultural industry) is being undermined;
- rural and regional infrastructure (such as roads, railways, pipelines and buildings) is being eroded; and
- industries that depend upon our natural heritage, such as tourism, are being affected.¹

- 2.4 The discussion paper went on to report that 2.5 million hectares of land (about 5 per cent of cultivated land) are affected by salinity and this is projected to increase to more than 15.5 million hectares (about 30 per cent of cultivated land) unless action is taken immediately. On current trends, 50 per cent of woodland birds may be extinct within decades. One third of Australian rivers are in extremely poor condition. Another report indicated that by 2020, Adelaide's drinking water will fail World Health Organisation salinity standards two days in every five.²
- 2.5 Many of the problems that confront Australia's environment have, after a long period of gestation, emerged very quickly and pose considerable and immediate challenges. For example, in the Murray Darling Basin Ministerial Council's (MDBMC) *Salinity Audit*, one agency reported that 'a \$10 million waste water treatment plant which would normally have a life span of 100 years was expected to have a life of only 16 years'.³
- 2.6 The Audit also revealed that in response to salinity more than half of the households in the Loddon-Campaspe catchment region of the Murray-

1 National Farmers' Federation/ Australian conservationFoundation *National Investment in Rural Landscapes*, downloaded from www.acfonline.org.au/campaigns/landm/indepth/ACFNFFfullreport.htm, accessed 27 July 2000.

2 The Prime Minister, the Hon. John Howard MP, *Our Vital Resources: A National Action Plan for Salinity and Water Quality in Australia*, Canberra, 10 October, 2000, p. 1.

3 Murray Darling Basin Ministerial Council, *The Salinity Audit*, Murray-Darling Basin Commission, Canberra, 1999, p. 23.

Darling Basin had installed rainwater tanks, 13 per cent installed a water filter and 6 per cent were buying bottled water.

- 2.7 Catchments also face many infrastructure costs, such as damage to buildings, municipal water reticulation systems, household appliances damage to sewerage, water supply, telephone, gas and electricity supply systems as well as urban streets and country roads. The *Salinity Audit* quoted figures that indicated that 34 per cent of state roads and 21 per cent of national highways in south-western New South Wales are affected by high water tables.
- 2.8 The immediate and increasing cost of salinity has been revealed clearly in other information published by the Murray-Darling Basin Commission (MDBC). In general, water salinity of more than 700 EC⁴ is unsuitable for irrigating most horticultural crops, while 800 EC is the accepted maximum level for domestic supplies in larger towns and cities; a level of 900 EC renders water unfit for human consumption. For some small communities, there is often no alternative to a poor quality supply:
- At Boorowa and Yass, salinity levels of over 1,400 EC have already been recorded in town water supplies.
 - Barr Creek, which drains some of the salinised lands of the Kerang irrigation area and intersects saline groundwaters, has at times had salinity levels as high as 60,000 EC; sea water has a salinity of some 45,000 EC.
- 2.9 The effect of salinity of large regional communities is dramatic. For example:
- Some 60 per cent of the urban area of Wagga Wagga is at risk from highly saline watertables, rising by half a metre a year. Houses, public buildings, underground pipelines, public recreation areas, bridges, culverts and roads are all being affected.
 - The playing fields on the campus of Charles Sturt University have been badly affected; even salt tolerant grasses are not surviving.
 - Public facilities in Gunnedah, such as the school oval, have been severely effected by urban salinity.
 - For Wagga Wagga City Council, the cost of dryland salinisation is at least \$800,000 a year and growing. Rebuilding half a kilometre of the Sturt Highway on the western approaches to the city because of

4 The EC unit is a measure of electrical conductivity, commonly used to indicate the salinity of water. 1EC = 1 micro-Siemen per centimetre measured at 25° Celsius.

salinity damage cost \$500,000. Many other towns and communities are similarly affected.

- 2.10 Rural shires, face considerable problems from the damage to roads and bridges. For example:
- In 1990, the Young Shire Council estimated the cost of road damage due to high watertables at \$800,000.
 - Boorowa Shire has returned over 30 kilometres of paved road to gravel because of high saline watertables and the resulting maintenance problems.
 - The town of Yass is looking at the refurbishment of its water supply system. The cost of this may run into millions of dollars.
 - Most salts, once dissolved in water, are not removed by natural processes. Using present technology their removal is financially prohibitive, as costs are around \$100 per megalitre.
- 2.11 The present chapter aims to provide more detail to these claims by outlining the contours and context of the environmental problems facing Australia's catchment systems. The types of environmental degradation are outlined in the next section.
- 2.12 This chapter also outlines the framework for this inquiry: nature of a catchment, the present arrangements for catchment management in each Australian jurisdiction and the support for this approach to managing the environment. These matters are discussed in the second section of this chapter.

Environmental degradation in Australia

- 2.13 Degradation of Australia's catchment systems has many facets and as a result, all Australians have some experience of it. For example, nutrient rich sewage from towns and cities is released into waterways, contributing to toxic algal blooms in river ways and the pollution of river estuaries. This prevents water use for drinking or swimming, reduces aesthetic value, decreases tourism capabilities and diminishes the viability of oyster and shellfish industries.
- 2.14 In other areas the removal of native vegetation leads to unsustainable agricultural practices and harms the long-term outlook for many rural communities. It increases salinity levels or it may lead to the development

of acid soils. As a result, agricultural production is harmed, farms become less viable, and as in the case of salinity, downstream towns and cities face degraded water supplies and increased costs to provide potable water. Acid soils and salinity also lead to the decline of rural communities and the erosion of rural infrastructure, such as roads. The entire community faces increased costs to maintain and repair damaged infrastructure and to assist those people whose lives have been adversely affected by catchment degradation.

- 2.15 Environmental degradation is an expensive problem. A report released by the Prime Minister, the Hon. John Howard MP, estimated the annual cost of land and water degradation to be \$3.5 billion per annum, excluding the cost of pests and weeds.⁵
- 2.16 A recent report commissioned by the ACF and the NFF has estimated that the annual cost of degradation in rural landscapes is at least \$2 billion annually, and with no action, this could increase to \$6 billion annually by 2020.⁶ The following table sets out the estimated annual cost of the major forms of environmental degradation found in Australia's catchment systems, as estimated in that report. The estimates of cost do not include the cost of degradation on communities, the wider economy or infrastructure.

Table 2.1 Cost estimates of land and water degradation⁷

Form of degradation	Estimate (\$M per year)
Salinity	270
Acid soils	300
Sodic soils or structural decline	200
Erosion	80
Irrigation salinity	65
Water quality	450
Total	1,365

Source: NFF / ACF, *National Investment in Rural Landscapes*, April, 2000. Available at: <http://www.acfonline.org.au/campaigns/landm/indepth/ACFNFFfullreport.htm>

5 The Prime Minister, The Hon. John Howard MP, *Our Vital Resources*, 10 October 2000, p. 1.

6 NFF / ACF, *National Investment in Rural Landscapes*, p. i.

7 It is important to note that this table does not include other major land and water degradation factors such as weeds, which are estimated to cost at least \$3.3 billion per year, and pest animals such as insects, which are estimated to cost the agricultural sector \$3.1 billion per year.

Types of environmental degradation in Australia

- 2.17 There are a number of environmental problems in Australia's catchments. Some are well known, such as salinity; others not so. This section outlines the problems.

Salinity⁸

- 2.18 Salinity occurs when rising water tables dissolve salts stored in the soil and brings them closer to the surface. The rising water tables lead to waterlogging, or if close enough to the surface, the water evaporates, and salt accumulates and concentrates in the soil and on the surface of the land.
- 2.19 All Australian soils are naturally saline. This means that, in general, Australian soils tend to contain large amounts of salt. Some groundwater bodies are saltier than sea water. Where there is low rainfall and high evaporation rates areas may develop where high levels of salt are accumulated. This is known as primary salinity. Lake Eyre is an example of a naturally occurring area of primary salinity.
- 2.20 There are a number of types of secondary salinity, distinguished from each other by their causes. Dryland salinity, like irrigation and urban salinity, occurs when salts stored in the subsoil and rock profile are dissolved and brought nearer the surface by rising water tables.
- 2.21 Clearing native vegetation and replacing it with crops and pastures causes dryland salinity. Dryland salinity occurs in non-irrigated areas. Native vegetation has deep root systems which tend to keep the water table further away from the surface of the land. Crops and pastures have shallow root systems and the absence of a deep root system causes the watertable to rise. As the water table rises, the salts stored in the subsoil and rock profile are moved to the surface, where they become concentrated as the water evaporates.
- 2.22 Irrigation salinity occurs where irrigation (or rainfall) waters 'leak' into the groundwater system, causing the water tables to rise. Rising water tables flush the salts stored in the subsoil and rock profile to the surface. As the

8 This information is collated from: Land and Water Resources Research and Development Corporation, *Data Sheets on Natural Resource Issues*, Occasional paper no. 24/99, p. 7; 'Salinity in NSW', downloaded from www.dlwc.nsw.gov.au/care/salinity/index.html, accessed 14 September 2000; Environment Australia, Submission no. 141, appendix C; Industry Commission, *A Full Repairing Lease*, pp. 34 -36.

water evaporates, concentrations of salt develop. Irrigation salinity may also be caused where the irrigation water itself contains high levels of salt.⁹

- 2.23 The major difference between dryland and irrigation salinity is that the application of irrigation water to land can exaggerate the leakage of surplus water past the root zone to groundwater thereby increasing the rate at which the watertable rises.
- 2.24 Urban salinity is caused by a combination of dryland salinity processes and the overwatering of urban areas.
- 2.25 The likelihood that salinity problems will occur in urban areas is increased by the fact that towns are often located in areas prone to salinity, such as plains, in valleys, or at the foot of a ridge. The likelihood is increased still further by urban activities adding seepage to the groundwater. For example, over-watering of gardens and sports grounds, disruption of natural drainage lines, leakage from water, sewage and drainage pipes, and septic tanks increase the amount of water entering the subsurface zone. This leads to a rise in the watertable and with it, the movement of salts from the subsoil and rock profile to the surface. Removal of vegetation for urban development further tends to increase the amount of water entering groundwater systems.
- 2.26 The costs of urban salinity and rising water tables in urban areas is high. Rising water tables cause structural damage to homes and commercial premises. Infrastructure, such as roads, underground telephone, water, electricity and sewage supply systems as well as vegetation in parks and gardens can be damaged or destroyed.
- 2.27 The NSW Department of Land and Water Conservation (DLWC) reported on its internet site that in NSW alone this problem is of concern in 'Western Sydney, Wagga Wagga and in many other towns in Central Western and southern NSW, including (in alphabetic order) Blayney, Boorowa, Canowindra, Condobolin, Cootamundra, Cowra, Crookwell, Dubbo, Forbes, Grenfell, Gunnedah, Harden-Murrumburrah, Junee, Lake Cargelligo, Leeton, Orange, Parkes, Queanbeyan, Tamworth, Wellington, Yass and Young among others'.¹⁰
- 2.28 River salinity is caused by water running from areas of dryland, irrigation and urban salinity. Water flows into creeks and rivers, raising their

10 'What is salinity', downloaded from www.dlwc.nsw.gov.au/care/salinity/whatis.html, accessed 14 September 2000.

salinity. As salinity in a catchment worsens, the rivers become more salty. The NSW DLWC reports that:

According to the Murray-Darling Basin Commission Salinity Audit, salinity is likely to rise to high levels in future in the Bogan, Castlereagh, Lachlan, and Macquarie and Namoi Rivers. Already, in the Macquarie River west of the Great Dividing Range, about 630 ute-loads of salt pass Narromine every day...¹¹

- 2.29 Some industrial processes concentrate salt in the water they use, thereby generating waste water which can contain high levels of salt. For example, the water used for cooling coal-fired power stations is partly evaporated thereby concentrating the salt in the water discharged from the coolers. Working coal mines generate saline water from groundwater seepage and from rainwater coming into contact with mine workings or spoil. In some areas abandoned mines are a major source of salinity.
- 2.30 The cost of salinity is significant and rising. Owing to the fact that the effects of salinity are not seen immediately, the true cost will not be known for many years. However, by 1995, approximately 2.5 million hectares of land in Australia were affected by salinity, and this could potentially increase to 15 million hectares.¹² In Western Australia 9% of agricultural land is presently affected by salinity and it is thought that this will increase to 32% of agricultural land within several decades.¹³
- 2.31 Lost agricultural production as a result of salinity has been estimated to cost \$130 million annually, damage to infrastructure another \$100 million and loss of environmental assets a further \$40 million.¹⁴ Other estimates place the cost of salinity alone, without including other difficult to quantify costs, at about \$335 million per annum.¹⁵
- 2.32 Salinity damages infrastructure such as roads, footpaths and building foundations, and is a significant cost to local governments and rural

11 'What is salinity', downloaded from www.dlwc.nsw.gov.au/care/salinity/whatis.html, accessed 14 September 2000.

12 LWRRDC, *Data Sheets on Natural Resource Issues*, Occasional paper no. 24/99, p. 7.

13 J Bartle, 'The new hydrology: New challenges for landcare and tree crops', *Reform*, National Farmers' Federation: Canberra, Autumn 2000, p. 3.

14 EA, Submission no. 141, Appendix C, p. 20.

15 NFF/ACF, *National Investment in Rural Landscapes*, p. iii. The other difficult-to-quantify costs include: the cost of degradation of terrestrial, aquatic, estuarine and coastal ecosystems to the Australian economy; the extent to which industries such as tourism and commercial fishing depend upon these ecological services; and the environmental costs (which are difficult or impossible to quantify monetarily).

communities. For instance, the cost of repairing salt affected national highways in the south west of NSW is \$9 million dollars per year.¹⁶

- 2.33 Australian biodiversity is valuable for industries such as agriculture where native species help to pollinate crops and control insect pests.¹⁷ As lands and waterways become increasingly salty, habitat for many of Australia's unique plants and animals becomes lost, and there is a significant decrease in diversity.
- 2.34 The problems posed by salinity cannot be fixed quickly. Evidence provided to the Committee as well as press reports indicate that salinity may not be remedied for at least two to three generations. It is, then, a long-term problem. Consequently, education campaigns aimed at preventing salinity are crucial.
- 2.35 While there are a number of activities undertaken to prevent and to combat salinity, the primary method of control is lowering the water table by replanting native vegetation. Other methods include:
- crop rotation planning;
 - the use of deep rooted pastures to utilise water; and
 - mechanical methods, such as processing water at desalination plants.
- 2.36 In the past, a major problem facing any program aimed at addressing the spread of salinity has been the lack of reliable information. The use of geophysical mapping can contribute to identifying potential salinity areas and to planning appropriate management strategies.
- 2.37 Rather than attempting to reduce and remedy salinity, an innovative approach to adapting farming practices to the realities of catchment degradation, and seeing salinity as an opportunity for new business ventures, has involved trials of the farming of snapper, a salt water fish, in the Murray Darling Basin in saline agricultural water. The farming of other salt water organisms, such as prawns, molluscs and seaweed is also being investigated.¹⁸

16 Environment Australia, Submission no. 141, Appendix C, p. 21.

17 *Moving Forward in Natural Resource Management: The contribution science, engineering and innovation can make*, paper presented by The Hon. Mark Vaile MP, to the Prime Minister's Science, Engineering and Innovation Council, p. 1.

18 A Wahlquist, 'Murray-Darling's Salvation Lies in the Salt of the Earth', *The Australian*, 11 April 2000.

Acidification

- 2.38 The application of nitrogen rich fertilisers, combined with the use of nitrogen fixing crops such as legumes can cause soil acidification.¹⁹ Extreme acidification results in soil structure decline, which creates poor quality topsoils. Acid soils support very little vegetation,²⁰ and they have serious effects on agricultural productivity and biodiversity.
- 2.39 About 24 million hectares of agricultural land in Australia is considered to be acidic, and production losses associated with acidification are estimated at over \$134 million per year.²¹

Acid Sulfate Soils

- 2.40 One form of soil acidification is acid sulfate soils. This is the common name given to naturally occurring soil and sediments which contain either iron sulphides or the acidic products of the oxidation of sulphides. As long as sulfide soils remain under the water table, they do not oxidise and the soils remain harmless. These soils are classified as Potential Acid Sulfate Soils (PASS). However, when exposed to air through practices such as excavation or drainage, the sulfides oxidise, to create sulfuric acid. These are known as Actual Acid Sulfate Soils (ASS).
- 2.41 Acid sulfate soils occur throughout Australia's coastal and inland regions. Nationally there is an estimated 40 000 km² of coastal acid sulfate soils.²²
- 2.42 Sulfuric acid dissolves metals such as iron and aluminium, and is also capable of dissolving heavier metals such as cadmium. Increased soil acidity makes nutrients less available to plants, exposes them to toxic concentrations of metals, and decreases their ability to utilise water.²³ Acid from acid sulfate soils leach into waterways where it can kill fish and cause diseases. ASS contributes to habitat degradation and loss of biodiversity in both aquatic and terrestrial ecosystems.

19 CSIRO Land and Water, *Acidification of Cropping Soils in South Australia – Causes and Effects* Research Paper Series no. 1, November 1997, p. 2.

20 'Soil Acidification', downloaded from www.netc.net.au/enviro/fguide/soilacid.html, accessed 19 September 2000.

21 The Hon. Mark Vaile MP, *Moving Forward in Natural Resource Management*, p. 8.

22 EA, Submission no. 141, Appendix B, pp. 6, 14.

23 'Introduction to Acid Sulfate Soils', downloaded from www.environment.gov.au/marine/manuals_reports/coastnet/acid_soils, accessed 13 September 2000; CSIRO Land and Water, *Acidification of Cropping Soils in South Australia*, p. 1.

- 2.43 ASS effects a number of industries, including agriculture and aquaculture. Because ASS stunts plant growth and increases exposure to disease, overall grain yields are reduced. Many pasture species cannot be grown on acidified soils, and ASS decreases the area of land available for grazing cattle and sheep. 'Fish kills' and fish diseases reduce the amount of saleable product in aquaculture industries, for instance, production losses of Sydney rock oysters due to ASS were estimated at \$7 million over a six year period.
- 2.44 ASS also impacts on industries such as urban and industrial development, and infrastructure. It is also possible that ASS can impact on the quality of drinking water and have negative effects on human and animal health.²⁴
- 2.45 Prevention is the principal method of combating acidification and ASS. Identifying and mapping acidic and ASS soils, and incorporating this knowledge into land use planning is the best way to avoid potential problems. Once soils have become acidified, applying lime and avoiding acidifying fertilisers can help to alleviate acidity.

Erosion

- 2.46 Soil erosion effects land and water quality. Topsoil erosion removes nutrients, lowers productivity and contributes to soil structure decline. In areas where all topsoil has been lost, 'scalds' form, sometimes covering hundreds of hectares and rendering the land unusable.²⁵
- 2.47 Soil erosion leads to the silting of rivers, waterways and dams,²⁶ When soil enters waterways it can carry with it acids, heavy metals, pesticides, chemicals, salt and nutrients, reducing water quality and impacting on agriculture, drinking water and biodiversity.²⁷
- 2.48 Soils in Australia are generally formed at a rate of less than one tonne per hectare per year,²⁸ however, in some areas, soil erosion causes losses of up to 20 tonnes per hectare per year.²⁹ For this reason, soil erosion is a major

24 EA, Submission no. 141, Appendix B, pp. 9, 11-13.

25 'Natural Resources Management', downloaded from www.mdbc.gov.au/education/encyclopedia/land_degradation.htm accessed 20 September 2000.

26 Industry Commission, *A Full Repairing Lease*, p. 41.

27 State of the Environment Advisory Council, *Australia: State of the Environment 1996*, Commonwealth of Australia, Canberra 1996, pp. 6-27.

28 The Hon. Mark Vaile MP, *Moving Forward in Natural Resource Management*, p. 8.

29 'Natural Resources Management', downloaded from www.mdbc.gov.au/education/encyclopedia/land_degradation.htm accessed 20 September 2000.

factor limiting the long-term sustainability of broadacre agriculture in Australia.³⁰

- 2.49 Accelerated soil erosion results from clearing, overgrazing and cultivation.³¹ When soil is left bare, it becomes susceptible to dust storms caused by wind erosion. Wind erosion removes large amounts of fine topsoil, organic matter and nutrients,³² and dust storms can create visibility and health hazards in towns and cities. Bare soils also suffer increased runoff from water erosion,³³ which has now damaged soils in all areas of Australia.³⁴ In NSW, 31.3 million hectares are subject to wind and water erosion.³⁵
- 2.50 One common cause of soil erosion is the velocity of water run-off. When combined with the effect of rain water, the erosive effect of water velocity can increase up to 200 times.³⁶ Water velocity becomes an erosion problem as a result of other forms of soil erosion. As topsoils are eroded, a crust forms, which air and water can't penetrate. When this occurs less water soaks into the soil, causing more water to run-off and subsequently move at a higher velocity. High-velocity water erosion creates deep and wide gullies which increase in size as the edges collapse into the gully. Gullies up to 30 metres deep can be formed from the erosive action of water velocity.³⁷
- 2.51 The principal method used to combat erosion is revegetation. This can be incorporated into farm planning through modifying cultivation and rotation techniques, and using methods such as strip cropping and stubble retention. Soil erosion caused by water runoff can be minimised by managing land in a way that maximises rainfall infiltration and increases the use of water by plants.

30 LWRRDC, *Data Sheets on Natural Resource Issues*, Occasional paper no. 24/99, p. 22.

31 State of the Environment Advisory Council, Australia: *State of the Environment*, pp. 6-27.

32 The Hon. Mark Vaile MP, *Moving Forward in Natural Resource Management*, pp. 8-9.

33 State of the Environment Advisory Council, Australia: *State of the Environment*, pp. 6-27.

34 The Hon. Mark Vaile MP, *Moving Forward in Natural Resource Management*, p. 8.

35 'Natural Resources Management', downloaded from www.mdbc.gov.au/education/encyclopedia/land_degradation.htm, accessed 20 September 2000.

36 'Sheet erosion', downloaded from www.netc.net.au/enviro/fguide/sheeterosion.html, accessed 20 October 2000.

37 'Gully erosion', downloaded from www.netc.net.au/enviro/fguide/gullero.html, accessed 1 November 2000.

Eutrophication and algal blooms

- 2.52 Eutrophication occurs when high levels of nutrients, particularly phosphate, and to a lesser extent nitrogen, occur in waterways. When combined with factors such as low water flows and increased water temperatures, eutrophication can lead to algal blooms.³⁸ Algal blooms clog water supplies, impart an unpleasant taste to drinking water, can be toxic to humans and animals, kill fish, are unsightly to the public and smell when decaying. They can cause the closure of recreation areas and local water supplies, and halt some aquatic industries, such as shellfish production.³⁹
- 2.53 Algal blooms pose a serious threat of environmental degradation for nearly every state and territory in Australia. They are estimated to cost between \$180 to \$240 million per year.⁴⁰ In 1991-1992, the Darling River experienced a blue-green algal bloom that extended over 1000 kilometres,⁴¹ and earlier this year, a blue-green algae bloom covered nearly 40 square kilometres in Moreton Bay in Queensland. The algae spread at a rate of up to 100 square metres per minute. In humans algae may cause a blistering rash similar to second degree burns, as well as asthma and eye irritation.⁴²
- 2.54 Some of the major sources of nutrients include:
- naturally occurring nutrients found in rocks and soils;
 - sediments on river and lake beds;
 - run-off from agricultural land and forests;
 - sewage treatment works;
 - fish farms; and
 - stormwater run-off from urban areas.⁴³

38 'Natural Resources Management', downloaded from www.mdbc.gov.au/education/encyclopedia/water_quality.htm, accessed 20 September 2000.

39 LWRRDC, *Data Sheets on Natural Resource Issues*, Occasional paper no. 24/99, p. 38.

40 LWRRDC, *Cost of Algal Blooms*, Occasional paper no. 26/99, p. x.

41 'Natural Resources Management', downloaded from www.mdbc.gov.au/education/encyclopedia/water%5Fquality.htm, accessed 20 September 2000.

42 'Killer Algae Alert', *The Sunday Mail*, 2 April 2000.

43 'Natural Resources Management', downloaded from www.mdbc.gov.au/education/encyclopedia/water%5Fquality.htm, accessed 20 September 2000.

- 2.55 Since nutrients bind to soil particles, soil erosion also contributes significantly to the eutrophication of waterways.
- 2.56 According to the MDBC, research indicates that natural, not artificial, sources account for the majority of nutrient loads. However, it is considered that minimising human-induced impacts, for example less clearing and less fertiliser use, can contribute to a reduction in nutrient loads, particularly on a local scale.⁴⁴ There are a number of ways to minimise waterway eutrophication. At the farm level this can include the introduction of strict fertiliser regimes designed to maximise utilisation of nutrients by crops. Other methods include:
- increasing stream water flows to help prevent the warm, low flow conditions favoured by blue-green algae;
 - improving waste management practices to prevent heavy metals and chemicals, and untreated sewage from reaching the streams;
 - nutrient reduction through the creation of detention ponds and contour banks; and
 - artificial wetlands designed to trap and utilise nutrients before they reach waterways.

Urban stormwater

- 2.57 Urban regions often have large areas with non-porous surfaces such as concrete, roads and driveways. In these areas, water is unable to soak into the ground, and instead it runs off into stormwater drains, carrying urban litter and pollution with it. The water in these drains runs directly to waterways and estuaries, such as Port Phillip Bay in Victoria or Gulf St Vincent. Stormwater runoff often contains high nutrient levels, which can come from dog and cat faeces and from excessive use of garden fertilizers.⁴⁵ High pollution levels in the water can come from car petrol and oil lifted off the road during rain periods, household chemicals and oil poured down the drain, heavy metals from industrial sites, and litter such as cigarette butts and plastic bags.⁴⁶

44 'Natural Resources Management', downloaded from www.mdbc.gov.au/education/encyclopedia/water%5Fquality.htm accessed 20 September 2000.

45 'Frequently asked questions' downloaded from www.epa.nsw.gov.au/stormwater/resourceskit/materials.faq, accessed 1 November 2000.

46 'Victoria Stormwater Action Program', downloaded from www.epa.vic.gov.au/stormwater/, accessed 15 September 2000; *Australia, State of the Environment*, pp. 8-9. Evidence was also provided to the Committee during inspections and discussions in the Adelaide region.

- 2.58 Pollution from urban stormwater can have a major impact on coastal waterways near large cities.⁴⁷ For example, one litre of oil can contaminate one million litres of water.⁴⁸ Additionally, a recent CSIRO study has identified stormwater as a major threat to the health of Melbourne's Port Phillip Bay,⁴⁹ which receives water from more than 300 stormwater drains.⁵⁰ Each year, the equivalent of 500 truckloads of nitrogen is added to the Bay from stormwater discharges.
- 2.59 There are a number of ways to reduce the pollution of urban stormwater. Education campaigns such as the recent 'The Drain is Just for Rain' campaign undertaken in NSW, attempt to make the urban population aware of their impacts on water quality, and encourage practices which minimise pollution, such as picking up dog droppings and not tipping paint and oil down the drain. Mechanical mechanisms of reducing stormwater pollution include the construction of pollution and trash racks to trap oil, grease and litter.⁵¹
- 2.60 Another commonly used method is to construct artificial wetlands, which trap and absorb nutrients before they can reach the waterways. For example, the artificially constructed Urrbrae wetlands in South Australia filters stormwater to improve the quality of the water released into Gulf St Vincent.⁵² In addition, the wetland provides valuable habitat for native flora and fauna, and provides a recreation area for the local residents.

Pest plants and animals

- 2.61 Introduced plants and animals pose a considerable threat to biodiversity. According to Dr Mark Lonsdale, of the CSIRO, introduced plants and animals are regarded as second only to habitat clearing as a threat to biodiversity.⁵³

47 Senator the Hon. Robert Hill, 'Message from the Minister', *Stormwater News*, vol 1(1), September 2000, p. 1.

48 'Stormwater', downloaded from www.epa.vic.gov.au/beachreport/stormwater.htm, accessed 1 November 2000.

49 'Protecting Port Phillip', *Stormwater News*, vol 1(1), September 2000, p. 4.

50 'Stormwater', downloaded from www.epa.vic.gov.au/beachreport/stormwater.htm, accessed 1 November 2000.

51 'Frequently asked questions' downloaded from www.epa.nsw.gov.au/stormwater/resourceskit/materials.faq, accessed 1 November 2000.

52 'The Urrbrae Wetland', downloaded from www.cwmb.sa.gov.au/wetlands/urrbrae.htm, accessed 3 November 2000.

53 M Lonsdale, *Weed Invasion – Australia's \$3 billion problem*, National Science Briefing, Australian Parliament House, 17 August 2000.

Weeds

- 2.62 Weed plants pose a significant threat to Australia's biodiversity and agriculture. Almost all of Australia's native vegetation has been, or is likely to be, invaded by exotic species,⁵⁴ and there are no Australian conservation areas free of environmental weeds.⁵⁵
- 2.63 There are currently 2700 introduced plant species in Australia, and approximately 1000 of these are listed as weeds.⁵⁶ Agricultural weeds impact on agricultural production and environmental weeds invade natural ecosystems. Native plants can also be classified as weeds if they become established in areas outside their natural habitat or their population increases to a size where it effects biodiversity or agriculture.⁵⁷
- 2.64 Weeds can be introduced into a region in a number of ways. Many weeds in Australia were originally garden plants that escaped and flourished in the Australian environment. Others, such as bitou bush, were introduced to stabilise coastal sand dunes. The uncapped bores of the Great Artesian Basin have created permanent water sources, leading to the establishment of woody weeds such as prickly acacia.⁵⁸ The open drains used to transport bore water have given these weeds the opportunity to disperse throughout the basin. Soil disturbance by feral animals in the basin has also provided an opportunity for weeds to establish.
- 2.65 Weeds affect the economic output and viability of primary industries such as agriculture in a number of ways. The effects include a reduction in yield and grain contamination. Aquatic weeds can choke irrigation and drainage channels, and streams.⁵⁹ Since they invade native plant communities and compete for space, weeds reduce plant diversity and degrade or destroy habitat for native animals.

54 'Environmental Weeds in Australia', downloaded from <http://www.anbg.gov.au/weeds/weeds.html>, accessed 7 September 2000.

55 M Lonsdale, *Weed Invasion – Australia's \$3 billion problem*, 17 August 2000.

56 M Lonsdale, *Weed Invasion – Australia's \$3 billion proble'*, 17 August 2000.

57 The Hon. Mark Vaile MP, *Moving Forward in Natural Resource Management*, p. 1.

58 A Van Dugteren, 'Conserving the Future', *GEO Australasia*, Vol 20(6), December/January 1999, pp. 22-37.

59 Agricultural and Resource Management Council of Australia and New Zealand (ARMCANZ), Australian and New Zealand Environment and Conservation Council (ANZECC) and Forestry Ministers, *The National Weeds Strategy – a Strategic Approach to Weed Problems of National Significance*, 2nd ed. Commonwealth of Australia, March 1999, pp. 7-8.

2.66 It has been estimated that weeds cost Australian agriculture \$3.3 billion dollars per year. However, this figure does not include other costs which are more difficult to measure.⁶⁰ Brisbane environmental consultant Mr Tim Low, considers that if the social costs are added, the figure grows to \$6 billion per year.⁶¹

Pest animals

2.67 A pest animal can be defined as one that occurs where humans do not want it.⁶² Because many introduced pest animals such as cats, foxes, pigs and rabbits have very few predators in Australia populations increase rapidly, and have a serious impact on agricultural production and biodiversity.⁶³ When found in large numbers some native species can also be pests, for example the cotton bollworm moth, which severely damages cotton crops.

2.68 Pest animals compete with humans, livestock and native plants and animals for resources, including space and food. They contribute to land degradation. For example, European carp overtake native fish habitats,⁶⁴ cats and foxes prey on domestic stock and native animals, and hard hoofed animals such as pigs and goats create soil erosion problems. Many pest animals also carry diseases, which can provide a source of infection for domestic stock, for example hydatids.⁶⁵

2.69 The economic cost of pest species is difficult to determine, however it has been estimated that the cost of rabbits to Australian primary industries is at least \$90 million per year,⁶⁶ and insect damage costs Australian agriculture \$3.1 billion per year.⁶⁷

2.70 There are number of techniques available to deal with weeds, including spraying with pesticides, slashing and burning. Weed control is best undertaken in a coordinated manner. The Commonwealth government's National Weeds Strategy aims to provide a nationally coordinated program for effective weed management. The Australian Quarantine and

60 ARMCANZ, ANZECC and Forestry Ministers, *The National Weeds Strategy*. p. 8.

61 'Gardens Seen as Main Threat to Environment', *West Australian*, 11 October 2000, p. 44.

62 Industry Commission, *A Full Repairing Lease*, p. 43.

63 The Hon. Mark Vaile MP, *Moving Forward in Natural Resource Management*, p. 1.

64 Industry Commission, *A Full Repairing Lease*, p. 44.

65 'Feral Animals in Australia', downloaded from www.environment.gov.au/bg/invasive/feralintro.html, accessed 12 September 2000.

66 The Hon. Mark Vaile MP, *Moving Forward in Natural Resource Management*, p. 12.

67 Industry Commission, *A Full Repairing Lease*, p. 44.

Inspection Service (AQIS) also plays an important role in preventing weeds from entering the country.

- 2.71 Methods for pest animal reduction include culling, poisoning, biological control, including the introduction of viruses such as the rabbit calicivirus. A number of programs are underway in Australia to fence off areas of native vegetation, remove pest species and restock with native animals. One company, Charlie Carp, has provided an innovative solution to pest control by harvesting carp to provide high quality plant fertiliser.

Development of catchment management in Australia

- 2.72 The Committee was advised by the Department of Agriculture, Fisheries and Forestry (AFFA) that catchment management as an approach to the management of Australia's agricultural lands began in the early 1900s.⁶⁸ Following the Second World War it was recognised that the management of Australia's water resources would be critical to economic development and that the planning for the use of water resources would involve considering each river valley as a whole. During this time a number of people emerged as champions of the catchment approach to water resource management, including Mr Ernest ('Watershed') Jackson from Albury. He emphasised the importance of educating farmers to the practice of integrated management of entire valleys and catchments.
- 2.73 By the late 1970s environmental degradation caused by agricultural and other land use practices had been recognised by various state and national government agencies. As a result, soil conservation agencies moved towards taking a whole of catchment approach to natural resource management. The recognition of the existence of a significant problem requiring action at a national level led, from the early 1980s, to a series of targeted legislative interventions by national government and state governments. These included the formation, in 1988, of the MDBC, and culminated in the decade of Land Care and, beginning in 1997, the work of the Natural Heritage Trust (NHT).⁶⁹

68 Water Corporation (WA), Submission no. 142, p. 3.

69 Agriculture, Fisheries and Forestry, Australia, Submission no. 142, pp. 3-4.

What is a catchment?

- 2.74 Catchments are naturally occurring divisions in the landscape, defined by the flow of surface waters. A catchment is the land that channels water into a particular watercourse or river. Dr Colin Balmer provided this formal definition to the Committee:
- ... a discrete geographical area of land, comprising one or more hydrometric sub-catchments, whose boundaries are derived primarily from natural features such that surface water drains and flows to a river, stream, lake, wetland or estuary.⁷⁰
- 2.75 The catchments of creeks, gullies and streams combine to form the catchments of small rivers, which together form the catchments, or river basins, of major rivers, and these combine to form “drainage divisions”.⁷¹ Within Australia there are twelve drainage divisions. These subdivide into 77 river basins, which in turn subdivide into 324 Surface Water Management, or catchment, areas.⁷² Maps of these divisions are given in appendix E.
- 2.76 One of the best known drainage divisions in Australia is the Murray-Darling Basin. It is well known for its environmental problems, including salinity, acidification, irrigation and water quality. The Murray-Darling catchment includes not only the land channelling water into the Murray and Darling rivers, but land which channels water directly into the rivers that flow into them, including the Murrumbidgee, the Lachlan, Gwydir, and the Namoi.
- 2.77 Catchments are natural geographical structures. They transcend state and local government boundaries. This creates a number of administrative difficulties which are further discussed in Chapter 3.

Catchment management

- 2.78 ‘Catchment management’ refers to the practice of managing natural resources using water catchment systems as the unit of management. As an approach to managing land and water resources, catchment management involves integrating ecological, economic and social aspects of natural resource management around an identified catchment system. It aims to integrate these considerations in the way that best ensures long-

70 C Balmer, Submission no. 96, p. 1.

71 P James, Submission no. 125, p. 2.

72 S Noble, National Land and Water Resources Audit, personal communication, 28 September 2000.

term viability whilst at the same time serving human needs. AFFA considers that:

Catchment management is the holistic management of natural resources within a catchment unit encompassing interrelated elements of land and water, managed on an ecological and economic basis and incorporating social systems It is a system that favours the integration of environmental policy across government, community, and industry sectors through partnerships and extensive stakeholder inclusion.⁷³

Catchment management by jurisdiction

- 2.79 In this section the approach to catchment management in each jurisdiction in Australia is briefly examined. All states and territories in Australia have some form of catchment, or natural resource, management. Some states and territories have legislation to support catchment management, whereas in other states management is voluntary or occurs as an element in a wider natural resource management practice.
- 2.80 What each jurisdiction does is determined by the responsibilities that it has in virtue of the provisions of the Constitution of the Commonwealth. These, however, are not clearly defined. As a result, a level of government may, more or less as an accident of tradition, exercise powers in respect of a certain matter because it has done so since Federation. It will continue doing so until the power is clarified by the High Court, and its competency confirmed or the power is allocated to another level of government. Table 2.2 outlines a traditional division responsibilities between the different levels of government in Australia, as outlined by Environment Australia (EA).

73 AFFA, Submission no. 142, p. 2.

Table 2.2 Traditional division of responsibilities between the levels of government and individuals.⁷⁴

Jurisdiction	Commonwealth	State	Region (ie Catchment Management Authority)	Local government	Individuals/ Corporations
<i>Activity</i>					
Adherence to international/national conventions	•••	••	•	•	•
Leadership and catalysing change	•••	•••	•••	•••	•
Administer land and water legislation and regulation	•	•••	–	••	–
Undertake regional and local planning	•	••	•••	•••	•
Support for research and development	•••	•••	•	•	–
Development of national NRM policy	•••	••	•	•	•
NRM extension and community capacity building	•	•••	••	••	•
On-ground management (except for crown lands)	–	–	••	••	•••
On-ground management of crown lands	•••	•••	••	•	–

Levels of responsibility

- Not relevant
- Low
- Medium
- High

74 EA, Submission no. 141, p. 20. This table provides an indication of the various levels of responsibility for natural resource management areas, as advised to the Committee by Environment Australia (EA). EA notes that this table can only be an indication; the particular responsibility will vary according to the legislative environment and the administrative arrangements within a particular region.

The Commonwealth

Legislative powers

2.81 The Constitution of the Commonwealth does not confer upon the Commonwealth Parliament any specific power to make laws in respect of the environment, land management or water use. The laws that are made for environmental matters draw their validity from other heads of power in the Constitution. Commonwealth powers that have been used to support legislation for environmental purposes include:

- trade and commerce power (s51(i));
- taxation power (s51(ii));
- quarantine power (s51(ix));
- fisheries power (s51(x));
- corporations power (s51(xx));
- race power (s51(xvi));
- external affairs power (s51(xxix));
- incidental power (s51(xxxix));
- power over customs, excise and bounties (s90);
- financial assistance power (s96); and
- territories power (s122)).⁷⁵

2.82 As a result of the uncertain power to legislate, the primary responsibility for land use and land management has been assumed by the states and territories. The result of this, according to AFFA, is that the current role of the Commonwealth could be described as:

... providing the policy and economic framework that will enable catchment management to be effective. The Commonwealth provides leadership and policy direction, funding, research and development, public awareness, supports education, information

75 Australian and New Zealand Environment and Conservation Council, *Guide to Environmental Legislation in Australia and New Zealand*, 5th ed, (Report No 31, 1997), quoted in the Senate ECITA References Committee report, *Commonwealth Environment Powers*, p. 7. Another power that could be used, but does not appear to have been used for environmental matters, hitherto, is the power of the Parliament of the Commonwealth to legislate in respect of any matters referred to the Commonwealth by a state or states (s. xxxvii).

exchange and intergovernmental coordination which support catchment level activity.⁷⁶

- 2.83 The reliance of Parliament upon constitutional powers not directly related to environmental matters but which provide authority to legislate in respect of environmental matters is amply demonstrated by the external affairs power. The external affairs power of the Constitution has provided the basis for a body of environmental activities on the part of the Commonwealth. Australia is signatory to 65 international treaties relating to the environment, some dating back as early as 1946.
- 2.84 These treaties include the Convention on International Trade in Endangered Species of Wild Fauna and Flora (21/9/73); Convention concerning the Protection of the World Cultural and Natural Heritage (17/12/75); Convention on Wetlands of International Importance Especially as Waterfowl Habitat (8/5/74); and the Convention on Biological Diversity (5/6/92).
- 2.85 Relying in part upon these international treaties, the Commonwealth has introduced a number of pieces of legislation targeted at protecting the environment. These include, the *Endangered Species Protection Act 1992*, the *Wildlife Protection (Regulation of Exports and Imports) Act 1982*, and the *World Heritage Properties Conservation Act 1983*.
- 2.86 Australia is also signatory to Agenda 21, the global action plan for sustainable development, which was adopted at the UN Conference on Environmental and Development in June 1992.
- 2.87 A major legislative initiative occurred in 1999, with the enactment of the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999*, (EPBC). This legislation came into force on 16 July 2000. The Act replaces five previous Acts – the *Environment Protection (Impact of Proposals) Act 1974*, *Endangered Species Protection Act 1992*, *National Parks and Wildlife Conservation Act 1975*, *World Heritage Properties Conservation Act 1983*, and *Whale Protection Act 1980*.

76 AFFA, Submission no. 142, p. 12.

- 2.88 The EPBC Act gives the Commonwealth significant environmental responsibilities in certain defined areas. For example, it establishes a new national process for assessment of proposed actions that are likely to have a significant impact on matters of national environmental significance, or on Commonwealth land. The six matters of national significance are:⁷⁷
- World Heritage properties;
 - Ramsar wetlands of international importance;
 - nationally threatened species and communities;
 - migratory species protected under international agreements;
 - nuclear actions, including uranium mining; and
 - the Commonwealth marine environment.
- 2.89 In the short time it has been operating, the EPBC Act has had an effect. By 20 September 2000, 36 projects had been referred under the Act. Seven have been determined to be environmentally significant, therefore needing assessment and approval. Of the remaining 29, 13 did not require assessment and approval, and 16 were still under consideration.
- 2.90 The Act also allows the Commonwealth to accredit assessment provisions of state and territory government through bilateral agreements. In certain circumstances, state and territory approval provisions may be accredited.

National strategies and initiatives

- 2.91 There are a number of national strategies and initiatives in the area of environmental management. The most recent and significant development has been the announcement by the Prime Minister, the Hon. John Howard MP, of the proposal to establish a single, national ministerial council, the Natural Resource Management Council. This council will involve the Commonwealth and the states which, together, will agree to targets and standards. This council is one element in a package of integrated measures designed to address salinity and water quality issues within the Commonwealth. The initiative also involves a

77 In addition to the six matters of national environmental significance, the Commonwealth government is currently considering a proposal to apply a 'greenhouse trigger' under the Commonwealth EPBC Act. Under the proposal, the trigger would apply to actions or developments likely to result in greenhouse gas emissions over 500 000 tonnes of carbon dioxide equivalent in any 12 month period. Projects emitting greenhouse gases above this level would trigger the requirement, under the EPBC Act, for assessment and approval. The Commonwealth government has released a model for a trigger that could be applied under the Act, and is currently consulting with the Australian states and territories.

commitment by the Commonwealth of \$700 million over seven years, with a request that the states match this dollar for dollar making a seven year package of \$1.5 billion.⁷⁸

- 2.92 The council will also establish arrangements for monitoring progress in attaining these targets. Only those jurisdictions that agree to implement a salinity and water quality plan as a package will receive Commonwealth funding.⁷⁹ These arrangements would appear to rely, at least in part, upon the financial assistance power (s96) of the Constitution for their constitutional validity.
- 2.93 Some earlier examples of national approaches include the Council of Australian Governments (COAG) Water Reform Framework, the Intergovernmental Agreement on the Environment, the National Water Quality Management Strategy (NWQMS), the MDBMC, and the Australian and New Zealand Environment Council (ANZECC). National Strategies have included:
- National Weeds Strategy (1997);
 - COAG Water Reform Agenda; and
 - Murray-Darling Basin Natural Resources Management Strategy.
- 2.94 Prior to the announcement of the National Action Plan is put in place, the NHT was the Commonwealth Government's major contribution to natural resource management. Established in 1996, the NHT has been allocated \$1.5 billion in funding for natural resource management, and is administered by a Ministerial Board, comprising the Minister for the Environment and Heritage, and the Minister for Agriculture, Fisheries and Forestry.⁸⁰ The NHT is expected run until mid-2001.
- 2.95 The NHT focuses of five main themes – land, water, vegetation, coasts and marine, and biodiversity. There are a number of programs funded under the NHT, including Murray-Darling 2001; Bushcare, the National Landcare Program, the National Land and Water Resources Audit,⁸¹ and the Coasts and Clean Seas Program.
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78 The Prime Minister, the Hon. John Howard MP, *Our Vital Resources*; press conference transcript on the launch of *Our Vital Resources*, available at: <http://www.pm.gov.au/news/interviews/2000/interview475.htm>

79 The Prime Minister, the Hon. John Howard MP, *Our Vital Resources*, pp. 6, 7.

80 EA, Submission no. 141, pp. 24, 80.

81 The importance of the NLWRA as an information sharing institution will be further discussed in Chapter 3.

New South Wales

- 2.96 The Department of Land and Water Conservation (DLWC) is the principal agency responsible for land and water resources in NSW. The state term for catchment management is 'Total Catchment Management' (TCM). This defined as 'the co-ordinated and sustainable use and management of land, water, vegetation and other natural resources on a water catchment basis so as to balance resource utilisation and conservation'.⁸²
- 2.97 TCM began in NSW in 1984, and was formalised with the introduction of the Catchment Management Act in 1989. In TCM there are three levels of management organisation:
- State Catchment Management Coordinating Committee (SCMCC)
 - ⇒ NSW ICM has recently undergone a structural change, and the full extent of the role of the SCMCC is not yet known. The committee includes representatives of state and local governments, and relevant community and interest groups.
 - Sydney Catchment Authority (SCA)
 - ⇒ The SCA was established by the *Sydney Water Catchment Management Act 1998*. The Authority is responsible for managing Sydney's catchments, dams, transfer pipes and other infrastructure. It supplies water to four million people in Sydney, the Blue Mountains, and some parts of the Southern Highlands.
 - Catchment Management Boards (CMBs)
 - ⇒ There are currently 18 CMBs in NSW, established under the *Catchment Management Act 1989*. These came into effect on 31 May 2000. They replaced 43 catchment management committees and five regional catchment committees. Restructuring was undertaken because of concern about the large number of natural resource management committees in NSW.
- 2.98 Responsibilities for catchment management in NSW are allocated under a number of the 52 Acts administered by the Department of Land and Water Conservation.

82 *Catchment Management Act 1989* (New South Wales), s. 4.

Queensland

- 2.99 In 1991 the Queensland Government introduced a community-based Integrated Catchment Management (ICM) approach,⁸³ run through the Department of Natural Resources. Catchment Coordinating Committees (CCCs) were established across the state to take an integrated approach to water, soil and vegetation resources within specific river catchments.
- 2.100 There are currently over 30 Catchment management groups operating in Queensland.⁸⁴ In addition to these, there are 13 Regional Strategy groups, which develop regional natural resource management strategies.⁸⁵
- 2.101 The Queensland Murray Darling Association was formed when Queensland entered the Murray Darling Basin Initiative in 1992. The Queensland Murray-Darling Association is the co-ordinating body for catchment management in south east Queensland.
- 2.102 There is no direct legislative base for the ICM framework in Queensland. The state government is investigating the possibility of statutory support for catchment management.⁸⁶ However, catchment management can be indirectly affected by a number of the 19 Acts of Parliament administered by the Department of Natural Resources.

Western Australia

- 2.103 The West Australian government supports an integrated approach to catchment management (ICM). The Western Australia government defines ICM as 'the co-ordinated planning, use and management of water, land, vegetation and other natural resources on a river or groundwater catchment basis'. The aim of Western Australian ICM is to bring all stakeholders together to form a plan of action that addresses social, economic and ecological concerns within a catchment.

83 Queensland government, Submission no. 138, p. 2.

84 'Integrated Resource Management', downloaded from www.dnr.qld.gov.au/community/irm/3_1_2.html, accessed 28 September 2000.

85 Queensland government, Submission no. 138, p. 2.

86 Queensland government, Submission no. 138, p. 2.

- 2.104 No single group or agency has overall responsibility for catchment management, and there is no legislation that provides a total framework.⁸⁷ A number of government agencies are responsible for catchment management in Western Australia. They include the:
- Water and Rivers Commission (WRC);
 - Department of Environmental Protection (DEP),
 - Department of Conservation and Land Management (CALM);
 - Agriculture Western Australia (AgWA);
 - Office of Water Regulation; and
 - Water Corporation.
- 2.105 Together these agencies are responsible for 77 legislative Acts, and many of these have both a direct and indirect effect on catchment management.

South Australia

- 2.106 The Department for Water Resources is the principle agency responsible for the management and administration of South Australia's water resources. While catchment management falls directly under most of the 10 Acts of Parliament administered by the Department for Water Resources, it is also affected by many of the 24 Acts administered by the Department for Environment and Heritage.
- 2.107 Catchment management in SA is defined as 'the management of water resources in an integrated way to achieve economic, environmental and social goals', and is primarily undertaken in accordance with arrangements set up under the *Water Resources Act 1997*. The Act defines the following four major areas of catchment management planning:
- The State Water Plan (SWP)
 - ⇒ The SWP outlines the policy framework for water resource management and use throughout the state. It provides information on the condition and use of South Australia's water resources.
 - Catchment Water Management Plans (CWMPs)
 - ⇒ CWMPs are undertaken by Catchment Water Management Boards (CWMBs) which are being established throughout South Australia.

87 Water and Rivers Commission, Submission no. 120, p. 1.

- Water allocation plans and trading rights
 - ⇒ These have been implemented to establish a system for the use and management of the state's water resources. They are carried out either through CWMBs, or Water Resources Planning Committees.
- Local Water Management Plans(LWMPs)
 - ⇒ LWMPs are carried out by local councils for water resources found within their area.

Victoria

- 2.108 The Department of Natural Resources and Environment is responsible for catchment management in Victoria, where it is defined as 'Integrated Catchment Management' (ICM). In Victoria, the primary goal of catchment management is 'to ensure the sustainable development of natural resource-based industries, the protection of land and water resources and the conservation of natural and cultural heritage'.⁸⁸
- 2.109 The principle ICM legislation in Victoria is the *Catchment and Land Protection Act 1994*. The Act established the Victorian Catchment Management Council, a peak body that provides advice to Government on natural resource management issues. Nine regional Catchment Management Authorities (CMAs) and a metropolitan Catchment and Land Protection Board (CALP) have also been created under this Act.⁸⁹
- 2.110 Regional Catchment Strategies (RCSs) have been formed across the state. These are recognised as the over-arching strategy for the development, management and conservation of land and water resources in each region. The primary role of the CMAs and the CALP is to co-ordinate the RCSs.
- 2.111 The Department of Natural Resources and Environment is responsible for administering 103 Acts of Parliament, with many of these relating to ICM.

88 Victorian government, Submission no. 127, p. 4.

89 Victorian government, *Transcript of evidence*, p. 310.

Australian Capital Territory

- 2.112 The ACT government defines Integrated Catchment Management (ICM) as ‘an approach to planning and natural resource management based on ecological, social and economic considerations.’⁹⁰
- 2.113 The ICM framework in the ACT is guided by the *ACT Decade of Landcare Plan (1991)* which recognised that a greater emphasis on ICM is required, and the *Territory Plan (1993)*, which states that ‘planning for land and water resources will be integrated, based on total catchment management principles.’ The ACT government is in the process of planning and implementing an ICM framework.⁹¹
- 2.114 While there is currently no legislation which completely covers ICM in the ACT, it is partly covered by the *Environment Protection Act 1997*, the *Water Resources Act 1998* and the *Nature Conservation Act 1980*,⁹² and to a lesser extent, some of the 72 Acts of Parliament administered by the ACT Department of Urban Services.

Tasmania

- 2.115 The non-statutory Tasmanian Land and Water Management Council (TLWMC) was formed in 1994.⁹³ The TLWMC working group defines ICM as ‘the co-ordinated and sustainable use and management of land, water vegetation and other natural resources on a regional water catchment basis so as to balance resource utilisation and conservation’.⁹⁴
- 2.116 The Department of Primary Industries, Water and the Environment (DPIWE) has designated 48 catchments for the state. There are currently Natural Resource Management processes underway in 27 of these catchments.⁹⁵

90 ACT government, *An Integrated Catchment Management Framework for the ACT*, 2000, p. 1, downloaded from <http://www.act.gov.au/environ/4483env.pdf>, accessed 11 September 2000.

91 J Loveitt, Environment ACT, personal communication.

92 ACT government, *An Integrated Catchment Management Framework for the ACT*, 2000, p. 20.

93 Tasmanian government, Submission no. 143, p. 2.

94 ‘Integrated Catchment Management’, downloaded from <http://www.dpif.tas.gov.au/domino/dpif/LandAndWater.nsf/65cc7bcd0c35212e4a2564b20027ef3c/a964b7844fa914904a2564dc0008b91d?OpenDocument>, accessed 31/08/00.

95 D Wright, Department of Primary Industries, Water and the Environment, Tasmanian government, personal communication, 1 September 2000.

- 2.117 The Tasmanian government is currently developing a state policy on ICM,⁹⁶ however ICM can also be influenced by many of the 95 Acts of Parliament currently administered by the DPWIE.

Northern Territory

- 2.118 The Northern Territory supports 'Integrated Catchment Management', which is still being developed. This is primarily undertaken through the Department of Lands, Planning and Environment, however it is also affected by legislation administered through the Department of Primary Industry and Fisheries, and the Parks and Wildlife Commission of the Northern Territory. These departments administer 83 pieces of legislation, many of which impact on catchment management. Important Acts include the *NT Water Act 1992*, which covers the investigation, use, control, protection, management and administration of water resources within the Northern Territory, and the *Fisheries Act 1999*.
- 2.119 At the end of the 1998/99 year, catchment plans existed for the Mary River Catchment, the Rapid Creek Catchment and the Ludmilla Creek Catchment.

Support for catchment management in Australia

- 2.120 This section outlines support for catchment management, and discusses the strengths and problems associated with the strategy.
- 2.121 The Committee stresses that it is not suggesting that catchment management, as the basis of the community's response to environmental degradation, should be abandoned. The catchment management approach enjoys widespread community support. It is also the approach suggested by the nature of the environmental problems facing the nation.
- 2.122 As noted, catchment management attempts to integrate social, economic and environmental needs. It provides a forum for communication, co-operation and co-ordination between a number of stakeholders with the

⁹⁶ Tasmanian government, Submission no. 143, p. 2.

aim of ensuring sustainable use. The strengths of catchment management, the Committee was advised, include a clear focus, integrated planning and management, and community ownership.⁹⁷ It is also considered to be a cost-effective approach, that can achieve a number of desirable outcomes.⁹⁸

- 2.123 The problems that beset catchment management at present do not emerge from the approach itself, but rather how it has been put into effect. The Committee's view, then, is that management of Australia's environment by way of its catchment systems should be strengthened, along the lines recommended in this report. If this occurs, this approach will be more cost effective and will reliably and efficiently attain the outcomes needed.
- 2.124 A recurring theme among many of the submissions was that catchment management has the potential to provide significant benefits, and is suitable to address environmental issues that have an impact at the catchment level. The Border Rivers Catchment Management Association considers that while catchments are not the only way to manage natural resources, they are clearly the most practical.⁹⁹
- 2.125 An overwhelming number of submissions support the concept of a catchment management approach in Australia,¹⁰⁰ and the submission from the North West Catchment Management Committee advised the Committee that 'the value of a catchment approach cannot be underestimated'.¹⁰¹ However, a number of witnesses have highlighted concerns about the application of the approach, particularly the need to take into account the social and economic aspects of catchment management, and the suitability of catchment management for all areas of Australia.¹⁰²

97 Mallee Catchment Management Authority, Submission no. 90, p. 4.

98 Australian Water and Wastewater Association, Submission no. 102, p. 2; The Southern Sydney and Sydney Harbour Regional (Catchments) Coordinating Committees, Submission no. 112, p. 2.

99 Border Rivers Catchment Management Association, Submission no. 55, p. 2.

100 For example, Bennett Brook Catchment Group, Submission no. 72, p. 1; Forest Practices Board, Submission no. 25, p. 1; NFF, Submission no. 34, p. 1; Southern Riverina Irrigation Districts Council, Submission no. 10, p. 2.

101 North West Catchment Management Committee, Submission no. 124, p. 2.

102 For example, Bombala council, Submission no. 39, p. 1; NFF, Submission no. 34, p. 2; Snowy Mountains Hydro Electric Authority, Submission no. 23, p. 1.

Environmental issues

- 2.126 A number of submissions argue that catchment management is practical because it is a clearly defined unit that provides important links between land and water resources, and human activity.¹⁰³ It is also a natural, self-contained system occurring at a scale where the development and use of natural resources have a number of interrelated attributes.¹⁰⁴ The North Central Catchment Management Authority considers that a catchment management approach can achieve a number of outcomes that would not be possible through an issue specific approach.¹⁰⁵
- 2.127 However, a number of submissions noted that some aspects of natural resource management, for instance, weeds or feral animals, can encompass several catchments and may need other, more appropriate boundaries.¹⁰⁶ The LWRDC considers that:
- There are also regions of Australia where catchment management is probably not the most appropriate scale for managing natural resources. This is certainly the case in much of the rangelands, where water flows are infrequent and episodic, and planning and management is better related to land systems or sociologically-defined regions.¹⁰⁷
- 2.128 Additionally, AFFA notes that catchment management may not be suitable in areas of Australia which have poorly defined catchments.¹⁰⁸ Also, in some regions of Australia the movements of groundwater may not be the same as surface water movement, and it may not be suitable to manage these areas at the catchment scale.¹⁰⁹

103 For example, Integrated Catchment Assessment and Management (ICAM) centre, Submission no. 85, p. 2.

104 G Brierly, K Fryers and P Batten, Submission no. 130, p. 1.

105 North Central Catchment Management Authority, Submission no. 11, p. 3.

106 For example, EA, Submission no. 141, p. 9; NFF, Submission no. 34, p. 2; LWRDC, Submission no. 66, p. 2.

107 LWRDC, Submission no. 66, p. 2.

108 AFFA, Submission no. 142, p. 7.

109 AFFA, Submission no. 142, p. 7.

- 2.129 Other alternative scales for management include Interim Biogeographic Regionalisation for Australia (IBRA) units, and agro-ecological regions.¹¹⁰ IBRA regions divide Australia into major environmental units, such as vegetation types. Agro-ecological regions divide Australia into areas according to their climate, ecology and agricultural activities.

Social context

- 2.130 While catchment management may be practical on an environment level, grouping people on the same basis may not be effective.¹¹¹ From a practical viewpoint, a region's population size or geography may hamper management strategies, for example, in some sparsely populated areas of Australia catchment management may not be appropriate because of the lack of human resources available to deal with the issues.¹¹² Alternatively, where a catchment is small, it may be better to deal with resource management issues across a number of catchments.¹¹³
- 2.131 Densely populated areas such as Sydney or Melbourne may also require a different management scale. For example, the Sydney region has a number of catchments within the city boundaries. Given the complex nature of city's water supply and sewerage pipes, and the interaction of these pipes across the catchments, it may be more practical to manage Sydney as a whole, rather than at the catchment level.
- 2.132 From a social perspective, Australians tend to group themselves according to factors such as economic, historic and cultural contexts, rather than catchment boundaries.¹¹⁴ For example, in regions where catchments cross state borders,¹¹⁵ communities may have a far greater affinity with people in different catchments but neighbouring towns, rather than communities in the same catchment, but across the state border. It is considered that one of the difficulties with implementing catchment management is that people see themselves primarily as part of a community or a locality rather than of a catchment.¹¹⁶

110 AFFA, Submission no. 142, pp. 7-8.

111 K Cotterell, Submission no. 84, p. 2.

112 NFF, Submission no. 34, p. 5.

113 LWRRDC, Submission no. 66, p. 2.

114 K Cotterell, Submission no. 84, p. 2.

115 See appendix E.

116 Western Catchment Management Committee, Submission no. 57, p. 2.

Community ownership

- 2.133 Successful catchment management may be a result of how much the community owns, and has some control over the issue. In some regions, communities feel as though they are not adequately represented on the committees, and that their views are not taken into account.
- 2.134 The Pastoralists and Graziers Association of Western Australia considers that:
- The best regional approach, with a regional committee in place, will not succeed when the community do not perceive this to be representative of community views or aspirations. This resistance is compounded when the regional committee is consulted by state level committees on aspects of natural resource management without the knowledge of the community they purport to represent.¹¹⁷
- 2.135 While the aim of many catchment management committees is to equally represent all relevant stakeholders, there is a view among some areas of the community that catchment management organisations are elitist and removed from the community.¹¹⁸ For example, the Goulburn Valley Environment Group states that the interests of primary industry dominate catchment management in their region.¹¹⁹ Alternatively, the NSW Farmers Association considers that farmers feel poorly represented on committees, and are alienated by the level of government involvement.¹²⁰
- 2.136 There is also concern about the plethora of committees now in existence.¹²¹ For example, there are currently 127 natural resource management and catchment groups in NSW alone. The large number of committees can make communication extremely difficult, resulting in a lack of co-ordination, and reducing the ability to effectively manage catchments. The committee believes that this is a serious problem, and addresses the issue in more detail in chapter 4.

117 Pastoralists and Graziers Association WA, Submission no. 137, p. 4.

118 Bombala council, Submission no. 39, p. 1.

119 Goulburn Valley Environment Group Inc., Submission no. 27, p. 1.

120 NSW Farmers Association, Submission no. 73, p. 2.

121 NFF, Submission no. 34, p. 5; NSW Farmers Association, Submission no. 73, p. 2.

Administrative boundaries

- 2.137 A major difficulty associated with catchment management is the fact that catchments cross over a number of local and state government boundaries,¹²² creating administrative and political difficulties.¹²³ The Murray Darling Association Inc is aware of this problem, and argues that the catchment management should apply to all parts of a catchment, irrespective of political boundaries.¹²⁴
- 2.138 The Committee recognises the difficulties associated with cross-border issues, and acknowledges that current arrangements are poorly co-ordinated both within and between states. The Committee considers that this is a major impediment to the successful implementation of catchment management in Australia, and discusses the issue at length in the next chapter.

Conclusion

- 2.139 Australia faces a number of serious environmental issues which can be addressed adequately only if all states, territories and the Commonwealth provide long-term support and co-operation to deliver appropriate programs.
- 2.140 The Committee applauds the work of the many community groups who have already achieved valuable outcomes in terms of sustainable catchment management. These groups represent a particular community's concerns in environmentally sustainable catchment management, based on local knowledge and local concerns. It is clear to the Committee from the work of these groups, that the programs that the various levels of government must facilitate will, in the end, be delivered to specific locations and problem areas by local community groups.
- 2.141 On a larger scale, when these groups work together, they create a community of shared interest that, when empowered with information and resources, will be motivated to implement appropriate responses to the environmental problems facing the nation.
- 2.142 Many of these problems result from factors which operate over long time frames and affect vast areas of the Australian continent. Some of the problems are a legacy of past practices, while others are the result of contemporary land use practices. Many occur in both rural and city areas.
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122 Patrick James, Submission no. 125, p. 3.

123 See appendix E.

124 Murray Darling Association Inc., Submission no. 30, p. 3.

As the ACF/NFF discussion paper reported, ‘These stem from a long history of inappropriate land use, of past and present government policies, and of a failure of markets to adequately value soils, water and vegetation.’¹²⁵

- 2.143 Consequently, and as will be seen in the next two chapters, the problems require a variety of substantial financial support for a long period of time and administrative arrangements that are reliable and stable over at least three generations. The Committee notes that the catchment management approach combines three ingredients necessary to address the environmental problems facing the nation:
1. natural geographic divisions that are readily understood and already accepted;
 2. a basis upon which to link communities of similar and shared interests into regions of interest, in order to build a stronger and co-ordinated response to environmental degradation; and
 3. widespread community acceptance of the approach and existing infrastructure.
- 2.144 For these reasons, the Committee concludes that an approach based on the management of catchment systems must underpin the identification of the problems, the administrative arrangements and ultimately the delivery of appropriate remedial action. Not only is this approach based upon natural facts about the landscape, but this approach already enjoys considerable and widespread community support.
- 2.145 The Committee believes that the foundation of successful catchment management programs is community acceptance of any particular catchment management approach that may be adopted. The Committee also recognises that community acceptance and motivation in the delivery of any remedial program must include the economic and social issues relating to catchment management. The Committee believes, then, that the need for community input and ownership of catchment management issues must not be underestimated and that community involvement is required at all stages of program development and delivery. As a result, the proposals recommended in this report are designed to empower communities by providing them with the resources to implement ecologically sustainable catchment management programs.
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125 ACF/NFF, *National Investment in Rural Landscapes*, p. 4.



Improved Administration

Introduction

- 3.1 Australia's catchment systems can be managed in an ecologically sustainable way only if the management structure itself is capable of reliably delivering outcomes that address the problems. For this to occur, five conditions must be met:
- the problems must be identified;
 - solutions must be devised;
 - the implementation mechanisms must be designed around Australia's unique social, legal and constitutional arrangements;
 - the mechanisms must be stable over time so as to ensure reliable delivery; and
 - there must be sufficient landholder, community and political acceptance to bring together the resources and the resolve to implement plans of action.
- 3.2 Practical solutions to the problems of Australia's catchment systems will be devised and implemented only if communities are involved in working out the solutions; and the implementation will be successful only with the active involvement of all stakeholders.
- 3.3 The purpose of this chapter is to set out an administrative blueprint that, the Committee believes, will deliver throughout the Commonwealth ecologically sustainable use of Australia's catchment systems. The

recommendations build on and extend existing institutional arrangements and supplement them only where necessary.

- 3.4 As will be seen, few additional initiatives are required because the legal and social resources exist to provide, with appropriate modification, comprehensive integrated catchment management.
- 3.5 Although the recommendations made may be seen to be overly prescriptive by some, the Committee notes that the initiatives recommended are either required to attain the outcomes the problems warrant and which the community wants, or they enjoy broad community support.
- 3.6 The Committee also notes that there have been many reports identifying ongoing deficiencies in response to land degradation as well as identifying other areas that require action. These reports have generated many proposals to address the environmental problems facing the nation's catchments. There remains, however, significant work to be done to create comprehensive change that will yield the outcomes required. The intent of the Committee in the present report is to draw together some of the themes that have emerged from these other reports and, with its own conclusions, foster public debate and policy development. In this way, the Committee hopes to move the process forward.
- 3.7 Finally, the Committee welcomes the 10 October, 2000 announcement by the Prime Minister, the Hon. John Howard MP, that the Commonwealth will assume a leadership role as part of a National Action Plan to address salinity and water quality problems facing the nation. The National Action Plan was endorsed at the Council of Australian Governments (COAG) meeting held in Canberra on 3 November, 2000.¹
- 3.8 Whilst the Action Plan incorporates a number of the initiatives that this Committee endorses, the evidence before this Committee indicates that much more will need to be done. It is hoped, therefore, that the recommendations made in this report will build upon what is already proposed.

1 Media release: Council of Australian Governments Communique, 3 November, 2000. Downloaded from http://www.pm.gov.au/news/media_releases/2000/media_release531.htm; accessed: 6 November 2000.

The current arrangements

- 3.9 The current approach to catchment management rests upon a mix of Commonwealth, state and territory initiatives. This approach is the result of Australia's federal system and the fact that the respective spheres of responsibility for environmental matters is relatively ill-defined. The current arrangements were described in *Our Vital Resources: National Action Plan for Salinity and Water Quality in Australia*, as 'disjointed Commonwealth-State/Territory frameworks for natural resource management'.²
- 3.10 An underlying cause is that there is no explicit constitutional power to underpin Commonwealth action in respect of environmental matters. When the Commonwealth does act it must rely upon another of the powers available to it under the Constitution. Mr Phillip Toyne and Mr Rick Farley observed that
- Natural resource management has, since Federation, been jealously held as a central domain of the States. They have fiercely resisted interference from the Commonwealth in any matters relating to land and water use. Historically, this has led to many constitutional battles fought over 'interference by Canberra'.³
- 3.11 Governments have been, therefore, reluctant to act and when they have, the legislation has tended to be piecemeal rather than comprehensive.
- 3.12 The result is that there is no national approach to environmental management; there are no nationally agreed principles, priorities, targets or criteria. This in turn produces poor co-ordination between jurisdictions, a plethora of legislation and ill-defined responsibilities for the different levels of government and individuals.
- 3.13 In each state and territory, there are often many pieces of legislation that affect catchment and land management as well as environmental issues. The reason is that legislation has been enacted, sometimes over more than a century, to deal with emerging issues and there has been little imperative to develop consolidated and comprehensive approaches within jurisdictions, that recognise the interconnectedness of natural

2 The Prime Minister, the Hon. John Howard MP, *Our Vital Resources: A National Action Plan for Salinity and Water Quality in Australia*, Canberra, 10 October, 2000, p. 2.

3 R Farley and P Toyne, *The Decade of Landcare: Looking forward - looking backward*, July 2000, p. 13, downloaded from www.tai.org.au/publications/DP30exec.shtm, accessed 11 August 2000.

systems issues. In this regard, the Industry Commission in *A full repairing lease: Inquiry into ecologically sustainable land management*, noted that:

To date, the incorporation of the principles of ecologically sustainable development into government policy has been ad hoc, incomplete and tentative. This inquiry [the Industry Commission's Inquiry into Ecologically Sustainable Land Management] has identified that Australian governments have yet to realise a comprehensive, integrated and far sighted way of promoting ecological sustainability in agriculture, in all its various dimensions.⁴

- 3.14 The Committee notes two recent developments that are likely to improve the present arrangements. The *Environment Protection and Biodiversity Conservation Act 1999*, which came into force on 16 July, 2000, and the Prime Minister's announcement of the National Action Plan.
- 3.15 The EPBC Act significantly increased Commonwealth regulatory capacities in environmental matters. As discussed in Chapter 2, the Act can be triggered if a proposed action will significantly affect any one of six matters of national environmental significance, including world heritage properties, nationally threatened species and communities, and the Commonwealth marine environment. The Act uses bi- and multi- lateral agreements between the Commonwealth and the states and territories, as well as 'benchmarks' as guidelines to attain environmental outcomes. In addition, the Government is currently undertaking consultation with the states and territories to consider the introduction of a 'greenhouse trigger' under the EPBC Act.⁵ Under the proposal, the trigger would apply to actions or developments likely to result in greenhouse gas emissions over 500,000 tonnes of carbon dioxide equivalent in any 12 month period.
- 3.16 However, a report by the Senate Environment, Communications, Information Technology and the Arts References Committee (ECITA) is critical of the fact that only six of 30 matters in the COAG *Heads of Agreement on Commonwealth/State Roles and Responsibilities for the Environment* have been listed as matters of national environmental significance under the Act. The ECITA Committee does not consider the

4 Industry Commission, *A full repairing lease: Inquiry into ecologically sustainable land management*, 27 January 1998, p. 110.

5 Commonwealth discussion paper, 'Possible application of a greenhouse trigger under the Environment Protection and Biodiversity Conservation Act 1999', downloaded from www.environment.gov.au/epbc/consultation/greenhouse.pdf, accessed 2 November 2000.

'matters of national environmental significance' approach as useful, and recommended that it be abandoned.⁶

3.17 The Australian Conservation Foundation has also expressed concern over aspects of the Act. The ACF has stated that its concerns include:⁷

- Too many crucial aspects are proposed to be left to unenforceable guidelines rather than regulation;
- The bilateral agreements lack of legal enforceability; and
- The responsibility Australia has for places listed under World Heritage and Ramsar wetland conventions are not adequately translated into practice under the proposed framework.

3.18 The ACF said that as the Act stood at present:

World Heritage sites like the Great Barrier Reef, Franklin River, Fraser Island and the Daintree Forests are potentially threatened by the approach taken by the Act. Acting only to protect significant impacts on World Heritage values rather than to prevent any likelihood of damage to World Heritage properties, including its values is a dramatic departure from current law and the requirements of the World Heritage Convention.

3.19 The ACF stated that, in its view, the Act should be strengthened in the following ways:

- An accreditation system administered by an independent body such as a Commissioner for Ecologically Sustainable Development is needed to restore public confidence in the environment impact assessment industry.
- A process for independent monitoring and accountability of performance of State governments under the bilateral agreements is necessary. This could also be a role for the Commissioner.
- The benchmarks for assessment processes must include requirements for: consideration of the principles of ESD and cumulative impacts; offences for breach of EIA laws; post approval monitoring; full consideration of alternatives; mandated and sufficient opportunities for public scrutiny and involvement; accreditation system for EIA consultants; open standing for citizens seeking to challenge poor administration of environmental laws, and; public availability of all approvals and conditions.

6 Senate Environment , Communications, Information Technology and the Arts, *Commonwealth Environment Powers*, pp. 6-7.

7 Available at: <http://www.acfonline.org.au/campaigns/epbc/briefings/aug2000.htm>; downloaded 19 October, 2000. An extensive critique of the Act, by ACF President, Mr Peter Garrett, is at: <http://www.acfonline.org.au/campaigns/epbc/discussion/pgspeech.htm>.

- The Commonwealth must not accredit any state assessment system which relies on mere administrative guidelines rather than laws to meet any of the Commonwealth benchmarks.

3.20 The Committee is not in a position to reach a conclusion about the concerns raised by the ACF, as it is outside the terms of reference of this inquiry, the Committee's deliberations, and the evidence taken. The extent of the powers conferred by the Act and how they may be used, is still unclear. A period of time will have to elapse before the success of the Act or lack of it is revealed. However, the Committee does believe that the Act represents a significant step in relation to the ecologically sustainable use of Australia's catchment systems. The Act should be closely monitored and, if amendments to improve its operation are called for, then they should be made. For this reason, the Committee proposes to continue to monitor the operation of the Act and, if appropriate at some future date, make such recommendations as appear appropriate.

Recent Proposals: The National Action Plan

3.21 The National Action Plan released by the Prime Minister on 10 October, 2000 and endorsed by COAG on 3 November, 2000 will address salinity and water quality. The National Action Plan builds on the work of the NHT, the Murray-Darling Basin Commission, state/territory strategies and the COAG Water Agreement. The major elements of the National Action Plan are:

- targets and standards for natural resource management, particularly for water quality and salinity, with the States and Territories, either bilaterally or multilaterally, as appropriate. The targets and standards should include salinity, water quality and associated water flows, and stream and terrestrial biodiversity based on good science and economics;
- integrated catchment/regional management plans developed by the community, in all highly affected catchments/regions where immediate action will result in substantial progress towards meeting State/Territories and basin wide targets to reverse the spread of dryland salinity and improve water quality. The Commonwealth and States/Territories will need to agree on targets and outcomes for each integrated catchment/region management plan, in partnership with the community, and accredit each plan for its strategic content, proposed targets and outcomes, accountability, performance monitoring and reporting;
- capacity building for communities and landholders to assist them to develop and implement integrated catchment/region plans, together with the provision of technical and scientific support and engineering innovations;

- an improved governance framework to secure the Commonwealth-State/Territory investments and community action in the long term, including property rights, pricing, and regulatory reforms for water and land use;
 - clearly articulated roles for the Commonwealth, State/Territory and community to replace the current disjointed Commonwealth-State/Territory frameworks for natural resource management. This would provide an effective, integrated and coherent framework to deliver and monitor implementation of the Action Plan; and
 - a public communication program to support widespread understanding of all aspects of the Action Plan so as to promote behavioural change and community support.⁸
- 3.22 The central innovation of the National Action Plan is the establishment of a single, national ministerial council, involving all jurisdictions. Its functions would be to agree to targets and standards, and establish arrangements for monitoring progress in achieving them.
- 3.23 The National Action Plan will form the basis for the development of an Inter-governmental Agreement which was to be finalised by the end December 2000. The Agreement will be signed by the Council out of session and will provide the foundation for developing detailed agreements with the States and Territories to implement the Action Plan.
- 3.24 In order to commence action as soon as possible, it is proposed under the National Action Plan that initially the twenty catchments most highly-affected by dryland salinity be addressed. The Committee agrees with this approach.
- 3.25 The National Action Plan involves \$700 million expenditure by Commonwealth over seven years. The agreed principles for funding the National Action Plan, include:
- The Commonwealth's financial contribution of \$700 million for regional implementation of the Action Plan will be matched by new State/Territory financial contributions. In total, the Commonwealth, state and territory governments will allocate \$1.4 billion in additional funds to this program over the next seven years.
 - COAG agreed that the new financial contributions from the states or territories include funding attached to measures announced since the budgets of respective jurisdictions were passed, provided that money is redirected to joint funding under the Action Plan.
 - Commonwealth contributions will be available to a state or territory once agreement is reached on the implementation of the whole package of measures between the Commonwealth and the jurisdiction.

8 The Prime Minister, the Hon. John Howard MP, *Our Vital Resources*, pp. 1-2.

- Participating communities will also be expected to make appropriate contributions in addition to the above.
- 3.26 Agreement was also reached at COAG that compensation to assist landholders where their property rights are lost will need to be addressed when catchment plans are developed. The Commonwealth indicated that it is prepared to consider making an additional contribution to compensate for the loss of property rights as a result of the adoption and implementation of a catchment management plan. This contribution is separate from the \$700 million provided by the Commonwealth that will be used to implement the Action Plan.
- 3.27 COAG also agreed that joint implementation of the outcomes of the national overarching agreement and access to Commonwealth funding will commence as each state or territory becomes a signatory to the agreement and a partnership between the Commonwealth and each state or territory is agreed.
- 3.28 In its June 1999 report, *Review of the Department of the Environment Annual Report for 1997 – 1998* the Committee recommended that existing data from whole of government resources and expertise should be collated to compile a state of the environment reporting framework. The Committee also recommended that ‘State of the environment reporting should provide a basis for future decision-making for all environment policies and programs’.⁹ The Committee reaffirms these recommendations. The Committee believes that in order to maintain an effective foundation for decision making, it should be a condition of funding that the states and territories agree to a national reporting framework, the implementation of national targets and to maintain and extend their existing programs and efforts, especially in respect of the collection, collation and sharing of data between jurisdictions and agencies.
- 3.29 The National Action Plan and COAG agreement represents a large and welcome movement in policy. It demonstrates Commonwealth leadership in this area. It also indicates that Commonwealth leadership is necessary if appropriate and successful multi-jurisdictional initiatives in this area are to be developed and implemented.

9 House of Representatives Standing Committee on Environment and Heritage, *Review of the Department of the Environment Annual Report for 1997 – 1998*, Recommendation 2, p. 24.

Weakness of the current arrangements

- 3.30 While the existing arrangements have produced some notable local successes, at a whole of catchment and national scale they contain fundamental weaknesses. These have led, overall, to a poor policy response and resulting programs that have not been as effective as was possible, given the resources available. The Committee acknowledges that many of these weaknesses will be addressed if the Action Plan is implemented. However, the Committee believes that while the action plan is an important beginning, it can be strengthened still further and its goals will more likely be attained if some additional initiatives are implemented.

Constitutionally uncertain: The constitutional powers and options for the Commonwealth

- 3.31 Primary regulatory responsibility for land management issues is a matter of dispute. The generally accepted and traditional view is that the basic constitutional powers and responsibilities for land and natural resource management reside with the states.¹⁰ The Commonwealth can influence the actions of the states by way of powers that it possess; for example, the external affairs powers, the corporations powers and responsibilities for trade and commerce.
- 3.32 This traditional view has been described by the Senate Environment, Communications, Information Technology and the Arts References Committee, as ‘more imaginary than real; more the result of uncertainty or a lack of political will than a real absence of power’.¹¹ This view would seem to be supported by a judgement of the High Court, regarding early Commonwealth environment legislation, which found that although the Constitution of the Commonwealth did not contain a specific legislative power enabling the Parliament of the Commonwealth to legislate in respect of environmental matters, other powers could be used to regulate environmental matters.
- 3.33 Moreover, ECITA noted a number of landmark decisions of the High Court, and concluded that the ‘traditional assumption of general, if not plenary, state authority over the environment has been discredited’ and that the Commonwealth has ‘the power to regulate, including by

10 For example, see the Industry Commission’s, *A full repairing lease*: p. 81.

11 Senate Environment, Communications, Information Technology and the Arts References Committee, *Commonwealth Environment Powers*, May, 1999, p. ix.

legislation, most, if not all, matters of major environmental significance anywhere within the territory of Australia'.¹²

- 3.34 While noting these conclusions, the Committee believes the matter is not sufficiently clear to make a definitive observation. It is likely that Commonwealth power in respect of the environment will have to be argued and decided on a case by case basis unless some form of constitutional change occurs.
- 3.35 What is clear is that the uncertain boundary between Commonwealth and state responsibilities has led to the present disjointed, piecemeal, ad hoc approach. Moreover, uncertainty over its area of responsibility has prevented more decisive action by the Commonwealth and the development of national, consistent policies. It has also prevented the development of the most appropriate catchment management policies within states and territories.
- 3.36 There are other nations facing substantial environmental problems, for example the United States, that share a similar federal structure to that of the Commonwealth. They too face uncertainty arising from the fluid and ill-defined powers of the different levels of government and the vague division of responsibilities provided for in their constitutional arrangements. The Committee believes that when responding to the recommendations in this report the approach adopted in those other jurisdictions should be examined to determine whether a suitably adapted approach from those jurisdictions may be useful here. The Committee wishes to note that overseas approaches to conservation in respect to private land will be examined further in its inquiry into public good conservation – impact of environmental measures imposed on landholders.

Vulnerable to political considerations

- 3.37 In developing any national public policy, it is a fact of life that at any one time in Australia there will always be at least one jurisdiction within 12 months of an election.
- 3.38 This confers a great protection upon the Australian community by reminding legislators of their insecure tenure and accountability to their respective electorates. However, unless a bi-partisan approach is adopted, the electoral cycle can delay the development of public policy and extend the time taken for the implementation of policies within a jurisdiction.

12 Senate Environment, Communications, Information Technology and the Arts References Committee, *Commonwealth Environment Powers*, pp. 9-10.

More widely, the combined effect of the national, state, territory and local government electoral cycle can, unless the major parties reach a broad consensus, also delay the development of public policy and extend the time taken for the implementation of policies where levels of government must reach agreement. It makes working for agreements between the various jurisdictions time consuming and slow. One of the major difficulties it produces is that legislators face well-organised special interest groups whose lobbying may undermine the development of appropriate public policy.

3.39 The result is that political parties and other organisations may seek to exploit the genuine concern felt in all sectors of the community over the ecologically sustainable use of Australia's catchment systems. It may happen that policies and programs are promised that, while being electorally advantageous are environmentally ill advised.

3.40 Evidence to this effect was provided by Professor Russell Mein, the Director of the Department of Civil Engineering, Cooperative Research Centres for Catchment Hydrology, Monash University. When asked whether the disagreement would be resolved politically, between those who wished to control salinity and those who thought it was more important to have access to large quantities of water, Professor Mein testified:

Absolutely. I can recall my very first job which was in the Murrumbidgee Irrigation Area, where we were looking at the new area at Colleambally. The question was: do we allow rice to be grown there? The scientific view was that rice had been a problem in the area. For the Colleambally irrigation areas, the political decision was to allow rice for the first six years just as a cash crop to start them up; then it was made permanent. Now the watertables have come right up to the surface. People are saying, 'What is the solution to this?' The solution was known before they even opened up those areas and was presented and the department put that point of view. However, the political decision was to let the rice grow. The answer is that it will be a political decision and it will be a hard decision.¹³

3.41 Mr Phillip Toyne and Mr Rick Farley, discussed the way that the funding process could become the subject of allegations of favouritism. They reported that the method of distributing the resources of the NHT gave rise to the easily made criticism, and a perception, that the funds had been used 'for "political" purposes', even though the distribution of funds for

projects administered by the former government, was essentially the same. They also reported the claim that the present and the former Government vetted appointments to advisory bodies to ensure that supporters were appointed and critics excluded.¹⁴ Mr Toyne and Mr Farley observed that:

At the moment, the Commonwealth Ministers for the Environment and Agriculture make final decisions about funding for projects based on recommendations from State and Regional Assessment Panels. Inevitably, they are open to charges of political convenience about the way funds are allocated...¹⁵

- 3.42 NHT funding is often dependent upon the recipient of the funding entering into an agreement to reach desired goals or outcomes. However, the Committee is of the view that these agreements are not always sufficiently rigorous, strictly enforced or closely monitored. An example is the failure to secure tree clearance controls, in Queensland, prior to National Vegetation Initiative funds being made available. As a result, the desired outcomes may not be attained. The Committee believes that because of this, a large portion of the NHT funding has not been used to best effect.
- 3.43 It is important, in the Committee's view, that a bi-partisan approach be developed and maintained. The Committee believes that the easy allegations and mis-perceptions are best dealt with through transparent processes and providing the community with reliable information about the processes, the institutions, and the best way to address the environmental problems that face the nation. In short, the initiatives that are adopted should seek, as far as possible, to de-politicise the development of policies and the strengthen institutions and trust in them through community involvement at all levels.

A lack of a comprehensive understanding of the problems

- 3.44 We must have sufficient understanding of the problems, their extent and useful remedies if we are to implement the ecologically sustainable use of Australia's catchment systems. The importance of reliable information and the effect of a failure to collect it are illustrated by Ms Rosalyn Bell and Dr Stephen Beare. Writing about the use of salinity targets in the Murray-Darling Basin, they observed that:

14 R Farley and P Toyne, *The Decade of Landcare*, p. 12 – 13.

15 R Farley and P Toyne, *The Decade of Landcare*, p. 12.

...with a lack of information on the physical processes of salinisation, it cannot be taken on principle that the introduction of a policy instrument will lead to net benefits.

...

Market based instruments can be effective in ensuring that any mandated salinity mitigation actions, such as the introduction of agroforestry, are undertaken by those who could do so at least cost. However, market participants may face prohibitively high costs of acquiring information and trade may not lead to an efficient outcome. Policy makers are also unlikely to have the information required to efficiently set charges, offer subsidies or establish regulations.¹⁶

...

It is likely that differences in the impact of groundwater recharge and salinity discharge throughout the basin will require regionally differentiated policy instruments. This can greatly increase the information requirements of policy makers. Effectively defining the obligations of landholders who trade permits or receive subsidies depends on an understanding of the controllable processes that affect groundwater recharge and the costs of saline discharge into rivers and the landscape.

In the longer term, the ability to design effective policy options may depend on the extent of understanding the biophysical problem and its economic implications. As understanding improves, it is likely that the design of the best policy option will change. It is important to retain flexibility in policy design to minimise the costs associated with adapting policy to current circumstances.¹⁷

- 3.45 The lack of reliable information is, an ongoing problem all levels, from policy makers to citizens who will need to be motivated to deliver program responses to specific areas. The following newspaper report is indicative:

One large farmer in baggy shorts and towelling hat sought out the media to stress how cotton saved Bourke following the demise in wool prices and the near extinction of the township.

16 'Salinity Targets in the Murray Darling Basin', *Australian Commodities* 7 (2000), p. 352.

17 'Salinity Targets in the Murray Darling Basin', p. 356.

Cotton growers should be able to flood irrigate from the nearby Darling River, he said.

He was vaguely aware of the problems being created downstream in South Australia but added it didn't matter if the Murray Mouth blocked up because of lack of flow.¹⁸

3.46 The Committee wishes to stress that, from the evidence it has received, it is convinced that there is enough existing information to formulate policies and strategies. The Committee, however, is aware that the dissemination of reliable information throughout government, industry and local communities at present can be very poor.

3.47 In its 1998 report, the Industry Commission observed that:

the development of environmental indicators, which will provide measures of environmental health and/or the sustainability of natural resource management practices, is hampered by the lack of relevant information on the state of the environment. ...most existing reporting [on the state of the environment] does not provide information in sufficient detail for management decisions at the regional or local level.¹⁹

3.48 It seems that little has changed. Dr Wendy Craik, NFF executive director, told the Committee that in her view translating research results and providing information 'out to people on the ground is probably one of the areas that we are generally woeful at in this country'.²⁰

3.49 The Committee also notes the observation in *Managing Natural Resources in Rural Australia for a Sustainable Future*, that:

Ready access to relevant data and information—economic, environmental and social—is essential to the development of sound policies and programs, innovative farming systems and better management approaches. It also helps to guide property management, regional planning and structural adjustment decisions.

...

At present there are significant gaps in data and information on the environmental, social and economic aspects of natural resource management at all decision-making levels—farm, local and national, and particularly the catchment and regional levels.

18 P Coorey, 'Sold up the river', *The Adelaide Advertiser*, 24 July, 2000, p. 19.

19 Industry Commission, *A full repairing lease*, p. 111.

20 *Transcript of evidence*, p. 305.

Monitoring the state of our natural resources and the impacts of changing production practices means that data need to be collected regularly and consistently. We need robust and affordable systems for sharing data at the national, State and Territory, regional and farm levels.²¹

- 3.50 The Committee agrees that ongoing data collection and analysis is required to ensure that policies and programs remain appropriate to the circumstances of a particular catchment region. It is also clear that the ineffective collection and use of data has limited the success of current catchment management programs. Apart from this reason, however, there also appears to be limited attempts in this case to test Australian environmental standards against international practices. For example, Mr Peter Garrett, President of the Australian Conservation Foundation, stated in a speech to the National Environment Defender's Office that state governments and industry groups had worked to reduce the number of chemicals listed as toxic and environmentally hazardous from 120 to 36, as compared to 650 listed as such in the United States.²²
- 3.51 The point that this example makes is that policy makers should engage in ongoing comparisons of their proposals against international practice and ensure that they are capable of explaining discrepancies.
- 3.52 From the evidence available to it, the Committee concludes that while there is an expanding body of information in this area, it is often inaccessible, patchy, uncoordinated and uncollated. Consequently, policy makers and program designers cannot use the information to the best effect or in the most efficient manner. The Committee also considers that data and information collection, analysis and collation should be maintained to ensure that the best possible information is always available upon which to formulate the most appropriate policies and programs.
- 3.53 It must be noted, however, that this conclusion does not justify inaction on the grounds that there is not enough information to base sound policy. The Committee rejects such calls for inaction.
- 3.54 While complete information upon which to base a total and final solution is not and will never be available, there is sufficient information available to devise and implement policies and programs that we know, with a high level of certainty, will address the most pressing problems.

21 AFFA, *Managing Natural Resources: A discussion paper for developing a national policy*, pp. 80-81.

22 'Commonwealth Environment Laws: get in-depth', downloaded from www.acfonline.org.au/campaigns/epbc/discussion/pgspeech.htm, accessed 3 October 2000.

- 3.55 No doubt, as knowledge advances, new techniques will be devised and different policies will, in time, become appropriate. For the time being, however, and until knowledge advances, we must make a start with the tools and techniques at our disposal. The Committee has received enough evidence for it to conclude that there is sufficient information for policy makers to know what needs to be done for an appropriate start to be made.

Property rights issues

- 3.56 Evidence from agriculturalists and their lobby groups indicated that the clarification of property rights and the exercise of perceived property rights, lies at the heart of the catchment management debate. There is not, at present, a comprehensive understanding of the issue. A clear definition of property rights allows landholders and the wider community to gain an understanding of what land practices are or are not appropriate, what individuals are allowed to undertake on their property, who is ultimately responsible for these practices, and under what circumstances compensation should be provided. The current lack of clearly defined property rights has, therefore, a number of implications for both landholders and for the wider community.
- 3.57 The issue is very complex, and depends on several dynamic factors, such as current community attitudes and current scientific knowledge. For this reason, there is often a reluctance to get involved in the issue, and it is often relegated to the 'too-hard' basket.
- 3.58 Importantly, some landholders' assumptions concerning their property rights may make them reluctant to invest. Given that the dangers of excessive land clearing are now widely recognised, legislation to restrict land clearing practices has been implemented in a number of states and territories. In some cases, these restrictions have prevented landholders using the land they way they intended, and they have suffered a loss of future income as a result. For example, some people intended to reserve trees on their property in order to provide themselves with a self funded retirement. A number of these areas have now been reserved through legislation and a number of landholders have lost investments.
- 3.59 The concern about certainty of property rights also includes certainty of conservation responsibilities. Dr Wendy Craik considered that:
- ... it is true that farmers are concerned about having conservation responsibilities placed on them without also having certainty in many of their property rights and without having conservation for

removal of property rights or even a loss of future potential production.²³

- 3.60 Dr Craik also noted that attitudes towards property rights are also important:

You would have to say that, in many cases, land-holders in Australia were given land and basically had to develop it under the conditions under which they were given that land. They were encouraged to develop it, their ability to develop it was not fettered in any way, and that was encouraged and fostered by governments. That has led to a particular belief system which we may or may not think is right today, because values have changed.²⁴

- 3.61 The property rights problem should not be overstated. The Committee notes that there are many landholders who do not feel that their property rights are threatened by catchment management programs. These landholders are focusing on addressing the land use and management problems that confront them and working within the existing structures. Nevertheless, it would be useful for all landholders if the issues of property rights is clarified.
- 3.62 The issue of property rights will be discussed more fully by the Committee in its report on its Inquiry into Public Good Conservation – Impact of Environmental Measures Imposed on Landholders.

Poor access to information and skills

- 3.63 Evidence available to the Committee indicated that access to accurate information concerning the cause of problems and useful solutions to them, is essential if effective programs are to be developed and delivered. Evidence also indicated that ready access was often not available, thereby making the formulation of appropriate programs difficult.
- 3.64 Information is required for a number of different but related purposes. First, it is the basis upon which to identify problems and problems areas. Second, it is essential in developing effective corrective strategies. Third, it is required in order to motivate the community, policy makers and legislators to act.
- 3.65 The lack of access to information has been an ongoing problem in this area. In 1998, the Industry Commission reported that,

23 Inquiry into public good conservation, *Transcript of Evidence*, p. 224.

24 Inquiry into public good conservation, *Transcript of Evidence*, p. 226.

...those making decisions about the ecologically sustainable management of land and associated resources are facing significant difficulties obtaining the necessary data. Sometimes the data does not exist, at other times it may exist, but be incomplete, or not in a useable, or easily accessible form.²⁵

- 3.66 The Committee has found that there has been significant research undertaken in a number of environmental areas. However in a private meeting with the Committee, the National Land and Water Resources Audit (NLMRA) pointed out that much of this information is collected and then not used.
- 3.67 The NLWRA also indicated that obtaining access to environmental data held by the states can be problematic. It was pointed out to the Committee that state agencies do not foster a culture of information sharing, and often demand high prices for access to data. The NLWRA, who have been involved in a project which requires access to information held by the states, found that it took them 18 months to obtain information held by some states.
- 3.68 In addition, the Committee itself experienced the difficulties associated with gaining access to environmental information. While attempting to source maps of catchment areas, the Committee contacted a number of government agencies in each state. The Committee was often met with unhelpful responses, agencies with little knowledge of the issues even within natural resource departments, and, in a number of states, serious communication difficulties both within and between relevant departments. The Committee also found that the price that many agencies charged for what should be essential and basic information was excessively high.
- 3.69 The Committee was advised by the NLWRA that the lack of coordination between different departments and natural resource management groups results in the duplication of data collection. As well, owing to the lack of communication between agencies and other groups, information may not be not collected in a uniform manner, therefore decreasing the ability to apply the data at a national level.
- 3.70 The Committee recognises that the Commonwealth government is attempting to address this problem through programs such as the Australian Rivers project (AusRivas), which puts forward national guidelines in an attempt to standardise data collection approaches.

- 3.71 However, as a result of the uncoordinated and uncooperative approach taken by some state agencies to the collection and sharing of environmental data, it can often be difficult to obtain data and apply it at a local, regional or national level. The development of appropriate and effective policies is therefore thwarted.
- 3.72 Evidence available to the Committee indicated that there is a considerable problem transmitting information, skills and motivation into communities and down to the level of actual program delivery. In this respect, evidence available to the Committee indicated that the loss of agricultural extension officers, the information and expertise that they provided, has severely affected landholders' access to information and their options for action.
- 3.73 The face to face discussions, such as provided by extension officers, were seen by many as a vital link in getting scientific information to the community, where it could be used on a practical level.²⁶
- 3.74 Extension officers visited farmers on their properties and provided up-to-date information on the latest land use practices. Many of these officers came from the local area, knew the local people, understood the issues and were trusted by the farming community. They also provided less formal, but still fundamental information relevant to the local area, such as who was currently using which techniques, and what was the most effective.
- 3.75 Extension officers fostered trust in the programs offered and the agencies concerned. The importance of trust to developing programs for the ecologically sustainable use of Australia's catchment systems cannot be overestimated. Trust is vital in developing community awareness of the environmental problems facing catchment areas and in motivating communities and individuals to change their land use practices.
- 3.76 Developing and implementing policies and programs for the ecologically sustainable use of Australia's catchment systems faces a high level of suspicion about government and government sponsored information. The Committee believes that extension officers have an important role to play in fostering trust in information, institutions and programs.
- 3.77 The loss of extension officers is part of a general problem. Many landholders today do not have that direct access to information. Ms Anwen Lovett of the National Farmers' Federation testified that:

The loss of state extension officers is one we hear a lot about NHT facilitators can achieve certain things ... There are land-holders

26 AFFA, *Steering Committee report to Australian governments on the public response to 'Managing Natural Resource'*.

who say, 'Okay, I've been involved in Landcare for 10 years; I'm aware of these issues on my property; I don't have access to the technical expertise to help me with my farm plan, to help me outline what work I need to undertake over the next five, 10, 20 years'. I'm hearing that quite a lot now – that they just do not have access to people in their region, on the ground, who can advise them.²⁷

- 3.78 On the same point, the Upper Barwon Landcare Network advised the Committee that, 'As landowners, we are generally keen to amend the mistakes of the past, but we need the guidance and assistance of professional and public resources to achieve common goals for catchment care and protection'.²⁸
- 3.79 Ready access to information poses a serious threat to the delivery of effective catchment programs. The Upper Barwon Landcare Network advised the Committee that:
- Experience shows that landowners keen to ameliorate an environmental problem on their land will sometimes adopt ineffective practices, for the want of access to better information. Information extension is currently a critical short-coming, partly because funding tends to be allocated for on-ground works in preference to information dispersal. Actions to make practical information accessible to landowners would be a useful priority right now.²⁹
- 3.80 Traditionally, one of the most effective conduits of information and expertise to landholders has been the agricultural extension or field officer. The Committee notes from its own observations and evidence provided to it, that the states and territories have diminished or, in some cases, entirely discontinued this service. The Committee is also aware that the loss of extension or field officers has been part of a process that has involved a lack of secure funding to build and transmit a knowledge base. Such policies are short-sighted. The result has been a lack of continuity of information and expertise, and a loss of corporate knowledge, subsequently contributing to the development of ill-advised short-term goals rather than necessary long-term programs.
- 3.81 Moreover, the Committee is concerned that the current short term funding arrangement, where many groups have to reapply for funding on a regular basis, has created a lack of continuity within institutions, leading
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27 Inquiry into public good conservation, *Transcript of Evidence*, pp. 238-239.

28 Upper Barwon Landcare Network, Submission no. 28, p. 1.

29 Upper Barwon Landcare Network, Submission no. 28, p. 3.

to an overall reduction in corporate knowledge of environmental management. The Committee also considers that by creating a lack of job security and stability, the current short term outlook has led to a difficulty in retaining experienced staff members with valuable knowledge of local conditions.

Cost shifting

3.82 'Cost shifting' refers to the practice of removing funding from a program or other activity when another source of funding for that program or activity becomes available. Local and state governments engage in this practice and, in so doing, shift the cost of a program usually onto the Commonwealth. As a result, programs that the Commonwealth has sought to strengthen or enhance often find that their funding has not increased at all and the hoped for increase in program quality or level does not occur.

3.83 Mr Phillip Toyne and Mr Rick Farley, in their paper, *The Decade of Landcare*, provided this example:

Landcare also made it easier for State Governments to withdraw from regional Australia and from their traditional role of providing agricultural support. The Federal Government has provided funds for positions such as Landcare Coordinators, allowing State funded agricultural extension officers to be withdrawn. The Commonwealth agriculture department now funds well over 2000 full time equivalent positions (over 3400 individuals) to work on Landcare. The States have used this opportunity to 'cost shift' and to substitute federal money and positions for State resources.³⁰

3.84 At present, there is no means by which cost shifting can be prevented or deterred. The Committee notes, however, that the National Action Plan would address this to some extent. A state or territory that agreed to implement the National Action Plan as a package would receive funding from the Commonwealth. Presumably, such an agreement would involve a clear financial commitment on the part of the state or territory, effectively 'locking in' funding. This would reduce the opportunity to remove funding and shift the cost to the Commonwealth.³¹

30 R Farley and P Toyne, p. 13.

31 The Committee notes the recent action by the Minister for Agriculture, Fisheries and Forestry, the Hon. Warren Truss MP, announcing that the Commonwealth is cracking down on cost shifting in the media release 'NSW and QLD governments shift environment funds', 18 October 2000.

- 3.85 The Committee is concerned that the National Action Plan may be implemented in a manner similar to that of the NHT. In the Committee's view, the NHT is not adequately supported by effective partnership agreements that are based upon 'fair dinkum' commitments by partners to maintain effort, levels of resourcing and the full implementation of the range of actions required to address the problems facing catchments. Nor do the partnership agreements contain credible and effective enforcement measures for failures to honour the agreements reached. The Committee considers that the National Action Plan should be seen as an opportunity to effectively implement agreements with the states and territories. The Committee also believes that conditions should be strictly monitored and enforced. The Committee considers that if the requirements are not met, funding should be removed and only be reinstated upon compliance with the agreement.
- 3.86 The Committee believes that this is an important development in the funding of environmental programs which should be retained in all future agreements concerning environmental programs between the Commonwealth and the states and territories.

Reactive, not pro-active

- 3.87 The Committee has observed that current environmental policies are generally reactive, not proactive. That is, policies have been developed to respond to specific issues or circumstances, rather than be part of a long-term planning process. The Committee believes that any approach taken must be consider long term effects, and be implemented within a 'whole-of-environment' context that also takes into account social and economic considerations.
- 3.88 Furthermore, the Committee is aware that some sections of the community argue against change in current policy arrangements because of a lack of scientific information creates uncertainty.³² The Committee believes that this leads to a rigid, inflexible management approach.
- 3.89 Dr Wendy Craik from the NFF advised the Committee that while we do not have complete information, there was sufficient information available upon which to base policies and programs:

I suppose, like all issues, we can always learn more. But I believe our view is that it is about time we started tackling some of these.

32 For example, see B Williams, 'Who put the 'con' in the conservation debate', 2 November 2000. Evidence was also presented to the Committee in a private meeting with the Land and Water Resources Research and Development Corporation.

We actually need to try some things out; if they do not work, then we need to make some adjustments. I think there is probably enough knowledge around for some areas to do a few trial runs on some of these things and actually do some practical experiments. Having been trained as a scientist, I know that it is very easy to say, 'Oh yes, that was interesting, but I really need to know.' I think it is about time we bit the bullet, and you might get another five per cent of information, but I think we have probably got enough to have a go.³³

- 3.90 The Committee agrees. It does not consider lack of information to be an acceptable reason for not implementing changes to administrative structures, and recognises that management decisions must be made using the best possible advice at the time.
- 3.91 The Centre for Environmental Applied Hydrology has argued for an adaptive approach to catchment management, and their submission advised that:

This requires a management system for catchments which is capable of adapting to changing conditions, pluralistic in philosophy and pragmatic in application. This is a considerable departure from the way in which we currently management catchments in Australia for it requires decision-makers and researchers to embrace uncertainty and to consider policy-making as an *experiment* process, rather than a definitive exercise in which all decisions must be based on certain information and therefore, delayed until greater certainty is achieved through more research.³⁴

No co-ordinated national approach

- 3.92 The National Farmers Federation advised the Committee that:
- Ecological land water and vegetation systems are interdependent and do not recognise state, local government and individual farm boundaries. If the systems are to be managed as an integrated entity, management must at least occur at the catchment scale.³⁵
- 3.93 Since catchments spread over local government, regional and state boundaries, co-ordination is necessary between the competent authorities to ensure a consistent approach.

33 *Transcript of Evidence*, p. 304.

34 Centre for Environmental Applied Hydrology, Submission no. 87, p. 4.

35 NFF, Submission 34, p. 2.

3.94 At present, catchment management is largely regulated by individual states. As a result, legislation has focused, for the most part, on the needs of individual states, rather than what is required for responsible ecologically sustainable catchment management through an entire catchment system. The practical effect is that catchment management has become subordinated to state interests. The Murray-Darling Basin Association advised the Committee that:

[the] Association is concerned that particularly on the state border of the River Murray between New South Wales and Victoria there are situations where the states constitutional rights have reduced the effectiveness of catchment management.

Areas where this has from time to time been a problem include management of the Barmah/Millewa Forest where progress in adopting new management practices have been frustrated by state parochialism.

...

... the tools of Integrated Catchment Management should apply to all parts of a catchment irrespective of political boundaries either state or local.³⁶

3.95 This is a pattern repeated not only between states that adjoin each other, but also local government areas. Good work in one area is undone by a failure to act appropriately and in co-ordination in another.

3.96 The major problem is that the decisions affecting the use of resources in one geographical location will have effects in another and possibly not for a number of years into the future. A close linkage between cause and effect may well be difficult to perceive because there is often a time delay, and because an environmental problem found in one area may be caused by land use practices hundreds of kilometres away. As a result, the benefits of altering land use and improved catchment management in one area may not be immediately apparent to the residents of that area, and they may see no point in altering their land use practices.

3.97 Moreover, the benefits may not accrue to the residents of a particular area, even though the cost of improved catchment management does. They have little motivation to participate in programs that aim to promote the ecologically sustainable use of Australia's catchment systems.

36 Murray Darling Association, Submission 30, p. 2.

- 3.98 However, even when a number of residents do implement ecologically sustainable catchment management, other residents may not be motivated to participate. As a result, residents who do not participate will be in a position to obtain the benefits of participation without any of the associated burdens, effectively ‘free-riding’ on the efforts of others.
- 3.99 Two results generally flow from this. First, even if those who do choose to participate remain within a program, the overall effectiveness of the program will be diminished more than would be the case if all residents participated. The efforts at more effective catchment management will be undermined.
- 3.100 Second, over time, the number of participants will diminish when those who are shouldering the burdens of participation realise that their efforts are being diminished by the ‘free-riders’ and that, in effect, they are supporting the environmentally irresponsible practices of the free-riders.
- 3.101 The Committee concludes that for these reasons, any catchment management scheme should be an ‘all-in’ scheme: no one person, community or state should be permitted to free ride.
- 3.102 The Committee notes that there has been a strong move towards the development of regional plans.³⁷ There appears to be relatively little co-ordination between regions. This can lead to the efforts in one region being undone by the activities in another.
- 3.103 Such problems could be alleviated through better inter-regional and national co-ordination. The most effective means to attain this is through the development of national principles and national targets.
- 3.104 At present, there are no national principles or targets. The ACF wrote, in response to *Managing Natural Resources in Rural Australia for a Sustainable Future: A discussion paper for developing a national policy*, that:
- Australia lacks clear targets to aim for. Despite numerous strategies and policies from the national scale down to individual property plans, no-one has yet articulated what we are trying to achieve, why we are trying to achieve it, and when we must aim to achieve it by.³⁸
- 3.105 As a result of ill-defined objectives and outcomes, state based programs and those provided nationally often fail to live up to their potential or

37 Noted also in AFFA, *Managing Natural Resources*, p. 35.

38 ACF, ‘Submission in response to the discussion paper, *Managing Natural Resources*, p. 1.

hoped-for goals.³⁹ Such ill-defined objectives and outcomes also undermine transparency and accountability. This prevents community pressure being brought to bear on participants, administrators and ultimately, legislators, in such a way as to engender change and reliable attainment of appropriate results. This was noted in *Our Vital Resources: National Action Plan for Salinity and Water Quality in Australia*, when it was stated that a '...lack of agreed specific on-the-ground outcomes and targets for water quality, salinity and other natural resource management attributes has been a major barrier to guaranteeing a return to the Commonwealth's investment.'⁴⁰

Un-supportive administrative arrangements

3.106 Each state and territory has a variety of agencies, action groups and committees involved in natural resource management. The relationships between them can be extremely complicated and confusing. For example, there are currently 127 natural resource management and catchment groups in NSW alone. Many of these do not operate in conjunction with other groups in their area, resulting in a poorly coordinated management approach.

3.107 The *Interim Report* of the South Australia House of Select Committee on the Murray River highlighted this problem:

There are many organisations involved to varying degrees in the management and use of the natural resources of the South Australian portion of the Murray-Darling Basin. Evidence presented to the Committee has highlighted the current level of bureaucracy within the SA Murray-Darling Basin. The Committee has heard that the roles and responsibilities of each level is unclear and that there is widespread confusion amongst groups and the wider community.

The Committee is concerned that this situation is leading to duplication of effort, poor co-ordination and integration of activities within the SA Murray Darling Basin, and is thus giving rise to frustration amongst the community and the wasting of valuable financial and human resources.⁴¹

39 This point was also made about the NHT by the Industry Commission. See, *A full repairing lease*, p. 117.

40 The Prime Minister, the Hon John Howard MP, *Our Vital Resources*, p. 2.

41 *Interim Report of the Select Committee on the Murray River*, South Australia House of Assembly, July, 2000, p. 24. Available at: http://www.parliament.sa.gov.au/docs/interim_report_final1.pdf

- 3.108 The present Committee believes, on information received through private meetings, that this is a problem that is not confined to South Australia, but exists in all jurisdictions. Moreover, testimony received by the Committee indicated that there was poor integration and co-ordination between catchment bodies and local government agencies.⁴² Catchment bodies may develop a catchment strategy, while local government bodies may develop their own, competing, plans and, in addition, have the legal authority to ensure implementation through zoning and planning laws, and by-laws.
- 3.109 Another deficiency in present administrative arrangements is the number of Acts that can effect catchment management in each jurisdiction. Table 3.1 outlines the number of Acts administered by the departments responsible for natural resource management in each Australian state and territory. This table provides an indication of the amount of legislation being used. It is not a comprehensive listing.
- 3.110 Many of these Acts either directly or indirectly affect the management of natural resources. A number of Acts are only applicable to a particular circumstance or specific areas, such as a lake or stream. The Committee considers that legislation implemented in this manner contributes to the ad hoc, piecemeal approach to catchment management in Australia.

Table 3.1 Approximate number of Acts with environmental implications, administered by state departments

State	Department/s	No. Acts Administered
NSW	Dpt. Land and Water Conservation	52
QLD	Dpt. Natural Resources	19
VIC	Dpt. of Natural Resources and Environment	103
WA	Water and Rivers Commission Dpt. Environmental Protection Dpt. Conservation and Land Management Agriculture WA Office of Water Regulation Water Corporation	77 (combined total)
SA	Dpt Water Resources Dpt Environment and Heritage	10 24
TAS	Dpt Primary Industries, Water and Environment	95
NT	Dpt. Lands, Planning and Environment Dpt of Primary Industries and Fisheries Parks and Wildlife Commission of the Northern Territory	42 26 15
ACT	Dpt. Urban Services	72

42 *Transcript of Evidence*, pp. 8-9.

- 3.111 Multiple pieces of legislation combined with administration by a number of Executive government Departments provides an opportunity for administrative inertia, or worse, failure. Contradictory legislative requirements or powers, may lead to a lack of clear guidance for members of the community, as well as uncertainty. At best, it may produce confusion; at worst, it may deter participation in programs because they are seen as 'too hard'.
- 3.112 It is desirable that the legislative arrangements that apply to Australia's catchment systems be made less complex and more efficient. The Committee believes, however, that the current Parliamentary arrangements in each jurisdiction provide sufficient flexibility to address many of the problems that arise from the present arrangements. An example of which the Committee is aware is the appointment of a parliamentary secretary in the parliament of Victoria, to assist the premier in the administration of programs designed to alleviate salinity problems. Such an office can provide the authority to co-ordinate the responses of different ministries, to negotiate co-operation and agreements between ministries, and solve problems if and when they arise, by dealing with the ministers directly responsible. It is an approach, the Committee believes, that should be examined in all jurisdictions, including the Commonwealth.
- 3.113 It is accepted by all stakeholders that appropriate programs will be best delivered by regional institutions and communities. It was also apparent that, where regional bodies existed, they did not possess sufficient powers to ensure effective implementation of catchment management plans that were ecologically sustainable. The limitations of the present local and regional administrative arrangements, and their effect were noted in *Managing Natural Resources*: 'The restricted powers, limited resources and access to expertise, and differing obligations under State and Territory legislation have, however, led to great variation in local governments' commitment to sound natural resource management',⁴³
- 3.114 It is apparent that the delivery of appropriate programs will be strengthened by enhancing the management powers of regional bodies and communities and it is a major weakness of the present arrangements that regional local bodies have not, in general been given enhanced responsibilities in terms of catchment management decisions.
- 3.115 Competition between administrative departments for standing and authority in environmental matters can lead to differing advice and recommendations. This may lead participants to adopt inappropriate
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programs or to refrain from being involved. Such competition between departments amounts to ‘turf warfare’ with the result that the efforts of the departments competing are directed at winning the competition rather than solving the problems. Mr Phillip Toyne and Mr Rick Farley provided an example of ‘turf warfare’. There are other underlying institutional problems in the way that government deals with multifaceted issues such as Landcare, Mr Toyne and Mr Farley wrote:

At both Commonwealth and State levels, the sharp separation of responsibilities between agricultural and environmental agencies led to poorly integrated policy and program delivery. There was a clear sense that each represented different ‘constituencies’, with often deeply entrenched and conflicting policies and attitudes. A good example was the threshold issue of ‘cross compliance’, which was the question of whether Landcare funding should be conditional upon farmers accepting certain responsibilities for the sustainable use of their properties. One condition might be that in order to be eligible for a grant, damaging practices such as broadacre clearing should be prohibited. Setting such conditions was resisted by primary industries agencies because of their perception that it would alienate the farmers they were trying to encourage into the program. Environment agencies were more philosophically predisposed to attach conditions to public funding.⁴⁴

3.116 Mr Phillip Toyne and Mr Rick Farley, also outlined two other criticisms. Although these applied to the Landcare initiative, they apply equally well to many other programs. A frequent criticism of Landcare was that funding of programs was ‘jealously administered by either the federal agriculture or environment departments (this is generally true of State agencies as well)’. This led, Mr Toyne and Mr Farley reported, ‘to complex and often overlapping applications by groups for funds’. They observed that ‘the most practical skill of Landcare members today is often their ability to write submissions’⁴⁵

3.117 In a similar vein, Mr Jason Alexander advised the Committee that:

The development of catchment management in Australia has been hesitant and unsystematic. While there has been considerable activity in recent years catchment management has failed to live up to its much-acclaimed potential as a means of integrating land and water management. There is much that commends the

44 R Farley and P Toyne, *The Decade of Landcare*, p. 12.

45 R Farley and P Toyne, *The Decade of Landcare*, p. 12.

approach, however, until there are comprehensive reforms to the policy institutional frameworks there is unlikely to much progress. Australia needs to implement comprehensive and systematic reforms to its land use systems...

There is much potential for integrating SOE reporting at all scales and involving the private sector and all tiers of government with a systematic frameworks...

An effective catchment based approach could have enormous potential at tackling many pressing environmental issues and play a critical role in meeting the goals articulated in various national and international strategies and policies, but codification of these responsibilities through to local government planning powers is essential...⁴⁶

Failure to specify goals, targets and outcomes

- 3.118 Over the past decade, the Commonwealth has funded two major projects aimed at environmental improvement: the Decade of Landcare and the Natural Heritage Trust.
- 3.119 Numerous other Commonwealth and State programs have also been implemented, all involving the expenditure of public funds. Projects often also involve large amounts of public participation, either through direct financial investment or the investment of time or allocation of other resources.
- 3.120 The Australian Bureau of Statistics (ABS) estimated that in 1996-1997 Australian governments, industry and households spent an estimated \$8,633.6 billion in 1996-97 on various measures to protect the environment.
- 3.121 This represented approximately 1.6% of GDP.⁴⁷ Other findings of this ABS survey are:
- Commonwealth, state and territory governments spent approximately 30% (\$2.6 billion) of national expenditure for environment protection in 1996-97. State governments accounted for 51% of this amount, whilst the Commonwealth and local governments shared the remainder.

46 Mr Jason Alexander, Submission no. 77, p. 4.

47 Sources: ABS Media Release, 80/99, 2 July 1999; ABS, *Environment Protection Expenditure – Australia, 1995 - 1996 and 1996 – 1997*, Catalogue no. 4603.0, Canberra: Commonwealth of Australia, 1999; Internet article: 4603.0 Environment Protection Expenditure, Australia main features, 2 July, 1999; <http://www.abs.gov.au/>.

- The largest expenditure by the government sector was for activities aimed at the protection of biodiversity and landscape. This involved \$1.2 billion of \$1.5 billion or 18% of the total spent on environmental protection by all sectors for these activities in 1996-97. Activities included programs related to flora and fauna conservation, controls on land clearing and protection of world heritage properties.
- Commonwealth, state and territory governments provided around 43% of total environment protection services and products produced. Over half of this production was for services and products provided either free or at minimal cost to the community (non-market).
- Waste water management and waste management activities accounted for about \$5.5 billion or 63% of total expenditure for environment protection measures in 1996-97, by all sectors.
- Protection of the environment by Australian households was estimated to be \$2.6 billion in 1996-97. Most of this, \$1.7 billion, was spent on waste water services, such as sewerage rates and charges, septic systems and urban stormwater drainage.
- The corporate sector accounted for 40% of total national expenditure to protect the environment (\$3.4 billion in 1996-97). About 42% of total expenditure by the corporate sector was for waste management activities (\$1.5 billion in 1996-97).
- Within the corporate sector, service industries spent the most on waste management activities (\$948 million in 1996-97).
- Manufacturing industries spent the most on waste water services and water protection (\$271 million in 1996-97), with a large proportion of this being capital investment (\$128 million in 1996-97). Manufacturing also invested heavily in equipment and activities to protect ambient air and climate (\$203 million in 1996-97).
- For the corporate sector, protection of soil and groundwater was largely the domain of agricultural industries. Agriculture spent \$102 million in 1996-97 on measures to protect soil and groundwater.
- Most environment protection expenditure by the mining industries was for waste water management and water protection (\$90 million 1996-97) and protection of biodiversity and landscape (\$99 million in 1996-97).⁴⁸

48 Environment protection expenditure is defined by the ABS as 'actual expenses incurred by industries, households, the government and non-government organisations to avoid environmental degradation or eliminate part or all of the effects after degradation has taken

- 3.122 This expenditure occurs, for the most part, outside of a comprehensive and co-ordinated framework. The lack of a framework is an issue raised before this Committee not only in the context of this inquiry but other Parliamentary inquiries as well. It is clear that comprehensive frameworks are necessary to ensure effective use of funds.
- 3.123 For example, in March 1997, the House of Representatives Standing Committee on Environment, Recreation and the Arts reviewed the Auditor-General's report, *Audit Report No. 31 1995-96: Environmental Management of Commonwealth Land*. The Committee set out a number of the Auditor-General's findings, including that:
- There is no specific Commonwealth legislation or formal policy to guide Commonwealth land management entities when they are dealing with environmental matters... This is a major constraint on departments and entities seeking to establish priorities and actions in line with best practice.⁴⁹
- 3.124 The Committee subsequently 'concluded that a Commonwealth policy on the environmental management of Commonwealth land is needed...' and recommended accordingly.⁵⁰
- 3.125 Although the EPBC Act will go some way to addressing this recommendation, the larger issues of co-ordinating programs, and ensuring that programs meet desired targets and produce clear outcomes, are still largely unaddressed.
- 3.126 A failure to implement clear targets and specify outcomes does not only affect the management of Commonwealth assets. It has affected the allocation of funds for programs on non-Commonwealth property. Dr Wendy Craik, the executive director of the National Farmers Federation, when asked whether in her view, there had been no overall

place. Typical examples of environment protection activities that incur expenditure include garbage collection services, sewage treatment, air pollution abatement and control technology (e.g. air scrubbers), habitat restoration (e.g. revegetation projects) and research into rare and endangered species'.

The ABS also notes that 'In Australia, much of the framework to ensure that environmental degradation is prevented, mitigated and restored by organisations or individuals and paid for (at least in part) by these same people or groups, is regulatory or legislative in nature. Other important motivating forces behind expenditure directed towards protecting the environment include market forces (e.g. public image, access to the 'green' market, resource efficiency) and altruism (e.g. expenditure motivated by values, such as stewardship and equity)'. Internet article: Australia Now - A Statistical Profile Environment Expenditure on protection of the environment, downloaded from www.abs.gov.au, accessed 2 October 2000.

49 A review of *Audit Report No. 31 1995-96: Environmental Management of Commonwealth Land*, p. 1.

50 A review of *Audit Report No. 31 1995-96*, p. 28.

plan for the allocation of funding and no targeting of the worst cases, testified:

Yes. It [funding] is for particular projects that probably are significant in themselves but, if you are trying to change a landscape, you really need to address these issues on a landscape basis. I think it is fair to say that we are all getting wiser with hindsight. But we have said for some years that we would prefer to see the funding that is available address issues on a landscape basis; that is, get a plan for the region and then, with a number of projects that make up that region, deliver the funding.⁵¹

3.127 Ms Anwen Lovett, also from the NFF, testified that:

In my view, one of the gaps we have at the moment is that we have not really sat down and grappled with how we actually deliver on a regional strategy. We have a fairly good idea what we need to do but there are very few examples of actually getting in there and practically trying to deliver on a regional strategic plan at this stage. That is one of the areas we are trying to grapple with. The ad hoc nature of funding from the programs we have at the moment does not allow for that sort of strategic investment because the funding is spread across the landscape. You cannot measure outcomes when it is that widely spread.⁵²

3.128 Mr Philip Toyne and Mr Rick Farley, would appear to support this testimony. In assessing the outcomes of the NHT, they concluded that ‘after spending \$1.5 billion over five years, the main outcome [of the NHT] is further increases in awareness, rather than substantial on-ground improvements on some strategic national priority issues such as land clearing, salinity and water quality’.⁵³ They also noted other successes, including the building of community motivation and the ‘creation of a new political force in the bush’.

3.129 The lack of objectives for the NHT was noted by the Industry Commission:

Not only does the Trust lack detailed objectives, but credible measures of what has been achieved by its various programs are yet to be developed. Such performance indicators are also required

51 *Transcript of Evidence*, p. 292.

52 *Transcript of Evidence*, p. 293.

53 R Farley and P Toyne, *The Decade of Landcare*, p. 12.

for evaluation of projects at the community, catchment, regional state or national level.⁵⁴

- 3.130 The importance of criteria to assess progress is widely recognised. In *Managing Natural Resources: A discussion paper for developing a national policy*, it is stated that:

The development of indicators that show whether the use of natural resources is sustainable at the regional and farm level would assist managers in matching resource use to resource capability. These sustainability indicators should be capable of monitoring change in the condition of the natural resource base, other environmental values, net economic returns, and social wellbeing.

Such indicators could be used by regional communities and industries to monitor progress towards sustainability and evaluate the impacts of particular management practices. They would also help investors and financial institutions in valuing properties on the basis of natural resource condition.⁵⁵

- 3.131 The consequences of failing to have in place appropriate targets and the need for them was clearly articulated in *Our Vital Resources: National Action Plan for Salinity and Water Quality in Australia*. The Action Plan states:

...the lack of agreed specific on-the-ground outcomes and targets for water quality, salinity and other natural resource management attributes has been a major barrier to guaranteeing a return on the Commonwealth's investment.

Agreed targets and standards will need to be set between the Commonwealth and the States and Territories, either bilaterally or multilaterally, as appropriate, in consultation with the relevant community to ensure effective use of funding.⁵⁶

- 3.132 Given the history of programs designed to deliver ecologically sustainable use of Australia's catchment systems it is astonishing that such indicators have not been developed hitherto and that policy makers are still at the stage of testifying to the need for indicators.

54 Industry Commission, *A full repairing lease*, p. 359.

55 AFFA, *Managing Natural Resources*, p. 80.

56 The Prime Minister, the Hon John Howard MP, *Our Vital Resources*, p. 2.

- 3.133 Moreover, the Committee concludes that the most efficient use of public monies, held by the Commonwealth or the states and local government, have not occurred, owing to a lack of clear targets and specified outcomes.

Proposals for more effective administration

Overview

- 3.134 The Committee believes that the problems in the present arrangements can be addressed by adopting an integrated and co-ordinated national approach. Far from being the most costly option, the Committee believes that this approach will lead to considerable cost savings through the reduction of duplicated services, better co-ordination and a sharper focus on effective program delivery leading to a more efficient use of human and financial resources.
- 3.135 These outcomes can be achieved, the Committee believes, by using the legal and financial resources that are presently available in the jurisdictions of the Commonwealth, more clearly defining the duties and responsibilities of the various jurisdictions and including non-governmental partners in the development and delivery of programs. The approach recommended requires modest structural and institutional change. Overall, the strategy would be to:
- identify principles and goals, facilitate, fund and monitor catchment management strategies at a national level;
 - devise specific solutions and co-ordinate the delivery of appropriate programs at a whole-of-catchment and sub-catchment level; and
 - deliver specific programs on a local level.
- 3.136 This integrated, nationally co-ordinated and funded approach, involving at its core local communities, is supported overwhelmingly in submissions to this inquiry and other information available to the inquiry.⁵⁷
- 3.137 The assumption underlying this approach is based upon experience and the evidence given to this Committee. The assumption is that the best

57 For example, see D Menz, Submission no. 41, p. 3; Western Catchment Management Committee, Submission no. 57, p. 8; J Alexandra, Submission no. 77, p. 4; Upper Murrumbidgee Catchment Coordinating Committee, Submission no. 98, p. 8; B Hooper, Submission no. 147, p. 10.

outcomes⁵⁸ will be delivered when Australians see the extent of the problems facing Australia's catchment systems, the effect now and in the future on our lives, and as a result, voluntarily implement remedial action. Information, persuasion, education, incentives to change land use practices, and alternative opportunities for land use, must be provided to members of the community. Enforced compliance should be avoided. It should be reserved only for those cases where a particular outcome is required and all persuasive approaches have failed.

3.138 The approach proposed is represented in the following diagram. The major institutions and the roles they have in a nationally integrated approach are depicted. They are linked, not through hierarchies of power but partnership and co-operation. The overall system is one that allocates responsibility to those people who are best placed to discharge it, while enabling accountability. The remainder of this chapter fills out the details of this approach.

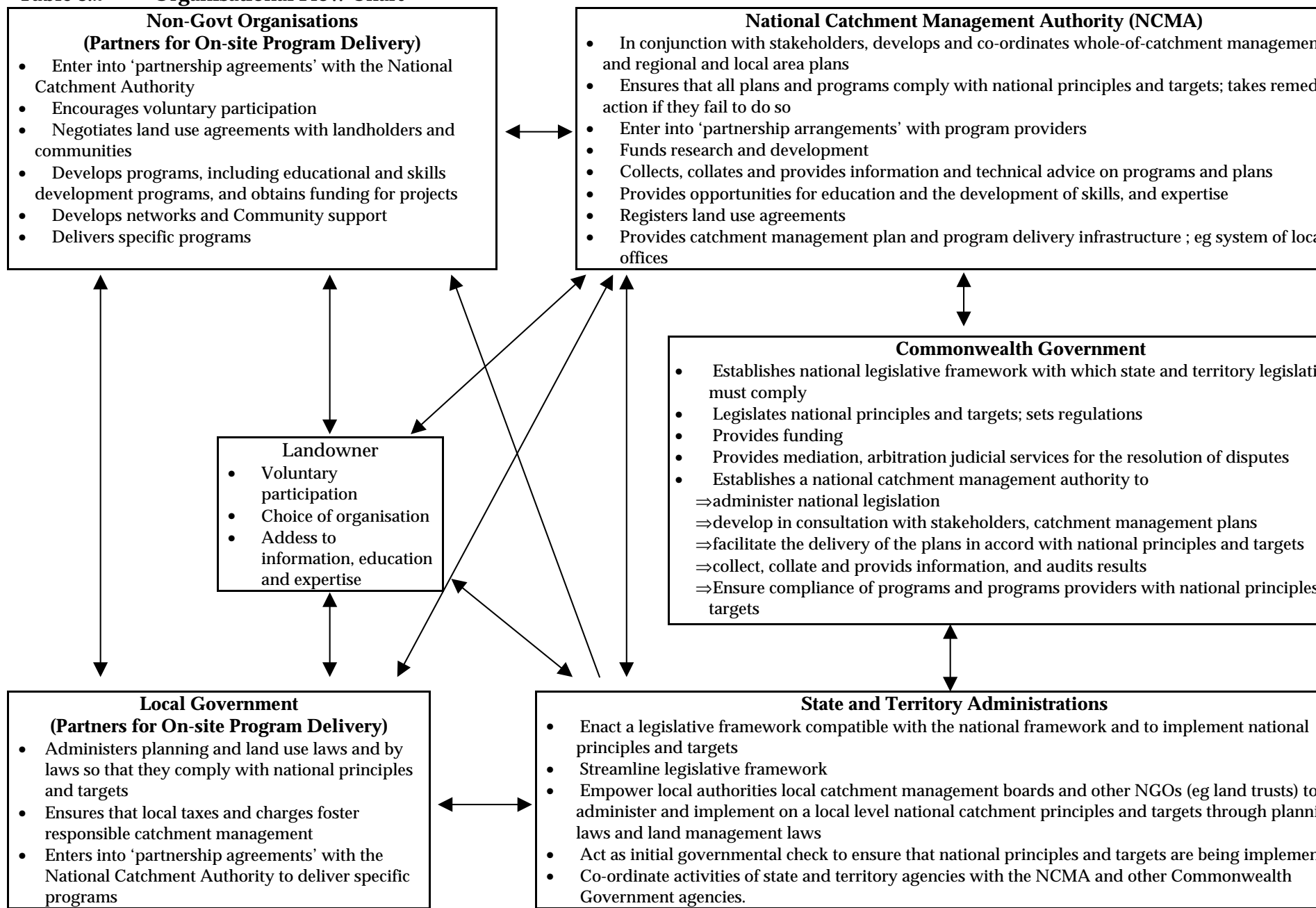
3.139 A similar approach has also been advocated by Mr Phillip Toyne and Mr Rick Farley, who, after assessing a decade of Landcare and the operation of the Natural Heritage Trust, wrote:

A better model would be for the Commonwealth to fund implementation of accredited regional plans, against national priorities and targets developed by expert advisory groups and agreed by all governments. Decisions about funding and oversight of implementation at a project level would be left to regional bodies, subject to audit against agreed priorities and targets.⁵⁹

58 'Best outcomes' are those that attain the results needed, are co-ordinated are stable over time and which tend to enhance community life rather than fragment it.

59 R Farley and P Toyne, *The Decade of Landcare*, p. 12-13.

Table 3.2 Organisational Flow Chart



- 3.140 The Committee agrees with these sentiments. Later in this chapter the Committee will discuss the accreditation of management plans and tying funding to plan accreditation. The Committee notes, however, that the development of accredited plans must involve the community and have a clear social dimension, if the plans are to have legitimacy with those who implement them and in order for the plans to motivate stakeholders. The planning and accreditation processes, and the level of community involvement, is just as crucial to success of the plan as the details that it contains. Similarly, the accreditation of the plan is vital to ensure the effective delivery of appropriate programs to respective locations, and also to ensure that public monies are spent in ways that advance the interests of all the community.
- 3.141 Before going on to set out its preferred approach, the recently released National Action Plan for Salinity and Water Quality in Australia will be discussed. There have been a number of proposals to promote the ecologically sustainable use of Australia's catchment systems, and the National Action Plan is the most recent and detailed.

National Action Plan for Salinity and Water Quality in Australia

- 3.142 As noted, the Committee believes that the National Action Plan, adopted by COAG on 3 November, 2000, is an important and commendable initiative in advancing the ecologically sustainable use of Australia's catchment systems. The plan addresses many of the concerns and encapsulates many of the suggestions made to this inquiry. In particular, the Committee notes the Commonwealth's offer of compensation, additional to the funds already promised, and the proposal to foster agreement with the states on targets and outcomes by linking funding strictly to compliance with clearly articulated standards.
- 3.143 Evidence collected by the Committee in the course of this inquiry, however, suggests a number of areas in which the action plan may be strengthened. For example, the National Action Plan is focused on salinity and water quality. However, there are a number of other significant threats to Australia's catchment systems and their potential environmental, social and economic cost is enormous. As noted already, these include acidification of soils, loss of biodiversity, weeds and pest animals.
- 3.144 The Committee notes that these problems are recognised in the National Action Plan, however, the National Action Plan proposes that they should be addressed at some later time and that agreement by the

Commonwealth to a subsequent commitment will be conditional on an agreement by the states and territories to the National Action Plan.⁶⁰

- 3.145 The Committee believes that any national approach to the ecologically sustainable use of Australia's catchment systems should incorporate all these issues from the beginning and that the National Action Plan would be strengthened considerably if it did.
- 3.146 In addition, the Committee notes that the National Action Plan relies upon the development of agreements between the Commonwealth, the states and the territories. History tells us that such agreements can take long periods of time to reach and can fall victim to political considerations.
- 3.147 Although funding from the Commonwealth will be available only to those states that agree to implement the National Action Plan as a package,⁶¹ a state may decline to participate, and when a state does participate, disputes may arise about the extent to which a state has complied. Some form of arbitration mechanism is required in order to settle disputes.
- 3.148 Under the Action Plan, the Commonwealth will have a facilitating and co-ordinating role, defined by the voluntary agreements that it can come to with the states and territories. There is no way proposed under the Action Plan, whereby a state that chooses not to participate can be required to conform.
- 3.149 The Committee believes that some means should be found to ensure that all jurisdictions follow national goals in the ecologically sustainable use of Australia's catchment systems. The Committee also believes that the role of the Commonwealth is more active than simply facilitating and co-ordinating by way of voluntary agreements, but should include regulating.
- 3.150 The National Action Plan proposes to deliver programs via catchment/regional bodies. Evidence available to the Committee indicates that program delivery will occur most effectively via such bodies and the Committee supports this aspect of the National Action Plan.
- 3.151 The plan outlines the powers of these bodies, their legislative basis, how the Commonwealth will ensure that they have similar powers and functions in all jurisdictions, and how they will be co-ordinated. Again, consistency is delivered via agreements with the competent jurisdictions and their willingness to enact appropriate legislation. The Committee does have some reservations about the capacity of the plan, as it stands, to

60 The Prime Minister, the Hon. John Howard MP, *Our Vital Resources*.

61 The Prime Minister, the Hon John Howard MP, *Our Vital Resources*, p. 6.

deliver the consistency that is required, and believes that a more extensive framework, resting on Commonwealth legislation, is required.

Proposals

- 3.152 Catchment systems do not recognise political boundaries. Problems are frequently created in one part of a catchment in one state or territory or local government area, while some effects are experienced elsewhere. Even when a catchment is geographically isolated from another catchment, such as is the case with Tasmania, a problem in such a catchment can be felt nationally, through the effect on the nation's economy. Catchment management is not then an issue and a responsibility for the people who live in a particular catchment. Ecologically sustainable management of Australia's catchment systems should concern all Australians and all sectors of the economy.
- 3.153 The Committee recognises that management activities in some catchments may appear to function more effectively than activities in other catchments. This may be related to the proximity of the community which caused the problem to impacts of that problem. The more that cause and effect are separated, the more difficult it is to motivate change in the behaviour of people whose actions cause environmental degradation. The Committee considers that, as a result, the willingness of communities to act on environmental issues which may be affecting surrounding regions may be dependent on their proximity to those regions. For example, if an environmental impact caused by a community is affecting their immediate neighbours, communities may be more willing to help than they would be if the impact was experienced by a more distant community, or a community in another state.
- 3.154 Moreover, the problems facing Australia's catchment systems will not be solved in a decade or even a quarter of a century. They will take generations to address. For this reason, stable, trusted institutions are required with access to stable sources of funding. For this reason, it is best to build upon, and extend, the stable institutional arrangements that we enjoy in Australia.
- 3.155 These considerations point to the framework to which a feasible and effective approach must conform. Catchment management is a national issue; and while programs will be delivered on a local or regional basis, there must be a stable, overarching national structure to ensure that:
- appropriate programs are developed, based upon the most recent information;

- the programs must be comprehensive and address all aspects of the ecologically sustainable use of Australia's catchment systems;
- programs are prioritised and will last for as long as necessary;
- their implementation is co-ordinated to ensure a consistent approach;
- financial and other resources are available for as long as necessary and are used efficiently; and
- the community is involved at all levels and can be assured that the whole process is trustworthy.

3.156 Evidence available to this inquiry reflects these facts. They are also reflected in the responses received to *Managing Natural Resources: A discussion paper for developing a national policy*.⁶² In the Steering Committee report on public comment on the *Managing Natural Resources* discussion paper, it is stated that:

... a national NRM policy needs to encompass all sectors of the economy, not primarily agriculture, and all environments, including rural, peri-urban, urban, coastal and marine. All people have a responsibility for natural resource management and need to be involved in contributing to solutions and tackling natural resource management problems at the landscape scale.⁶³

3.157 The *Steering Committee* also advised that:

There was an expressed desire for a bi-partisan, long-term approach by governments: 'there is a need for long-term (more than four years) commitment of governments on a bi-partisan basis to stay with [a national NRM strategy] and ensure that it is assisted and audited comprehensively so that ongoing work can be maintained efficiently'.⁶⁴

The Committee recognises that a bi-partisan approach to catchment management is crucial in achieving long-term, ecologically sustainable outcomes. An example of this approach, the Committee believes, would be a COAG agreement to a national catchment management plan to be

62 Department of AFFA, Commonwealth of Australia, Canberra, 1999, downloaded from www.affa.gov.au/nrm_paper/cttereport.pdf, accessed 7 September 2000.

63 AFFA, *Steering Committee report to Australian governments on the public response to 'Managing Natural Resources'*.

64 AFFA, *Steering Committee report to Australian governments on the public response to 'Managing Natural Resources'*, pp. 10-11.

implemented over a period of not less than ten years. The Committee considers that in order to create a bi-partisan climate, there is a clear need for:

- agreed national priorities;
- performance review mechanisms;
- transparency of procedures, decision-making, and resourcing; and
- accountability.

3.158 In the Committee's view, it is unlikely that any one approach at a local level will prove satisfactory in all cases. Rather, the best solution will involve a variety of approaches, with the particular approach adopted in a particular catchment region suggested by the local circumstances.

3.159 However, the Committee does conclude that a single administrative structure, enjoying bi-partisan support, with long-term goals, which will permit an appropriate approach in any one instance to be identified and implemented, while ensuring national, coordinated action, is the approach to adopt. The remainder of this chapter provides the recommendations (and supporting argument) to support this approach.

At A National Level

Role of the Commonwealth

3.160 The role of the Commonwealth will be determined by three elements: what the Constitution permits it to do; what, under its powers, the Parliament seeks to do; and, importantly, what Australians want it to do. As noted, the Committee believes that the Commonwealth does have considerable constitutional power in this area. Moreover, Parliament has shown its willingness to support extensive environmental legislation by enacting the EPBC Act, and the executive government of the Commonwealth has shown its ongoing concern through the release of the National Action Plan.

3.161 It is clear to the Committee that Australians want all levels of government to take a role in addressing the environmental problems facing the nation. It is also clear that Australians expect the Commonwealth government to take a lead role. The *Steering Committee report to Australian governments on*

the public response to 'Managing Natural Resources in Rural Australia for a Sustainable Future, reported that:

The notion of the Commonwealth Government assuming a leadership role was supported [by the public]. The Commonwealth's leadership role was seen as developing appropriate policies and legislation, and providing catalytic funding, including determining national priorities and directing investment for priority issues.

It was commonly pointed out that governments have a major responsibility for the effective management of natural resources, including through their management of parks and forests: 'The notion that governments should ensure that others carry out a clear duty of care is entirely reasonable, but carries some reciprocal responsibility. Both government and private landholders have a responsibility, but government has a great deal of leeway to make up. There is a case to be made for the proposition that governments, having required excessive land clearing in the past, have some obligation to assist with both the restoration of native vegetation and dealing with some of the off-site consequences'.⁶⁵

- 3.162 The central role of the Commonwealth in advancing ecologically sustainable use of Australia's catchment systems is recognised in *Our Vital Resources: National Action Plan for Salinity and Water Quality in Australia*. In launching the National Action Plan, the Prime Minister said that:

Most Australians will accept that this is one of the most significant, if not the most significant environmental challenge and natural resource management challenge that this country has. And what is needed is a national plan, flowing from Commonwealth leadership but working closely with the states and with local communities...⁶⁶

- 3.163 The Committee has noted already that a major failing in the present system is that the different jurisdictions and different levels of government often do not share common goals and, where they do, there is poor co-ordination between them in terms of policies, targets and programs. The result is a fragmented, piecemeal system that fails to deliver consistent and co-ordinated programs and which is subject to the uncertainties of the political cycle and the actions of pressure groups.

65 AFFA, *Steering Committee report to Australian governments on the public response to 'Managing Natural Resources*, pp. 10-11.

66 Prime Minister, The Hon John Howard, Press conference transcript on the launch of *Our Vital Resources*.

- 3.164 These considerations demonstrate clearly that the Commonwealth not only has the primary leadership role, given our federal system – a view shared by the community and revealed in other inquiries⁶⁷ - but that successful co-ordinated national programs will occur only through Commonwealth legislation and facilitation.
- 3.165 Moreover, the Committee believes that the Commonwealth has a duty to take a leadership role. There are several reasons for this.
- First, only the Commonwealth has the capacity to collect, collate and make available, in a co-ordinated manner and on a national basis, information on the ecologically sustainable use of Australia's catchment systems.
 - Second, the Commonwealth has the capacity to raise a significant proportion of the public funding necessary and disburse it on an equitable basis.
 - Third, only the Commonwealth has the capacity to provide the impartial, national infrastructure to solve what is a national problem. This includes legislation and a legal system and public service to administer it.
 - Finally, the Commonwealth was created by the consent of the people of six self-governing colonies to administer those matters that it was impractical, difficult, or unfeasible, for individual colonies to undertake themselves. It was also recognised that there were some activities that, while they could be administered on a regional level, were of such common concern that it was prudent for them to be administered at a national level. Defence, postal and telegraphic services and foreign relations are clear examples. Such matters transcend the borders of any single jurisdiction. The Committee believes that the ecologically sustainable use of Australia's catchment systems is a similar issue.

67 Senate Environment, Communications, Information Technology and the Arts References Committee, *Commonwealth Environment Powers*, p. 91.

Recommendation 1

3.166 **The Committee recommends that the Commonwealth adopt a lead role in terms of:**

- **facilitating the development of principles, priorities targets and programs for the ecologically sustainable use of Australia's catchment systems;**
- **implementing appropriate legislative and institutional arrangements to attain the ecologically sustainable use of Australia's catchment systems; and**
- **obtaining from the community the funding necessary to ensure that the problems facing Australia's catchment systems are addressed.**

3.167 The precise nature of that role is, however, a matter to be settled. *Managing Natural Resources: A discussion paper for developing a national policy*, proposed this role for government:

The role of government within the partnership framework is to set the policy and regulatory parameters; to establish the necessary decision-making and institutional structures and arrangements; to contribute to landholders' and other natural resources managers' capacity for informed decision making; to facilitate change; and to invest effectively to counter market failure, so as to optimise social, economic and environmental outcomes.⁶⁸

3.168 The issue is whether the central role of the Commonwealth should be to facilitate agreements, or whether the Commonwealth should seek a role that is more clearly constitutionally based. Initially, the role of the Commonwealth will be to facilitate agreements and provide an over-arching legal structure; however, in the longer term it is desirable that the Commonwealth's position constitutionally be clarified.

3.169 In the beginning, however, the Commonwealth is best suited to adopting a co-ordinating, 'honest broker' role. It was clear from the evidence that the role the Commonwealth adopts will be extensive and will have many

68 AFFA, *Managing Natural Resources*, p. 27.

facets. In order to deliver the national co-ordinated approach required, it will, initially, have to:

- Provide a forum for the co-ordination of the state based strategies and co-ordinate them if the states cannot agree;
- Co-ordinate the discovery of and development of solutions;
- Provide a forum for the impartial settling of disputes and other problems; and
- Provide a means for the enforcement of solutions;
- Provide some funding for the implementation of solutions.

3.170 These should avoid, as far as possible, conflict with the existing constitutional arrangements. However, as matters develop, the administrative structure will need to utilise existing, successful initiatives and extend them where possible to ensure a consistent, reliable approach. The task of the Commonwealth will then be to:

- broker an agreement with the states to 'authorise' likely beneficial solutions;
- co-ordinate them through nationally enacted institutional arrangements;
- fund them to an extent to be determined in each case;
- actively resolve disputes between stakeholders and, if need be, act to ensure compliance; and
- audit the efficiency and effectiveness of their delivery; criteria include:
 - ⇒ financial accountability and probity;
 - ⇒ attainment of realistic outcomes for any project;
 - ⇒ improvement in the conditions of a catchment area.

3.171 For best results, this will require considerable consolidation of law and creating a unified system of environmental law. The Committee believes that the feasibility of doing so should be examined.

3.172 The dominant goal of the Commonwealth in this area should be directed at developing a national approach within the prevailing institutional and constitutional realities. At present, the policy of the Commonwealth is to use bi-lateral and multi-lateral agreements. It may be the case, however, that to complement this approach or because the problems that face the nation's catchment systems are so great, eventually a unified system of environmental law will need to be created. Given the negotiations and agreements that would be necessary, the Committee believes that the

feasibility of, and options for, doing so should be examined sooner rather than later.

Recommendation 2

3.173 The Committee recommends that the Government ask and resource the Australian Law Reform Commission to examine the feasibility of, and options for, a national body of law to deal with the ecologically sustainable use of land, and in particular, report on feasibility of, and options for:

- **consolidating Commonwealth laws;**
- **consolidating State and Territory laws; and**
- **integrating laws at all levels**

into a consistent body so as to provide for the ecologically sustainable use of Australia's catchment systems.

A National Catchment Management Authority

3.174 A national approach will produce the intended results only if there is a national body co-ordinating the various activities that underpin the outcomes. Such an approach is embodied in the National Action Plan by way of a proposed ministerial council.

3.175 Additionally, the Committee recognises the need for catchment communities to have sufficient infrastructure and capacity to help deliver such a national approach. The Committee considers that this may be achieved through mechanisms such as regional centres and local committees. These matters are discussed in greater detail later in this chapter.

3.176 However, as indicated, the Committee has some reservations about the strategy adopted in the National Action Plan, based as it is upon agreements between jurisdictions. Agreements must be reached and that takes time. In addition, there would be little certainty that the catchment/regional based bodies would possess uniform powers and functions and be able to provide consistent coverage over an entire catchment. Furthermore, co-ordination of these bodies would be difficult and because of their state or territory-based nature they may be subject to regional political imperatives that may disrupt the implementation of an

integrated, uniform national catchment strategy. The threat by the Commonwealth, of withdrawing funding, is not a sufficient deterrent to a state or region if it should fail to implement a program that is in the interest of the entire catchment.

- 3.177 These considerations lead the Committee to conclude that a national approach that is stable over time and less likely to be subject to regional political pressures is best attained through national legislation establishing a national authority.
- 3.178 The Committee notes that when, in the 1930s, the United States was faced with the 'Dust Bowl', an environmental and agricultural catastrophe of similar proportions to that facing Australia's catchment systems, the US Federal Administration established a permanent agency to focus national efforts to tackle the problem. The result, the Natural Resources Conservation Service, provides support in various forms to landholders undertaking conservation works. It is based around an observation that the Committee notes, has been made repeatedly in this country: that the best approach involves a nationwide partnership of Federal agencies and local communities help farmers conserve their land.⁶⁹
- 3.179 The Committee believes that the similar federal structure enjoyed by both nations speaks to a federally mandated, nation wide, lead agency approach.
- 3.180 The Committee concludes that, given the problems Australia faces, and relevant federal structure, a similar approach is warranted and that, consequently, the Commonwealth should enact national legislation to which state and territory legislation and activities be subordinate. Such an approach is, in the Committee's view, appropriate and in keeping with the reasons for Federation.
- 3.181 The Committee is concerned that another bureaucracy is not inadvertently created that fails to attain the results needed. For this reason, the Committee believes that options that utilise pre-existing infrastructure, such as government programs and agencies, should be examined for their potential use in the efficient administration of legislation and programs that affect the environment. In particular:
- appointing in all jurisdictions a parliamentary secretary for environmental matters, responsible to the premier or the Prime Minister, whose responsibility would be to facilitate the administration and co-ordination of environmental policy, law and programs, within the jurisdiction of that parliament or between jurisdictions; and
-

69 For a detailed description of the US approach, see the Inquiry into public good conservation, NSW Farmers' Federation, Submission no. 177, p. 22. See also appendix F.

- reserving for the Commonwealth and its agencies a supervisory, funding, facilitating role through developing and fostering 'partnerships' with state agencies and agencies from the private sector, to ensure they provide agreed outcomes.⁷⁰

3.182 Furthermore, community involvement and transparency of operation is required to ensure accountability to the community and their participation in, and sharing of, the administrative burden.

3.183 Community response to *Managing Natural Resources: A discussion paper for developing a national policy* indicated clear support for some form of national body. The Steering committee, which reported on the public response to *Managing Natural Resources: A discussion paper for developing a national policy*, stated in its report that:

The Reference Group saw some merit in the establishment of an overseeing national body, in particular for monitoring and reporting on progress against targets.

The Steering Committee recognises the importance of effective national institutional arrangements to: agree on national goals, priorities and investment sharing arrangements; develop a framework for setting regional targets; promote consistency of approach across jurisdictions; foster best practice legislation and regional delivery arrangements; set the framework for effective community consultation and participation; and establish sound processes for monitoring and reporting. There are a number of models that a National Council could follow, ranging from Ministerial Councils such as ARMCANZ and the Australian and New Zealand Environment and Conservation Council (ANZECC) supported by Standing Committees, to Ministerial Councils that are supported by an independent advisory body, to an independent national council that has either advisory or administrative functions.⁷¹

3.184 The Committee believes that the Commonwealth has both the constitutional power and the duty to create a national catchment authority. The authority should operate outside the influence of day to day political considerations and have two primary purposes:

1. Facilitate the development implementation and co-ordination of whole of catchment and catchment region management plans and ensure that

70 This is discussed more fully in the section on partner organisations. See paragraph 3.268.

71 AFFA, *Steering Committee report to Australian governments on the public response to 'Managing Natural Resources'*, p. 30.

these plans are consistent with, and attain, national catchment management principles and targets;

2. Act as a funding body for catchment management plans, whether those plans are whole of catchment, regional or local, by entering into partnership agreements with local bodies and organisations who are able to deliver the services to a local area.

3.185 The Committee considers that the Commonwealth alone cannot achieve these purposes. The Committee believes that a collaborative approach with the states and territories is the most effective way of achieving them. The Committee also considers that such an approach is the best means of receiving the full support of the states and territories, and encouraging information sharing and co-operation throughout the nation's catchments.

3.186 It is clear then, that a national approach will be the most effective in identifying catchment management issues, co-ordinating between levels of government and organisations and disbursing funding, expertise and information. It is also clear that there is considerable community support for not only a national approach but a national approach delivered through comprehensive national legislation administered by a national body.

Recommendation 3

3.187 **The Committee recommends that the Government work towards an agreement through COAG that requires each jurisdiction to enact complementary legislation to establish an independent statutory authority, the National Catchment Management Authority (NCMA). This authority should have a division corresponding to each of Australia's catchment systems and it should have the following powers and functions:**

- **to accredit and assist in the development of whole of catchment, regional and local catchment management plans;**
- **to co-ordinate the ecologically sustainable use of Australia's catchment systems;**
- **to fund research on the ecologically sustainable use of Australia's catchment systems;**
- **to apply the findings of that research to the development of the ecologically sustainable use of Australia's catchment systems;**

- **to facilitate the dissemination of information and access to skills, data and educational programs for the ecologically sustainable use of Australia's catchment systems;**
- **to monitor the implementation of whole of catchment management plans; and**
- **with the support and the states and territories, ensure compliance with nationally mandated principles and targets and whole of catchment plans for the ecologically sustainable use of Australia's catchment systems.**

Comprehensive National Catchment Management Legislation

- 3.188 The role of the Commonwealth, with the support of the states and territories, could be to ensure that all catchments in Australia are managed in an ecologically sustainable way. The Commonwealth agency that will implement this policy is the national catchment authority. To enable it to do its work, it must have sufficient powers to attain the outcomes the community wants.
- 3.189 Moreover, there must be a consistency of approach between catchment systems. It must also be clear to the citizens of each state that the funds and other resources allocated are provided fairly, according to an open, public process.
- 3.190 In addition, a national approach would lead to state laws being more in harmony, leading to a co-ordinated national approach and the better utilisation of scarce financial resources.
- 3.191 Furthermore, there are a number of pieces of legislation with environmental implications. At a state level, as noted, this is especially problematic. The Committee notes that the EPBC Act draws together a number of pieces of Commonwealth legislation into one consolidated Act.⁷² A national overarching piece of legislation would not only take this a step further at a Commonwealth level, but could be used to encourage the states and territories carry further the work of consolidating and streamlining state and territory-based legislation and institutions.

72 The Environment Protection and Biodiversity Conservation Act 1999 replaces five existing Commonwealth Acts. These are the Environment Protection (Impact of Proposals) Act 1974, the Endangered Species Protection Act 1992, the Whale Protection Act 1980, the National Parks and Wildlife Conservation Act 1975 and the World Heritage Properties Conservation Act 1983. See www.ea.gov.au/corporate/legislation.html.

- 3.192 Finally, the whole structure should be stable over time; that is to say, not likely to be undermined by constant restructures and alterations or liable to total abolition.
- 3.193 The Committee believes that the ecologically sustainable use of Australia's catchment systems will be best attained, with the support of the support of the states and territories, under national legislation that that provides for:
- Principles
 - Targets and outcomes
 - Funding arrangements
 - Accreditation of program delivery agencies
 - Program delivery infrastructure; and
 - Accountability structures
- 3.194 Evidence available to the Committee indicated that a legislated national approach was preferred by many witnesses.⁷³ Moreover, other inquiries have recommended consolidated legislation at all levels of government.⁷⁴

Recommendation 4

- 3.195 **The Committee recommends that:**
- **if the report of the Australian Law Reform Commission referred to in recommendation 3 reports that it is feasible for the Commonwealth to enact a single piece of legislation;**
 - **if agreement can be reached through COAG for such legislation; and**
 - **then such legislation be enacted to apply to all aspects of the ecologically sustainable use of Australia's catchment systems that are within the jurisdiction of the Commonwealth.**

73 For examples, see *Transcript of Evidence*, p. 150 and the Inquiry into public good conservation, *Transcript of Evidence* pp 284, 230.

74 Industry Commission, *A full repairing lease*, Recommendations 9.1, 9.2.

National catchment management principles

- 3.196 At present there are no national standards for catchment management consistent across all jurisdictions. Each jurisdiction has developed legislation in an ad hoc manner seeking only to address immediate, not future concerns. Often the legislation is narrowly focused and intended to address the concerns of the particular jurisdiction. How land use in one jurisdiction may affect Australians in other jurisdictions has not figured in the development of land use legislation. The Committee believes that the management of catchments should be consistent between jurisdictions. The best way to achieve this, in the Committee's view, is through uniform national principles enacted by the Parliament of the Commonwealth.⁷⁵ The Committee believes that while the management of catchments should be consistent between jurisdictions, it is also the case that in order to be appropriate for any location, management must take into account the local conditions. The best way to achieve this, in the Committee's view, is through uniform national principles enacted by the Parliament of the Commonwealth, that are flexible enough to provide programs adapted to local conditions. Such an approach would minimise one of the major failings of the present arrangements: the lack of consistent coverage and co-ordinated responses to environmental problems owing the fact that:
- most programs are state or territory based; and,
 - within a jurisdiction, different authorities have the capacity to set their own agendas.
- 3.197 National principles would enable, for the first time, a comprehensive audit and evaluation of catchment management programs to occur, and modifications to be devised and implemented.
- 3.198 Moreover, the environmental problems facing the nation are so great and pressing that action should be taken sooner rather than later. It is important, therefore, to develop a timetable for the formulation of the principles and their implementation.
- 3.199 The Committee also concludes that the principles should be set and included in the national catchment legislation already envisaged.

⁷⁵ This is a conclusion expressed in the Senate Environment, Communications, Information Technology and the Arts References Committee report, *Commonwealth Environment Powers*, p. 91.

Recommendation 5

3.200 **The Committee recommends that, in consultation with stakeholders, national catchment management principles be developed and enacted in comprehensive, national catchment management legislation. The Committee further recommends that:**

- **these principles should be enacted no later than the end of 2002; and**
- **all programs in Australia that have an effect upon the use of catchment systems should, no later than 2005, be assessed against these principles and by 2007, modified if necessary, to ensure that they comply with them.**

3.201 The Committee does not wish to specify in detail what these principles should contain. However, the evidence gathered in the course of this inquiry indicate that the following types of principles should be considered:

- Use of the natural environment should be ecologically sustainable in the longer term.
- The likely anticipated effect on communities, immediately adjacent to the proposed activity and potentially affected by the proposed activity must be considered, when evaluating proposals for land use.
- Use of the natural environment must recognise and attempt to discharge two duties:
 - ⇒ Duty of care: to ensure that the actions one takes or proposes to take do not diminish, without their consent, the rights of others to enjoy to an equal extent the environment and its potential; and,
 - ⇒ Duty of stewardship: to use the environment so that future generations have the opportunity to use and enjoy the environment and its benefits to at least the same extent as the present.
- Use of the natural environment should protect biodiversity.
- Any use of the natural environment should involve the implementation of strategies that stabilise current problems and aim to repair degradation.

- Any use of the natural environment should ensure that the expected economic and social benefit of using a natural resource clearly exceeds the grossed up cost of using that resource.
- Any use of the natural environment should ensure that the proposed use does not utilise natural systems in ways that exceed the capacity of those systems to sustain that use without degradation occurring.

3.202 These are only draft principles. The aim of the Committee is to place them in the public area for discussion and to promote debate.

National targets for the ecologically sustainable use of Australia's catchment systems

3.203 Principles set the broad policy parameters. Targets specify particular goals. The Committee has noted that there are no nationally agreed targets for the development of policies and programs for the ecologically sustainable use of Australia's catchment systems. The Committee believes that this is a defect of the current arrangements.

3.204 National targets provide a benchmark by which the community can assess the development and implementation of catchment management policies and programs. Targets provide criteria for accountability of government, organisations and communities. If the targets are met, new ones can be set; if they are missed, then the community is entitled to know why and to seek remedies.

3.205 The Committee notes that *Managing Natural Resources: A discussion paper for developing a national policy* contains 'indicators of progress'. These indicators would provide benchmarks to measure the development and implementation of ecologically sustainable management practices in Australia's catchment systems. These indicators of progress represent different facets of ecologically responsible policy and program development.

3.206 The use of 'indicators of progress', rather than targets, has been criticised by the ACF. The ACF, in its response to *Managing Natural Resources: A discussion paper for developing a national policy* said that,

It is critical that targets be included in any NRM strategy. They are not just indicators of progress, they are also genuine targets – things to be aimed for, and against which progress is monitored and measured.⁷⁶

76 ACF, Submission in response to the discussion paper, *Managing Natural Resources*, p. 13.

- 3.207 The Committee also notes the preferred targets of the ACF. The Committee agrees that some of the 'indicators of progress' in *Managing Natural Resources: A discussion paper for developing a national policy* do not match the urgency of the problem. However, the Committee is of the view that some of the ACF preferred targets may be unachievable, given the time that is necessary to inform the community of the serious and urgent nature of the problems facing the nation's catchments, the negotiation with the states and territories that must occur, the legislation that must be enacted, and the institutional modification and building that must take place. Nevertheless, the Committee agrees that the targets preferred by the ACF are not unreasonable in themselves.
- 3.208 The Committee believes that the information that members of the community must consider in recognising the need for targets and the appropriateness of specific targets, is not so complex that communicating the urgency of the situation presents great difficulties. Moreover, there is sufficient evidence and performance reporting information available to set targets and to commence an education campaign.
- 3.209 The Committee also notes that in the National Action Plan, the Prime Minister proposed that targets should be set. This plan, including the key element of setting targets, was endorsed by COAG on 3 November, 2000. When releasing the National Action Plan in 10 October, 2000, the Prime Minister noted that:

Commonwealth-State/Territory Agreement to Targets and Standards

Good progress on addressing water quality, salinity and natural resource management issues has been made with Landcare and the Natural Heritage Trust. However, the lack of agreed specific on-the-ground outcomes and targets for water quality, salinity and other natural resource management attributes has been a major barrier to guaranteeing a return on the Commonwealth's investment.

Agreed targets and standards will need to be set between the Commonwealth and the States and Territories, either bilaterally or multilaterally, as appropriate, in consultation with the relevant community to ensure effective use of funding.⁷⁷

- 3.210 The Committee supports the rationale underlying the decision to set targets and the decision of COAG to establish targets. The Committee urges that targets should be set as soon as possible. They should be capable of revision, however. The Committee also concludes that the
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77 The Prime Minister, the Hon. John Howard MP, *Our Vital Resources*, p. 2.

targets should be set a national ministerial level as a disallowable instrument, and included in the national catchment legislation already recommended.

- 3.211 The role of targets in ecologically sustainable use of Australia's catchment systems should be defined clearly. The Committee does not believe that the targets should be voluntary, but that they should be mandatory. All programs, policies and activities should have to comply with them or be discontinued. The Committee believes, then, that the targets set should be used as the measure of the adequacy of state, territory, local government and community programs and policies, and their effectiveness.

Recommendation 6

- 3.212 **The Committee recommends that:**

- **the Government work through COAG to set targets for the ecologically sustainable use of Australia's catchment systems under the national catchment management legislation as soon as possible;**
- **these targets be mandatory, reviewable and disallowable instruments;**
- **funding be dependent upon partner organisations accepting and aiming for these targets; and**
- **the Government, in conjunction with the states and territories, conduct a stocktake of current data, and the usefulness of that data when determining national targets.**

- 3.213 The pressing issue is to identify the targets that should be set. In this, the Committee believes that the 'indicators of progress' set out in the *Managing Natural Resources in Rural Australia for a Sustainable Future: A discussion paper for developing a national policy*, should be adopted in the first instance as targets. The following table reproduces the indicators, renamed as 'targets'.

- 3.214 These targets should be revised and augmented in the light of information about the extent of problems and the capacity of the community to allocate resources and develop institutions and programs to meet them. The Committee believes that they are not unreasonable targets to begin such a process.

Table 3.2 Proposed national mandatory targets for ecologically sustainable use of Australia's catchment systems

Year	Targets	Outcome
2001-2011	Building on Landcare	Levels of participation by landholders in landcare and other natural resource management groups should increase during the coming decade.
2005	Capacity building for improved natural resource management	There should be a 75 per cent increase in the number of landholders and regional communities actively monitoring resource condition – for example, by soil testing and water and biodiversity monitoring – to guide their management practices
2005	Facilitating fundamental change	There should be a significant increase in landholders' capital expenditure on measures and practices aimed at controlling or preventing natural resource degradation
2005	Natural resource condition	No additional ecological communities should become threatened as a result of agricultural activity.
2005	Natural resource condition	There should be no net loss of native vegetation measured within each jurisdiction.
2005	Natural resource condition	All stressed rivers and a significant proportion of other priority regulated rivers should have incorporated an environmental flow regime to ensure maintenance of ecological processes.
2005	Natural resource condition	Critical recharged zones within catchments will be identified; by 2010 these should be revegetated to prevent further land and water resource degradation, and necessary adjustments should be made to environmental flow regimes of all regional and catchment planning.
2005	Natural resource condition	Revegetation options for multiple benefits will form part of all regional and catchment planning.
2005	Regional	Each state and territory should establish a planning framework for all regions and catchments, with communities in half of these regions and catchments having developed and being in the process of implementing integrated natural resource management strategies.
2005	Regional	All regional development initiatives and local government planning should be based on sound natural resource management principles and recognise the limitations of natural resources.
2010	Building on Landcare	Operations on a majority of farms should be based on whole-farm plans that are consistent with regional strategies
2010	Capacity building for improved natural resource management	The number of landholders and regional community leaders participating in rural training and leadership courses that incorporate a natural resource management component should have doubled.
2010	Enhancing knowledge and information	There should be a 50 per cent increase in research and development to do with ecologically sustainable natural resource management and use.
2010	Enhancing knowledge and information	Eighty per cent of landholders should use natural resource management information relevant to their region through home-based computers.
2010	Facilitating fundamental change	Fifteen per cent of agricultural produce should be coming from properties that have ISO 14000 certification or other accredited environmental management systems in operation or that are participating in a production accreditation scheme.
2010	Facilitating fundamental change	An improved economic return resulting from new production opportunities, better use of resources, and land use change in areas at risk of or experiencing resource degradation. The principles of sustainability should also be adhered to in new areas of development and non-degraded areas.

2010	Natural resource condition	There is a net gain in native vegetation cover and a net reduction in species and ecological communities listed as threatened or endangered.
2015	Enhancing knowledge and information	At least 50 per cent of regions should have information management systems that are comprehensive, supported and accessible to the general public, including through the Internet.
2015	Natural resource condition	There should be a net reduction in the area of productive land lost as a consequence of soil degradation caused by acidity, sodicity, salinity, acid sulphate, soil carbon loss, decline in soil structure, and erosion.

Source Derived from *Managing Natural Resources in Rural Australia for a Sustainable Future: A discussion paper for developing a national policy*, pp. 20-21.

Addressing the property rights question

- 3.215 The inquiry revealed clearly the deep and abiding attachment that Australians from all areas have to their country. For rural Australians, this often focuses upon what they perceive as their property rights in respect of their farms and the duties of others in respect of their property. These 'others' include neighbours, communities, state and Commonwealth governments.
- 3.216 As the rights that people have over the land they manage are more clearly defined, and landholders alter their land use practices, disputes will arise. Moreover, as regional catchment plans develop, some landholders may not be inclined to participate and issues of compensation for enforced land-use changes will arise.
- 3.217 Furthermore, the Committee has received clear evidence that many landholders want compensation if they are to change their land management practices or the activities that they currently undertake are restricted. In such cases, there may be grounds, the Committee has had suggested to it, to claim 'just compensation'. Disputes may therefore arise over the meaning of 'just compensation' or when management prerogatives are constrained or eliminated. The National Action Plan acknowledges that the 'Clarification of property rights and appropriate pricing of water is fundamental in the management and remediation of water quality and salinity'.⁷⁸
- 3.218 At a regional level disputes may develop between well-intentioned people over the meaning of the national principles, or national targets; or how they should be implemented on a local level. Disputes may also develop, or clarification may be required, about the powers of regional catchment bodies, catchment authorities or the national authority. The powers of the

⁷⁸ The Prime Minister, the Hon. John Howard MP, *Our Vital Resources*, p. 5.

Commonwealth and the states may also be the subject of dispute, as they have been in the past.

- 3.219 What is apparent is that all these disputes require an impartial system whereby they can be settled. Access to the system should be speedy and cheap. Moreover, to ensure that there is consistency between state and territory jurisdictions, and to demonstrate the national character of the catchment management program, the system should be national.
- 3.220 The problems that develop in this area would be focused on relatively self-contained legislation because it would, for the most part, deal with environmental matters. Consequently, it may be useful if a body of expertise were to develop to ensure that the intent of the various legislatures in the Commonwealth were respected and consistency across jurisdictions were promoted.
- 3.221 Moreover, although the issue of property rights will be examined more fully in the Committee's inquiry into public good conservation, it is, in the Committee's view, important that options for setting disputes begin to be discussed. Options that could be considered include the creation of a federal environment court, or for a specific, environmental jurisdiction to be added to the existing federal court.
- 3.222 The Committee's view, at present, is that the options for speedy dispute resolution should be examined. In particular, the legal precedents for establishing special dispute resolution processes within the Commonwealth should be examined. The Committee also considers that the policies and strategies of foreign jurisdictions that share a similar political structure to the Commonwealth and have experienced similar environmental problems, such as the United States, should be examined in terms of their applicability to the Australian situation.

Recommendation 7

- 3.223 **The Committee recommends that the Government ask and resource the ALRC to report on options for resolving in a cost effective and speedy manner cross-jurisdictional environmental disputes.**

Environment auditor and national environment audits

- 3.224 The inquiry revealed that easy access to accurate information is required in order to identify the problems that must be addressed, develop appropriate policies and deliver programs designed to remedy the problems. As indicated, the inquiry discovered that information was not used as effectively as it could be; and in some instances, there has been a reluctance on the part of some agencies to share information.
- 3.225 Accurate information is also required in order to monitor the effectiveness of the actions taken and to continue to develop and deliver appropriate responses, especially in the development of innovative farming practices and land-use practices. As noted in the Steering Committee's report on the public response to *Managing Natural Resources: A discussion paper for developing a national policy*: 'There was ... strong support for unrestricted access to all monitoring data and information collected'.⁷⁹
- 3.226 Access to information (and educational programs) is also necessary if the community is to become aware of the extent and seriousness of the problems and to be motivated to allocate community resources to address them. Ultimately, then, the provision of up to date information is the foundation for empowered and motivated communities.
- 3.227 Moreover, landowners, local authorities and catchment management bodies require up to date information in order to comply with national principles and targets. Finally, if market mechanisms are to be used to address some of the problems in catchment areas, market participants will require information and will need to be kept informed.⁸⁰ At all stages of devising and implementing programs for the ecologically sustainable use of Australia's catchment systems, access to high quality up to date information is required. For these reasons, the national community requires an ongoing, effective and affordable approach to the collection and dissemination of information.⁸¹
- 3.228 With the support of the states and territories, the Commonwealth has the capacity to collect and collate data from stakeholders, including the states and territories, and collate it so that a national database is created and provided to stakeholders. In the Committee's view, the lack of systematic information and access to information can best be remedied by a national approach operated by the Commonwealth.

79 AFFA, *Steering Committee report to Australian governments on the public response to 'Managing Natural Resources in Rural Australia'*, p. 28.

80 These points are also made in the Industry Commission's, *A full repairing lease*, p. 129.

81 See AFFA, *Managing Natural Resources*, pp. 10-11.

- 3.229 Moreover, a national approach reduces the opportunity for duplication of information and research, and permits a concentration of resources into a uniform focused organisation.
- 3.230 Such an approach, the Committee believes, can be implemented easily and cheaply by building on the existing, successful initiative of the National Land and Water Resources Audit (NLWRA). The NLWRA was established as a program of the Natural Heritage Trust and operates with a four-year budget of \$29.4 million. Although the purpose of the NLWRA is to provide a comprehensive national appraisal of Australia's natural resource base, it is not an ongoing body.⁸²
- 3.231 It is unclear whether it the Government intends that the NLWRA should continue beyond the initial period. However, the importance of ongoing data collection and monitoring was made to the Committee by a number of witnesses. It is also clearly acknowledged in *Managing Natural Resources: A discussion paper for developing a national policy*:

An important element of this is the feedback of information on the natural system's response to management decisions and making the necessary adjustments to management practices. This relies on good baseline information and continued monitoring of production and management impacts.

Such information needs to be in a form that is useful and relevant to landholders, regional communities and governments. It needs to be comparable over time and space to improve decision making at all levels and across generations.

At present there are significant gaps in data and information on the environmental, social and economic aspects of natural resource management at all decision-making levels—farm, local and national, and particularly the catchment and regional levels.

Monitoring the state of our natural resources and the impacts of changing production practices means that data need to be collected regularly and consistently. We need robust and affordable systems for sharing data at the national, State and Territory, regional and farm levels.⁸³

- 3.232 Although the collection and analysis of data are a shared investment responsibility on all stakeholders⁸⁴ it must be co-ordinated and the information made available in useful formats. For this reason, the

82 Information on the NLWRA is available at: http://www.nlwra.gov.au/full/05_about_the_Audit/about_the_Audit.html

83 AFFA, *Managing Natural Resources*, p. 81.

84 As AFFA's discussion paper, *Managing Natural Resources* indicates. See p. 81.

Committee concludes that a national body is required and led by a statutory office: the office of the environment auditor.

- 3.233 The Steering Committee also notes that responses to *Managing Natural Resources* suggested that 'setting up a national database of current research and development material relating to NRM with internet access would be beneficial'.⁸⁵
- 3.234 In the Committee's view, the cost of the infrastructure for establishing a national database, a national monitoring agency and auditor have already been met through the creation of the NLWRA. It will provide a substantial foundation upon which to build an ongoing body that makes an essential, and much needed, contribution to developing appropriate solutions to the problems in Australia's catchment systems. At present, the Audit collects, collates and presents data, thereby making it available for use by industry, community groups, interested members of the public, and government. Therefore, the Committee believes that the NLWRA or its successor body should continue the NLWRA's work and that its purpose and functions should be expanded to include the monitoring of program effectiveness and providing some community education programs.

Recommendation 8

- 3.235 **The Committee recommends that the National Land and Water Resources Audit be formally established as an ongoing independent statutory Commonwealth authority called the National Environment Audit Office, with the:**
- **power to collect relevant data and maintain an ongoing audit of the state of Australia's catchment systems; and**
 - **purpose of educating the community on the need for, and effective measures to attain, the ecologically sustainable use of Australia's catchment systems.**

85 AFFA, *Steering Committee report to Australian governments on the public response to 'Managing Natural Resources'*, pp. 27, 28.

Recommendation 9

3.236 The Committee further recommends that the NLWRA should be provided with sufficient funding to enable it to complete within the next five years a comprehensive audit of Australia's catchment systems and sufficient ongoing funding thereafter to enable it to maintain an ongoing audit of Australia's catchment systems and the policies and programs designed to ensure the ecologically sustainable use of Australia's catchment systems.

The Committee further recommends that funding for the Audit should not come from the Natural Heritage Trust or from asset sales but from general taxation revenues and that any products of the Audit should be made available free of charge.

Recommendation 10

3.237 The Committee recommends that the Government enter into negotiations with all state and territory governments to establish clear protocols for the exchange of information concerning the ecologically sustainable use of Australia's catchment systems and that:

- funding to the states and territories be dependent, in part, upon entering into information sharing protocols;**
- this information be collected and maintained on a national basis, in a national database maintained by the NLRWA; and**
- this information be freely, publicly available through catchment area district offices and over the internet.**

Leading through education

- 3.238 Education and awareness of environmental issues is essential for effective catchment management.⁸⁶ First and foremost is the need for communities to be aware of the causes and effects of environmental degradation, the extent of the issues, and how it impacts on them, their community and the wider region.
- 3.239 Second, an understanding of these issues and the community's role in them is needed before the community accepts that they have a responsibility to contribute to fixing the problems.
- 3.240 Third, an awareness of the issues can add to an understanding of the long-term benefits of fixing the problems, rather than focusing on the short-term costs. Finally, education is crucial to teaching individuals, communities and organisations how they can contribute to effective catchment management, and how they can implement best practice management in their daily activities.
- 3.241 The National Farmers Federation expressed the view that the awareness of environmental issues varies considerably from region to region. For example, awareness of dryland salinity ranges from very high in some states to not nearly so high in others.⁸⁷ The NFF also advised the Committee that awareness of issues such as carbon credit trading is very low amongst the farm sector.⁸⁸ The Committee considers that there is an urgent need to address these educational deficiencies, particularly amongst the rural communities.
- 3.242 Developing a competent skills base is also vital. Dr Wendy Craik, of the NFF commented that:

I think, too, that the issue of skills is absolutely fundamental. I guess we would tackle that on a broader approach – that the opportunity for people to acquire skills in rural and regional Australia is absolutely fundamental. If you look at some of the indicators, such as trends in the retention levels in schools and participation in tertiary education, this is important not only for the rural sector generally but in this particular area.⁸⁹

86 This is recognised by the Prime Minister, the Hon. John Howard MP in, *Our Vital Resources*, p. 7.

87 *Transcript of Evidence*, p. 303.

88 *Transcript of Evidence*, p. 307.

89 *Transcript of Evidence*, p. 298.

3.243 The Committee is aware of the need for an effective education campaign addressing environmental issues. When discussing education campaigns with the Committee, Dr Craik considered that:

I guess I have often thought – this is not an NFF view but a personal view – that something on the scale of the AIDS education program is what is needed to get this message out to the community.

3.244 The Committee considers that an extensive and intensive education campaign must be undertaken as an essential element in developing an effective program of ecologically sustainable catchment use. It believes that the Commonwealth government has the lead role to play through education and promoting awareness of catchment management issues.

3.245 The Committee believes the government can contribute to this through increasing access to information, through, for example, advertising campaigns, farm field days, and providing subsidies for educational institutions to offer distance education programs. The Committee recognises the opportunities for the use of the internet as a tool to gain access to information, and strongly supports the implementation of infrastructure that would enable the rural community to have cheap, fast and reliable access to the internet.

Recommendation 11

3.246 **The Committee recommends that the Government develop and implement an education strategy, including appropriate on ground activities, on the ecologically sustainable use of Australia's catchment systems.**

3.247 Australia already possesses considerable infrastructure, such as the Australian Broadcasting Corporation (ABC), and universities, through their distance education programs that are capable of delivering catchment management information to rural and regional areas. The Committee believes that at some time in the future the Government should examine the infrastructure and other needs of the ABC, Australia's tertiary institutions, and other educational providers, to further assist them in delivering programs that are easily accessible and targeted at developing the skills necessary for effective, integrated catchment management. The Committee also believes that an examination of the feasibility of subsidising the educational expenses of people undertaking catchment management education or skills building programs should be

undertaken at a later date. The Committee also considers that these programs need to be accredited by the NCMA.

The role of the States and Territories

- 3.248 The evidence gathered by the Committee showed conclusively that the states and territories have a central role in the ecologically sustainable management of catchments. At the present time, the states and territories not only manage a large number of programs, but also regulate many aspects of catchment use through legislation enacted at the state or territory level.
- 3.249 While the Commonwealth can take the lead in developing national principles and targets, and in establishing a national catchment management authority, local bodies are and will remain, subordinate to state and territory law. Constitutionally, then only the states and territories can empower the regions.⁹⁰
- 3.250 This is the most sensible approach to take because a result of the present arrangements is that the states and territories have considerable infrastructure specifically designed for local government, and the administration of regions and communities within a state or territory. This can include, for example, the capacity to enact planning laws and regulations, water and waste water management, land development and management. This infrastructure must be brought up to date so as to deliver catchment wide, co-ordinated programs.
- 3.251 The Committee recognises that the devolution of monitoring, enforcement and overall administration of land use laws and water use laws and policies to local bodies is, in theory, a practical step. It would confer responsibility and accountability on local communities, while at the same time ensuring through appropriate institutional arrangements that local decisions comply with national principles and targets.
- 3.252 However, the Committee considers that realistically speaking many local bodies do not have financial or human resources to carry out such a task, and it is unlikely that state governments would provide the resources. Nevertheless, the Committee recognises the importance of community ownership of catchment issues, and supports mechanisms whereby local communities fully participate in catchment management issues. The Committee believes that this would also allow for the better integration of the administration of infrastructure that is of a local nature, such as local

90 This point also made in AFFA's *Managing Natural Resources*, p. 34.

roads and bridges, into co-ordinated catchment wide programs that are consistent with national principles and targets.

- 3.253 Consequently, one important movement in this area that will facilitate effective catchment management will be to empower local communities by devolving planning decisions and the regulation of land use to them.
- 3.254 Therefore, in keeping with the approach of this inquiry to adapt as far as possible existing and familiar institutions, the Committee considers that the role of the states and territories is to provide the necessary legislative and other professional and technical support to deliver on a local level the national principles and targets. The states and territories are then central elements in any co-ordinated and consistent national approach to catchment management.
- 3.255 It is important, however, that the states and territories streamline their legislative machinery and ensure that it conforms with and is capable of delivering outcomes consistent with the national principles and targets.

Implementing solutions in the local area

- 3.256 Effective catchment management rests upon the involvement of local communities. Support for catchment management is generated and programs motivated at the local and regional level.⁹¹ It is essential that appropriate institutional arrangements are implemented that empower communities. The discussion paper, *Managing Natural Resources*, made the point clearly: ‘The development of regional approaches to natural resource management would be strengthened by the establishment of institutional structures that give the people of a region greater authority over natural resource management.’⁹²
- 3.257 Two administrative innovations that will involve local communities and deliver appropriate results to a specific area are recommended by the Committee:
1. the creation of a network of catchment authorities as units in each catchment system; and
 2. the development and implementation of accredited management plans.

91 This point was also made to the Committee by Dr Wendy Craik, *Transcript of Evidence*, p. 303.

92 AFFA, *Managing Natural Resources*, p. 34.

Catchment Management Authorities (CMAs)

- 3.258 In order that appropriate programs can be delivered to a local area that are not only consistent with national principles and targets, but are credible within the local community, locally-focused institutions are required. Such institutions would derive their authority from the NCMA already recommended. The Committee believes that the most administratively effective and cost effective option for delivering appropriate catchment management programs to a local area is through local Catchment Management Authorities.
- 3.259 The function of the CMAs would be to engage the community in the various ways already noted, motivate community members, and also provide a local 'shop front' for the national catchment management authority to deliver its services to specific locations. Specifically, CMAs would provide ready access to expertise, thereby facilitating the development of management plans. They would co-ordinate and provide, on a local level, access to information and education services. CMAs would also approve plans, ensure that they are in line with accreditation processes, co-ordinate them with the activities of other CMAs, and monitor the effectiveness of plans and the efficiency of their delivery. Using the developing system of rural transaction centres as a potential basis for a system of 'shop fronts' should be considered, and is discussed below.
- 3.260 In the Committee's view, moreover, it is crucial for the success of CMAs that the members of their governing bodies be credible members of the community.

Recommendation 12

- 3.261 **The Committee recommends that the government work through COAG to create in legislation, catchment management authorities (CMAs) and that these authorities form the basic administrative element of each catchment system and, overall, of the national catchment management authority.**
- 3.262 The administrative reorganisation that would best support the recommendations of this report will involve and motivate local communities. In doing so it will deliver co-ordinated programs that are appropriate to the local area and which are consistent with national principles and targets. It is essential then that the delivery mechanism at

the local area is appropriate. It will involve, for example, developing a network of local and regional government bodies as well as non-government organisations (NGO), such as Landcare groups, Bushcare groups and organisations like the Trust for Nature.

- 3.263 The role of the local area organisations is to participate fully in the development of local accredited plans and, with assistance, deliver programs to specific areas. The role of local and regional government is to provide effective administration of state or territory land or water use or planning laws. The role of state government agencies is to provide local expertise, and access to state or territory government administrations.
- 3.264 The role of the catchment management authority or its regional elements is to ensure that all these organisations work to implement the national principles and targets. It also has the role of co-ordinating their activities across the catchment. On this model, it would work with local authorities (e.g. shire councils, municipal councils, residents groups) or NGO's.
- 3.265 Such an approach will overcome one of the ongoing problems in this area. National and state administrations are often seen as remote and unconnected with local communities and the problems that face them. The same view may also develop of whole of catchment authorities. It was clear from the evidence presented, and other evidence gathered, that the success of catchment management plans will depend upon the support of individuals working at a community level and, importantly, local communities. For this reason, the Committee believes that the delivery of catchment management programs to a local level should occur through organisations that operate at a local level, in effect, regional catchment management committees.
- 3.266 As discussed in the next chapter, programs to address environmental problems and implement the ecologically sustainable use of Australia's catchment systems will rely on the expenditure of public monies. The community must be assured that their money is used appropriately. Local mechanisms are best suited to incorporate a high degree of transparency and accountability.
- 3.267 The Goulburn Broken Catchment Management Authority (GBCMA) is considered by the Murray Darling Basin Ministerial Council to be a successful example of a catchment management committee.⁹³ An outline of the work of the GBCMA is given in Box 3.1.

- 3.268 The Committee believes that each catchment management authority should broadly operate along the lines of the Goulburn Broken Management Authority, with a local management authority having the overall responsibility for the delivery of solutions in its area and co-ordinating the delivery of solutions provided by partner organisations (detailed in the next section).

Box 3.1 The Goulburn Broken Catchment Management Authority

The Goulburn Broken Catchment Management Authority (GBCMA), was one of nine authorities and one board established in 1997 under the *Catchment and Land Protection Act 1994*. The authority is responsible for the delivery of solutions in its local area, and is accountable to a peak body – the Victorian Catchment Management Council.

The catchment covers 17% of Victoria, contains approximately 200,000 people and produces 26 per cent of Victoria's rural export earnings. It makes up 2% of the Murray-Darling Basin but supplies 11% of the basins water resources. The GBCMA has established a number of projects including:

- Establishing partnerships between the community, industry, government and local government.
- Working on an ecosystem services project in partnership with the CSIRO and the Myer Foundation. The project aims to place a value on ecosystem services, which are the services that the environment provides to the community, such as clean air and water, and crop pollination. The project also works to provide incentives for farmers to improve land use practices.
- Incentives to improve the management of the riparian zone. These areas have been given a high priority for investment because of the water resource implications and their biodiversity values.
- Developing the Lower Goulburn Floodplain sanctuary. This project recognised the importance of the services provided by the floodplain, such as filtering out excessive nutrients, and sediment deposition.
- Restructuring of the levee system. In the past, levees were built on either side of the river to prevent flooding, however the banks still broke when a 10 year or greater flood event occurred. The last major breach of the levees in 1993 caused \$20 million in flood damage. Studies showed that the best solution was to let the floodplain operate naturally. This required the acquisition and restoration of 10,000 hectares of floodway. About half this area will be managed for environmental outcomes, as much of the land is also immediately adjacent to an internationally significant wetland.

Accredited Management Plans

- 3.269 It is essential that all programs are appropriate and use resources efficiently. It is also essential that all programs are co-ordinated so that programs along the length of a catchment are harmonised.
- 3.270 The Committee believes that these aims are best met if all programs that seek to address some aspect of the ecologically sustainable use of Australia's catchment systems, are approved by the national catchment authority or one of its divisions. The Committee also believes that to encourage approval, it be a funding condition that programs are accredited. Basic criteria for accreditation are that the proposed program satisfy the national principles and are likely to attain the national targets. This will ensure appropriate programs are delivered, efficient use of funds and co-ordination between regions and areas.
- 3.271 The Committee recognises, however, that developing a management plan will involve using a range of information and having access to expertise. The CMAs are obvious conduits of such information and expertise and the Committee considers that they should be involved in the development of all plans to ensure that appropriate plans are developed without undue delay.

Recommendation 13

- 3.272 The Committee recommends that all programs that affect the ecologically sustainable use of a catchment area, region or system, be accredited by the proposed NCMA (or local CMA), or its equivalent, and that funding be provided only to accredited programs.**

Local and Regional Government

- 3.273 As indicated already, local and regional government has an existing infrastructure that can be used for ensuring that catchment management complies with national standards and that it is co-ordinated between administrative regions. The states and territories should be encouraged to devolve to a local area the regulation of catchment use under accredited plans. This is an approach taken in *Managing Natural Resources*:

It is thus appropriate that consideration be given to legislating to place an onus on local governments to take account of matters associated with natural resource management—such as zoning,

planning, consideration of development proposals, management of local government lands—and to require that their planning and development decisions be consistent with catchment and regional plans.⁹⁴

- 3.274 At present, local government boundaries do not always match catchment boundaries. It would facilitate effective administration if they did. It would also facilitate administration, and more effectively utilise existing infrastructure if the responsibilities of local government with respect to land planning laws were clarified.
- 3.275 The Committee does recognise that co-ordination between areas will be promoted if all organisations, which conduct activities that affect land use, are required to act according to an accredited management plan. This is especially the case of local government bodies. However, the Committee believes that co-ordination of programs and ease of administration will be enhanced if, in addition to requiring local governments to comply with an accredited management plan, the area administered by a body coincides with a natural catchment area or region.

Recommendation 14

- 3.276 The Committee recommends that when local government boundaries are revised they be, as far as practicable, aligned with the natural divisions within catchment systems.**

Recommendation 15

- 3.277 The Committee further recommends that the Government work through COAG to obtain agreement from state governments that they will enact such legislation as is needed to require local governments to exercise such powers as they possess in ways that are consistent with the national principles and targets for the ecologically sustainable use of Australia's catchment systems.**

94 AFFA, *Managing Natural Resources*, p. 28.

Partner organisations

- 3.278 Evidence demonstrated clearly that different types of organisations had roles to play in delivering programs. Apart from government agencies, private, for profit organisations, and voluntary associations already provide many programs. Landcare, Bushcare and Coastcare are voluntary organisations that provide many valuable programs.
- 3.279 The Committee believes that the administrative arrangements should not discourage participation as it is essential to the success of the catchment management effort that as large a number of interested organisations be involved. However, the Committee is mindful that ensuring that public funds are spent efficiently and that appropriate programs are delivered effectively are essential elements in ensuring public support and attaining the outcomes needed.
- 3.280 The Committee considers that the most effective solution is for the national catchment authority to accredit 'partner organisations'. Partner organisations could be state or territory agencies, local government organisations, private conservation trusts, voluntary conservation groups, or individuals.
- 3.281 The role of partner organisations will be to deliver accredited programs that meet the nationally mandated principles and targets. Partner organisations could act as 'program brokers', working directly with small groups or individuals. This would diminish the need for small groups or individuals to deal with red tape. Over time, 'off the shelf' programs could be developed and once accredited, they could then be delivered if judged appropriate, to a particular location.

Recommendation 16

3.282 **The Committee recommends that:**

- **formal recognition be given to 'partner organisations';**
- **eligibility criteria for accreditation as a partner organisation, be enacted;**
- **that accreditation as a partner organisation be reviewable and subject to special conditions; and**
- **all contracts with partner organisations and between partner organisations and other suppliers or clients, be tabled within three months of signature if the contract involves the expenditure of public monies.**

Recommendation 17

- 3.283 The Committee recommends that all programs that affect the ecologically sustainable use of a catchment area, region or system, be accredited by the proposed NCMA (or local CMA), or its equivalent, and that funding be provided only to accredited programs.**

Access to information, expertise and skills

- 3.284 As noted, the lack of information on the ecologically sustainable use of Australia's catchment systems and the lack of access to this information, as well as lack of access to appropriate skills and expertise, is reducing the effectiveness of existing programs, preventing the growth of programs and the development of public awareness.
- 3.285 The need for the community to have reliable access to information and expertise cannot be underestimated. Furthermore, given that many communities are suspicious of government motivations, particularly in rural areas, the information needs to come from people that communities can relate to and feel that they can trust.
- 3.286 One of the most effective ways to motivate communities, foster a renewal of community spirit and support, and to deliver information, skills, expertise is through community catchment centres. The Committee noted the work of the Herbert Resource Information Centre (HRIC) in Queensland. The committee believes the HRIC should be used as a model for the development of a nationwide network.
- 3.287 The background to the HRIC is that Geographic Information Systems (GIS) and access to spatial data has, for the most part, been beyond the reach of the general community. Holders of information may impose charges for access; or access may be difficult in rural areas owing to a lack of appropriate infrastructure. This is particularly the case for rural Australians, where, owing to lack of access, modern technology has only marginally alleviated the 'tyranny of distance'.
- 3.288 A group of organisations in the Ingham district of North Queensland signed a 10-year partnership that established the Herbert Resource Information Centre (HRIC). This initiative draws together data resources from a range of sources. It provides access to that data for a range of organisations and individuals with a stake in the future of the Herbert River Catchment.

- 3.289 The HRIC is rural, collaborative, and community focussed. The ten-year agreement has six signatory partners: CSR Sugar Mills; Herbert Cane Protection and Productivity Board; Hinchinbrook Shire Council; Canegrowers Herbert River; CSIRO; and Queensland Department of Natural Resources.
- 3.290 The HRIC is founded upon and espouses three ideals: technology transfer, capacity building, and community empowerment. The HIRC internet site says that:
- Our vision is that the HRIC be used by the partners and the wider community to ensure the ecologically sustainable development of the Herbert River Catchment. We believe that the HRIC is unique, and that it represents a working 'best practice' model for other areas of Australia.⁹⁵
- 3.291 As a result, the Ingham community now has access not only to spatial data but also to the tools to analyse it, GIS expertise, and a framework for cooperative data exchange and maintenance.
- 3.292 The activities of the HRIC has not been confined to the rural and rural-urban communities. The HRIC has also been actively involved in information dissemination and capacity building amongst the next generation of community leaders: the school children. The HRIC did this by introducing geographical information systems into schools in Queensland. This alleviated one of the of the greatest problems faced by teachers when designing a GIS curriculum for students: the availability of datasets. Owing to the cost of datasets, most are well out of reach, given public school budgets.⁹⁶
- 3.293 The efforts and costs involved in setting up a collaborative GIS is large for a small community. However, as the HRIC internet site observes, it is 'not nearly as great as the massive returns to the community by 'spin off' benefits'.
- 3.294 It was also clear from the evidence that catchment management will be most effectively delivered through a network of local offices and a network of co-ordinators and extension officers who can take information and skills 'down to the coal face'. This network can also facilitate a two way process – assisting in the development of accredited plans by landholders and community members at a personal level, and communicating the experiences of landholders to catchment authorities,

95 Downloaded from <http://hric.tag.csiro.au/information/publications/collgis.html>, accessed 17 October 2000.

96 Downloaded from <http://hric.tag.csiro.au/information/schools.html>, accessed 17 October 2000.

where their experience can be integrated into the overall planning processes.

- 3.295 Dr Craik, of the NFF, advised the Committee that paid co-ordinators were vital to the success of information and skills delivery. Ms Anwen Lovett, also from the NFF, testified that:

Some of the feedback I often get is that one of the biggest losses is that of extension officers with technical expertise in the regions. People really miss having access to those sorts of people, so certainly we would like to see more of that.⁹⁷

- 3.296 Support for such an approach was revealed unequivocally in the report of the Steering Committee on *Managing Natural Resources*. The Steering Committee reported that, 'There was general agreement that 'face to face communication and working together in groups rather than passive provision of information is needed' and the Steering Committee proposed ready access by landholders and regional communities to data and information on resource condition at the local and regional/catchment level.

Recommendation 18

- 3.297 **The Committee recommends that the Government develop a program to foster the development of, and access to, the internet for rural Australians and the development of information data bases pertaining to the ecologically sustainable use of Australia's catchment systems that can be accessed over the internet.**

⁹⁷ *Transcript of Evidence*, p. 304.

Recommendation 19

3.298 The Committee recommends that the Government expand the operation and purpose of the rural transaction centres to include, but not be limited to:

- **Providing ready access to information and expertise on the ecologically sustainable use of Australia's catchment systems, and access to education and advice services;**
- **Acting as a shopfront for regional management authority offices; and**
- **A base for catchment management extension officers and program co-ordinators.**

Recommendation 20

3.299 The Committee recommends that the Government, in co-operation with the states:

- **establish a network of local people who can act as local area co-ordinators and catchment management extension officers who will advocate for the ecologically sustainable use of Australia's catchment systems;**
- **provide appropriate training to these people; and**
- **encourage, with the states, the re-establishment of a system of extension officers whose duty will be to facilitate the development and implementation of local catchment programs.**

Funding and Resources

Introduction

- 4.1 Effective programs for the ecologically sustainable use of Australia's catchment systems will be implemented only if they are supported by sufficient levels, and appropriate types, of funding.
- 4.2 'Funding' typically refers to the money invested to obtain an outcome. However, this report takes a broader view, regarding funding as anything of value (which may be measured in monetary terms) used to promote the ecologically sustainable use of Australia's catchment systems.
- 4.3 What can count as 'funding' is very broad. It may be money, time, the allocation of land for a conservation program, retiring land altogether from productive use, or changing agricultural activities so that they embody ecologically responsible practices.
- 4.4 Funding has to come from some source. A number of different things, or sources, will motivate a person to allocate funds (money, time, property) to an ecological purpose. These can include regulation, monetary grants, direct purchase of land, or access to information and expertise. Possible funding sources are set out in table 4.1.
- 4.5 Some sustainable land management practices may require agriculturalists to refrain from farming practices that would, if implemented, increase their incomes. As a result, income may be foregone in the short and even medium term. In this report, the Committee wishes to note the financial costs associated with opportunities forgone due to the adoption of sustainable land use practices. This issue will be examined in greater detail in the report of the Committee's inquiry into public good conservation. It is anticipated that this report will be tabled sometime in 2001.

- 4.6 In this chapter the Committee examines the evidence for the amount and source of funds required and the different options available to fund the ecologically sustainable use of Australia's catchment systems.

Approaches to funding

- 4.7 Given the extent of the problems, it is clear that considerable levels of funding will be required for a long period of time. The amount of money to be invested in attaining the ecologically sustainable use of Australia's catchment systems will be the most significant single investment program ever undertaken in Australia. The number of people involved, the amount of time, and the changes in land use that will need to occur, will represent an in kind investment running into the tens of billions of dollars.
- 4.8 Moreover, it is clear that effective programs will involve a mix of private initiative and public funds. It is essential that the funding mechanisms are appropriate to the task at hand and actually deliver the outcomes wanted.
- 4.9 Furthermore, as noted in chapter 3, the ecologically sustainable use of Australia's catchment systems will rest upon high levels of community participation. Participation will occur only if the administrative and funding systems are considered by the community to be open, understandable and credible. The community will view the systems as open, understandable and credible only if they are open and accountable.

Recommendation 21

- 4.10 **The Committee recommends that funding systems be open, understandable and accountable and that any allocations made under a system be reported in the annual report of the Department that administers the funds.**

Levels of funding

- 4.11 It is now generally recognised that the funds required to ensure ecologically sustainable use of Australia's catchment systems will come from two sources: from taxation revenues and from private sources.
- 4.12 Estimates of the total amount of money required differ. Dr Carl Binning from the CSIRO was reported to have estimated that over the next ten to twenty years, 'at least \$100 billion had to be pumped into the environment'.¹ This would require, on average, \$5 billion to \$10 billion per annum.
- 4.13 In a widely publicised speech, Treasury secretary Mr Ted Evans is reported to have estimated that the cost of repairing the Murray-Darling Basin to be at least \$30 billion.²
- 4.14 This figure can be compared to that provided in an ACF/NFF study³ which suggested that a capital investment of \$60 billion was required over a ten year period, with an annual maintenance program of \$0.5 billion. This represented a total annual investment of \$6.5 billion from all sources. Public expenditure would need to be about \$33.5 billion over the decade, involving \$3.7 billion per year, including an ongoing maintenance program of \$320 million per annum.
- 4.15 Evidence provided to the Committee indicated that the present levels of funding provided by all levels of Government was inadequate. Ms Anwen Lovett testified that:

I have had quite a lot of anecdotal feedback from people who have been part of developing quite detailed plans for regions and who say that there has then been no funding to implement them, or they get a small amount of funding for a particular part of the plan and not the plan in its entirety. The whole point of having a plan is to deliver the package; otherwise you do not get the integrated outcome you need at the other end. It comes down to commitments to funding to actually implement the plan. There are a lot of regional plans out there that are not being implemented. However, there are some good examples, particularly over in Western Australia, where they have been confronted by dryland salinity far sooner than a lot of areas in the east. There are quite

1 M Moscaritolo, 'Put a price on nature', *The Herald Sun*, 22 September, 2000, p. 52.

2 P Coorey, 'At last, environment is on the agenda', *The Advertiser*, 10 July, 2000; P Cleary, 'Treasury warns on surplus', *The Financial Review*, 7 July, 2000.

3 NFF/ACF, National investment in rural landscapes, April, 2000, p. i.

good examples that I would encourage you to get information on through organisations such as the Land and Water R&D Corporation.⁴

- 4.16 The amount of money required is not known with certainty. However, it is clear that the present levels of funding from public and private sources, is inadequate.
- 4.17 It is essential in effective planning for the community to be mindful of the level of funding, both public and private, that will be required to implement policies for the ecologically sustainable use of Australia's catchment systems.
- 4.18 Although various community groups are aware that large sums of money are required to fund remedial programs, it is also apparent to the Committee that there is no widespread public awareness of the large sums of money required to address the environmental problems that face the nation. The Committee believes that widespread community support for increased public funding for environmental programs will be generated if both the magnitude of the problems is revealed along with the financial costs of inaction. The Committee will discuss the issue of increased public awareness and public education programs in its report on its inquiry into public good conservation.
- 4.19 The Committee concludes that the Government should work towards establishing an estimate of the overall cost of addressing environmental degradation and implementing sustainable environmental practices. The Committee also concludes that the Government should, as part of the cost-assessment project, determine the value of the financial contribution required from public funds and the value of the contribution required from private funds. Furthermore, the Committee will discuss the issue of funding levels and options in its report on its inquiry into public good conservation.**
- 4.20 As public and private funds flow into ecologically sustainable land use programs, it is important that the funds are used efficiently. It is essential that one policy area does not undermine the capacity or the motivation of individuals or communities to develop ecologically sustainable land use practices. For example, a recent survey of dairy farmers concluded that deregulation of the dairy industry had resulted in lower milk prices. This has increased uncertainty in some areas of the dairy industry. This in turn may reduce the capacity of some dairy farmers to invest in environmental management, at a time when market pressures are promoting more intensive production. In addition, more intensive production may involve

4 *Transcript of Evidence*, p. 293; see also Anon. 'Still unready for tax' *The Land*, 5 October, 2000, p. 30.

greater effects upon the environment. As a result, an integrated package of environmental and production orientated programs may be required in order to produce structural adjustment along with responsible environmental outcomes.⁵

- 4.21 The need for an integrated package of environmental and production orientated programs is also demonstrated by the possibility that foreign markets will link trade and market access for Australian goods, on the one hand, to the environmental impact of the production processes of the goods, on the other. Dr Craik told the Committee that standards for ecological sustainability may be applied by other countries to Australia's export industries. The result will be that if Australia's products fail tests of ecological sustainability or are not accredited, Australian products may face, in effect, non-tariff trade barriers. Foreign markets may not permit Australian products to be sold, or they may impose a tariff upon them or labelling restrictions. This will impose upon Australian products a market disadvantage. Dr Craik also noted that the prospect of such barriers may, in fact, promote attitudinal change in favour of ecologically sustainable land use practices and confer upon those producers a market advantage, internationally and domestically:

I think we will see that trade restrictions and the need for meeting particular standards—whether it is fair or not fair and whether we challenge it legally or not—are going to be facts of life and that somehow we are going to have to deal with them. Initially, we will probably see those who feel that they really want that market using it as a market advantage and actually going out of their way to do something to actually get into a market because they want the premium that is in it. I think it will be a driver, much as I think we have seen the supply chain be a real driver of QA through the farm sector—that their goods just will not get bought by Woolworths or whatever if they have not met these specific criteria.⁶

- 4.22 The capacity of some government policies to unintentionally cause environmental degradation has been noted in other reports. The Industry Commission pointed out, 'poor program design is also reflected in perverse outcomes resulting from some government policies.'⁷ The

5 National Land and Water Resources Audit, *Natural resource management on Australian dairy farms*, September, 2000, p. 14.

6 House of Representatives Standing Committee on Environment and Heritage, inquiry into public good conservation, *Transcript of Evidence*, p. 240.

7 Industry Commission, *A full repairing lease: inquiry into ecologically sustainable land management*, 27 January 1998, p. 117.

Commission identified as an example of a perverse outcome, government policies that lead to subsidisation of irrigation water.⁸

4.23 Perverse outcomes are also evident in relation to a number of land clearing issues. In a separate inquiry into the costs of conservation on private land currently being undertaken by the Environment and Heritage Committee, a number of submissions commented on the inconsistency created by some of the current natural resource management strategies.⁹ For example:

- there is currently some discussion that if a carbon credit trading scheme is implemented, landholders will only be able to gain credits for trees that are less than ten years old, therefore encouraging farmers to clear original vegetation and plant new trees.
- Dr Carl Binning and Dr Mike Young identified certain incentives and tax concessions that promote the clearing of indigenous vegetation.¹⁰

4.24 Another example of counter-productive arrangements concerns local government rates and state government land tax. In most of the states and territories, the local government rates on land and land taxes used for primary production purposes are generally lower than rural land not currently being used for primary production. This means that if a landholder wishes to conserve a particular area, in addition to the costs incurred through managing that land, they must also pay higher local government rates for the privilege of being able to do so.

Recommendation 22

4.25 **The Committee recommends that an audit of policies be conducted to identify counter-productive incentives in respect of promoting ecologically sustainable land use that are contained in Commonwealth, state and territory programs and that proposals be developed for their removal.**

8 Industry Commission, *A full repairing lease*, p. 117.

9 For example, see K Lloyd, Submission no. 28, p. 1; A Stoneman, Submission no. 63, p. 3; NSW Farmers' Association, Submission no. 1777, p. 13.

10 C Binning and M Young, *Talking to the Taxman about Nature Conservation: proposals for the introduction of tax incentives for the protection of high conservation value native vegetation*, 1999, p. 22.

Sources of Funds

- 4.26 There are two major sources of funds to underwrite ecologically sustainable land use. The public sector obtains funds by way of taxation or other charges, such as rates, and disburses this funding through annual budgets, passed by a parliament or local government body.
- 4.27 In contrast, the private sector has a large number of funding sources. Some are based on landholders conforming to various land use rules and regulations, but by far the largest number are voluntary. The following Table 4.1 (below) sets out the major forms of funding mechanism.
- 4.28 The Committee was advised by Dr Wendy Craik that no single funding solution was appropriate to all cases:

We [the NFF] believe that a combination of tools—market incentives, public good funding and rebates, for example—will be required. Flexibility will obviously be required for customised delivery. Supplementary government funding is likely to be required to facilitate the establishment of markets in both carbon and salt because commercial returns have yet to be established.¹¹

11 *Transcript of Evidence*, p. 292.

Table 4.1 Summary of Funding Mechanisms

	Dependability and Certainty	Cost Effectiveness	Information Revelation	Targetability	Transparency and Ability to be Evaluated	Community Acceptability
Regulation	Regulation in general is certain. Degrading native vegetation by stealth is possible but not much information is available regarding the extent to which this occurs.	Cost effective only when serious losses imminent.	Only limited information provision: when people are willing to accept the relevant fine/penalty then they perceive benefit to be larger than value of the fine.	A blanket measure but can be targeted through exemptions and permit system.	Transparent since punishments are published in legislation. Difficult to evaluate since the extent to which it prevents biodiversity losses unknown except at a broad level.	Can be troublesome because of differences in opinion regarding property rights. This may be affected by education and elapse of time.
Voluntary agreements – land for Wildlife	Voluntary so less certain than regulation.	Keeps budgetary costs low.	Provides information about specific sites.	Voluntary so limited, but can approach specific sites and use land purchase (revolving fund).	Transparent and easily evaluated.	Voluntary so well accepted.
Conservation Covenants	Voluntary so less certain than regulation.	Reduces budgetary costs by involving private participants.	Provides information about specific sites.	Voluntary so limited, but can approach specific sites and use land purchase (revolving fund).	Transparent and easily evaluated.	Voluntary so well accepted.
Land purchase	Voluntary so less certain than regulation.	Depends, generally, on whether land is near current reserve and large in area.	Purchase price an indicator of land profitability.	Voluntary so limited but can approach specific sites.	Transparent and easily evaluated.	Voluntary so well accepted.
Conservation contracts: auctions	Voluntary so less certain than regulation.	Maximise participation in positive conservation at minimum budgetary cost. Enforcement and monitoring costs need to be evaluated prior to introduction. Relatively cheaper than one-to-one negotiation to achieve a given amount of land-	Will reveal information about opportunities forgone when conservation undertaken. Ability for some to shade their true preferences but helps to minimise this problem.	Targets economically-driven landholders who may not respond to voluntary schemes. Some targeting can be built into the benefits index.	Transparent and easily evaluated.	Voluntary so well accepted. There may be government resistance due to transparent budgetary cost. Will alert landholders to which activities and areas are valuable if payment schedule is constructed carefully. If priorities not constructed carefully

	Dependability and Certainty	Cost Effectiveness	Information Revelation	Targetability	Transparency and Ability to be Evaluated	Community Acceptability
		use change.				may mislead landholders.
Tax incentives	Voluntary so less dependable than regulation.	Does not spur competition amongst landholders for the private provision of biodiversity maintenance.	Limited.	Voluntary so limited.	Very limited as information on conservation activities not available.	
Government-assisted community programs	Voluntary so less certain than regulation.	Reduces budgetary costs by involving private participants.	Same as management agreements (given that there are good links between the community groups and government.	If regional groups have information on high-value biodiversity sites, can be targeted specifically. Government needs to ensure targeting is consistent with its priorities.	Transparent if good information feedback to government. Requires close links between government and the community group.	Depends on size of community group (larger membership will mean more of community involved and therefore more ownership and acceptance). Depends on community group's <i>modus operandi</i> . For example, a group that educates its community and is non-confrontational will promote positive attitudes.

Source: G. Stoneham, et al, *Mechanisms for Biodiversity Conservation on Private Land*, attachment to Submission no. 235, House of Representatives Standing Committee on Environment and Heritage, *Inquiry into Public Good Conservation*.

4.29 Some programs will be best delivered by way of a direct grant, for example, to a Landcare group; other programs may be funded by way of targeted taxation concessions, while other programs may be best delivered through the creation of a market and the trading of various rights.¹² No one approach will be appropriate for all situations, and it is important that expertise be developed to determine the best approach in any situation. It is also essential, in the Committee's view, that the selection of a funding mechanism is driven by the requirements of the particular case. As well, given the community focus of the Landcare movement, it is essential to the success of an funding mechanism that the reasons for the selection of that particular mechanism are publicly known and supported by the community.

The Public Sector

4.30 A major source of funding catchment programs will be the public sector, and it will be by way of various taxation measures. Taxation revenue will be expended on catchment management programs in two ways:

- taxation revenue can be allocated by amending the taxation and revenue laws, at either a Commonwealth, state, territory or local government level, so as to provide some form of rebate or concession for the ecologically sustainable use of land; or,
- by some form of appropriation by the Commonwealth or a state or territory, leading to a monetary grant or other form of subvention supporting a program or activity.

4.31 A problem that has been brought to the attention of the Committee is the variety of sources of funding. Dr Wendy Craik testified:

... there has been some concern amongst our constituents about having different buckets of money rather than having one large funding source, which has made it confusing. Perhaps this has not delivered outcomes that are as beneficial as they might otherwise have been if there was one pot of money labelled under one particular program.¹³

12 For example, the successful salinity trading scheme in the Hunter Valley. This scheme began on 1 January, 1995 and is the only scheme in the world based on real time environmental conditions. See A Wahlquist, 'Trading scheme reduces river salt', *The Australian*, 23 September, 2000, p. 18.

13 *Transcript of Evidence*, p. 292-293.

- 4.32 Multiple sources of public funding lead to confusion and an inability to measure costs. They make control of expenditure more difficult, thereby diminishing the ability of responsible agencies to ensure appropriate and accountable use of public funds. These problems arise in connection with public funds disbursed by government agencies through to programs provided by community groups. These problems do not occur, however, when a department of the Commonwealth operates its own program, such as those operated by the Department of Defence. In such cases, the provider of the service has an immediate and clear link with the sole funder. The Committee considers that the multiple sources of funding available in this area highlights the need for a high degree of co-ordination across funding bodies.

Recommendation 23

- 4.33 **The Committee recommends that all Commonwealth funding for programs for ecologically sustainable land use, be aggregated and co-ordinated for performance monitoring and reporting purposes, and be aligned with national plans.**

- 4.34 The importance of taxation incentives as a central element in promoting the ecologically sustainable use of Australia's catchment systems was pointed out in a recent discussion paper:

Taxation is recognised as a fundamental driver of philanthropy; a mechanism through which community-business partnerships can be facilitated. This mechanism allows business to do what they do best – develop innovative solutions to complex problems in a way that is largely free of bureaucracy.

To successfully engage the philanthropic sector several factors need to be addressed:

- Conservation has to be transformed from one of the most highly taxed land-uses in Australia to a land-use that enjoys taxation treatment commensurate with the public benefits associated with our natural heritage;
- Practical on-ground environmental management needs to be given an increased profile and promoted as part of the core business of the charitable and philanthropic sectors;

- Mechanisms that facilitate and promote the creation of private conservation Trusts need to be established.¹⁴

4.35 Public funds, collected through taxation, together with tax rebates and deductions can motivate landholders to become involved in ecologically sustainable land use practices. Dr Wendy Craik, made the point in this way:

... governments might contribute something like \$3.5 billion a year and the private sector about \$3 billion per year over a 10-year period and that the public money would be largely used to leverage private money so that you would get investment in areas where you would not get it if there were a proposal to have just private investment alone.¹⁵

4.36 Dr Craik also informed the Committee that not only were the overwhelming majority of farmers prepared to invest their own funds, but that the amount of public money was amplified many times over:

The ABS did a survey a couple of years ago and they asked farmers whether they were prepared to invest money out of their own pockets. I think 87 per cent said they were. Then there were some figures suggesting that every government dollar put into a lot of these projects generates something like \$3 to \$13 of community or private money into the project as well. So in fact we would see the government money as leveraging private investment. I suppose in particular areas we would be thinking that a lot of that would come through some money from the government—to lead to planting trees in particular. If you had some money, you might actually get the private sector to put in money to actually make it a going proposition because by itself it just would not be a strictly commercial proposition without government assistance.¹⁶

4.37 The conclusion of the Committee is that public money, raised and provided through the taxation system, will underpin the ecologically sustainable use of Australia's catchment systems. It will do this by seeding and motivating private investment. Without public support, private investment will not occur to the same extent.

4.38 The use of public funds, provided through the revenue system appears to be the way that conservation measures are funded in the United States.¹⁷

14 C Binning and M Young, *Philanthropy: sustaining the land*, The Ian Potter Foundation: Melbourne, 1999, pp. 5-6.

15 Inquiry into public good conservation, *Transcript of Evidence*, p. 223.

16 Inquiry into public good conservation, *Transcript of Evidence*, p. 225.

17 Appendix F outlines the approach taken in the United States to conservation.

There, sympathetic taxation arrangements have fostered private philanthropy. The result is that in the United States, the non-government sector has placed large amounts of land under conservation programs. One trust alone, the Nature Conservancy, now protects over 9 million areas (3,642,300 hectares). The Nature Conservancy has an annual turnover of over \$US450 million, and is one of the top 10 charities in the United States.

- 4.39 Table 4.2 summarises and compares the current taxation arrangements in Australia with those in the United States in respect of philanthropic disposal of land. Appendix G summarises and compares the current taxation arrangements in Australia with those in the United States in respect of specific financing mechanisms.

Table 4.2 Basic Ways of Giving

Tool	US Situation	Australian situation	Changes Required
Cash donation	Cash donations are deductible and can be apportioned over 5 years	Cash donations are deductible only in the year they are made	Apportionment over 5 years
Donation of assets – eg shares	Deduction at full market value Capital gains exempt May be apportioned over 5 years	Deduction at full market value from 1 July 1999 Subject to capital gains	Capital gains tax exemption Apportionment over five years
Land	Deductible Capital gains exempt May be apportioned over five years	Deductible from 1 July 1999 Capital gains tax exemption Apportionment over five years ¹⁸	
Bequests	Exempt from Capital gains tax	Exempt from Capital gains tax from 1 July 1999	

- 4.40 Information available to the Committee indicates that the taxation arrangements in Australia are not particularly sympathetic to developing public and private investment in the ecologically sustainable use of

18 As reported by Senator the Hon. Robert Hill, Minister for the Environment and Heritage in 'Donate to the environment – tax incentives', media release, 30 June 2000.

Australia's catchment systems. Not only is there insufficient public funding available, but:

- the private sector does not enjoy sufficiently motivating incentives to enter into ecologically sustainable land use practices; and
- the taxation incentives that are available are poorly targeted.

4.41 A 1996 report by Colin Mues, Lynelle Moon and John Grivas, *Land Care: Tax Provisions*¹⁹, concluded that the current system of tax deductions provides a much higher subsidy equivalent for land care works to individuals in the higher taxable income groups who are liable to a higher marginal income tax rate. As a result,

... there is a significant number of broadacre farmers who are estimated to rarely earn sufficient taxable income to enter the top marginal income tax brackets and many others who are estimated to earn less than the tax free threshold. The current concessions offer these groups only modest or no additional incentives to undertake land care related works.²⁰

4.42 The Committee notes that amendments to income tax legislation in 1998 are likely to provide an incentive to landholders on low incomes to engage in landcare activities. The amendments allow landholders to claim a rebate of 34 per cent on expenditure up to \$10,000 on landcare activities.²¹ Based on figures published by ABARE, these changes will be of benefit to approximately 60% of primary producers.²² However, landholders on incomes liable to tax at the highest marginal rate will still have access to a much higher level of subsidy, while landholders on low incomes may find the initial outlay prohibitive in terms of their farm budget.

Recommendation 24

4.43 The Committee recommends that the Government develop options for increasing the taxation incentives to participate in landcare activities for landholders on low incomes.

19 Australian Bureau of Agricultural and Resource Economics (ABARE) Research Report 96.6, Commonwealth of Australia: Canberra, 1996

20 ABARE Research Report 96.6, p. 63.

21 *Taxation Laws Amendment (Landcare and Water Facility Tax Offset) Act 1998*; Act 91/1998.

22 C Binning and M Young, *Talking to the Taxman about Nature Conservation*, pp. 28-29.

- 4.44 Even given the amendments in 1998, it is still the case that, under the present tax system (and as noted in the ABARE report), it is not possible to target tax concessions at land degradation problems that are causing the most significant 'off-farm' or public costs. 'There was no evidence' the report noted,
- ...that greater incentives are being offered to farmers who are dealing with land degradation problems that have significant off-farm costs. In this respect, the current system of deductions, and probably all tax instruments, are not well targeted.²³
- 4.45 The report noted that there are other taxation instruments which could potentially make the level of benefit provided by the tax concessions less dependent upon taxable income and in that way provide a greater range of incentives to agriculturalists, irrespective of taxable income. The other instruments mentioned are:
- a system of refundable tax credits;
 - a system of tax rebates; and
 - an investment allowance
- 4.46 Dr Carl Binning and Dr Mike Young of the CSIRO have conducted a number of studies on the effect of tax²⁴ policies at a national, state and local government level on the development of ecologically responsible land use practices.²⁵ Dr Binning and Dr Young identified a number of initiatives that could promote more ecologically responsible land use. These include:
- The definition of landcare activities contained in the *Income Tax Assessment Act 1997* should be amended to better reflect landcare outcomes;
 - Providing more incentives to landholders to place land under a conservation covenant; for example, tax deductions and rate reductions and allowing deductibility of maintenance costs;
 - Providing the tax concessions and rebates available to primary producers to landcare groups;²⁶

23 ABARE Research Report 96.6, p. 64.

24 'Tax' is taken here to refer to rates, service charges, levies, licence fees, as well as those charges usually referred to by the term.

25 C Binning and M Young, *Talking to the Taxman about Nature Conservation*, C Binning and M Young, *Conservation Hindered*, Environment Australia: Canberra, 1999; C Binning and M Young, *Beyond Roads, Rates and Rubbish*, Environment Australia: Canberra, 1999; C Binning and M Young, *Opportunity Denied*, Environment Australia: Canberra, 1999

26 C Binning and M Young, *Talking to the Taxman about Nature Conservation*, pp. 13-14.

- The Commonwealth should establish a rate rebate scheme. Local councils would be funded from the scheme to remit rates (and state governments to remit land tax) on land that is used in accordance with an approved management program;²⁷
- Landholders who do not use land for income-generating purposes are unable to deduct the cost of rates and land tax from their income. Landholders should be able to deduct from their income the cost of rates and land tax on land placed under voluntary conservation agreements or covenants;
- Ensure that land use restrictions or use are taken into account when land is valued; and
- Enable local councils to impose levies,²⁸ rates and other charges on the basis of the ecologically appropriate use of land.

Recommendation 25

4.47 **The Committee recommends that the Government conduct a public inquiry into the disincentives for the ecologically sustainable use of Australia's landscape contained in the present taxation arrangements at all levels of government, and make recommendations for change, including costings.**

4.48 At present in Australia there is insufficient funding available from the public and the private sector. The Committee accepts that private sector funding can be motivated by amending the taxation laws to motivate private philanthropy in respect of ecologically sustainable land use.

4.49 The Committee believes, however, that there are many initiatives that will not occur unless there is direct public investment. The community is then faced with obtaining sufficient levels revenue to fund such programs. One suggestion made frequently over the past few years is that a specific tax levy be imposed.²⁹

27 C Binning and M Young, *Conservation Hindered*, p. 12.

28 At present, of all the states, only Queensland permits local government bodies to charge environment levies. See C Binning and M Young, *Opportunity Denied*, p. 9.

29 For example, see D Blackmore, CEO of the Murray Darling Basin Commission, and K Ridge, Executive Officer of the NSW Nature Conservation Council in 'Still unready for tax' *The Land*, 5 October, 2000, p. 30; The Deputy Prime Minister, the Hon. John Anderson MP, 'Salinity tax being considered', *The Canberra Times*, 29 July 2000, p. 3.

- 4.50 The Committee believes that this suggestion has merit. In the past the community has shown its support for tax levies directed at specific purposes. The 'Guns Buyback' scheme is a case in point. The Committee believes that the community would support a levy that was allocated to promoting lasting ecologically sustainable land use.
- 4.51 Different levels have been proposed for the levy. Whilst this is a matter for the Parliament to determine, the following table provides an indication of the amount of revenue that could be raised through a very modest levy imposed on taxable income.

Table 4.3 Funds raised by a levy on taxable income

Type of taxpayer	Total taxable income	Levy	Levy collected
	\$m	%	\$m
Individuals			
Grade of taxable income			
Under \$60,000	208 203	1.00%	2 082
\$60,000 to under \$100,000	36 095	1.25%	451
\$100,000 and above	27 180	1.50%	408
Total	271 478		2 941
Companies	99 737	0.75%	748
Funds	28 843	0.75%	216
TOTAL			3905

- 4.52 Addressing the problems faced by Australia's catchment systems will require programs that operate for a considerable period of time. Stable funding is essential if these programs are to attain the outcomes wanted. Any funding proposal must then be stable and be aimed at providing funding for the long term.

Recommendation 26

4.53 The Committee recommends that the Government examine the feasibility of introducing an environment levy to pay for the public contribution to implementing the policy of the ecologically sustainable use of Australia's catchment systems.

The Committee further recommends that such a the levy:

- **remain in place for no less than 25 years; and**
- **be clearly marked on each taxpayer's taxation assessment notice.**

The Private Sector

4.54 Public funding is intended to motivate the private sector to invest in ecologically sustainable land use practices. The recommendations made already will, if they produce a more sympathetic taxation treatment and state and local government charge system, motivate private sector investment.

4.55 The Committee was advised by Dr Wendy Craik that the members of the NFF prefer voluntary, motivating, incentive-based mechanisms:

In terms of the actual mechanisms that you might use, we would suggest that voluntary agreements with land-holders is one quite successful way to go; payments through agreements to land-holders. We obviously support an approach which is in an incentive based approach rather than a regulatory based approach. There needs to be caution. Things like the clawback of water rights, for instance, without any compensation can cause resentment to conservation and actually set back the cause. We certainly acknowledge that land-holders have a duty of care, but that duty of care needs to have some limits. Farmers cannot be expected to fund in full the community's desire for biodiversity conservation.³⁰

30 Inquiry into public good conservation, *Transcript of Evidence*, p. 224.

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- 4.56 The Committee received evidence of a large array of policy instruments available to promote ecologically sustainable land use. These are set out in table 4.1. Much of this report has provided recommendations that will implement these instruments.
- 4.57 By far the most effective mechanisms that will motivate private sector investment are economic incentives. Economic incentives are those financial incentives or disincentives that will encourage a landholder to select an ecologically responsible land management option.
- 4.58 Economic instruments can be coercive-deterrent in nature, such as fines or charges for ecologically irresponsible practices; or motivating-incentive based, in that the landholder will select an action because of the benefit likely to be obtained. Economic instruments include:³¹
- Carbon trading
 - Salinity credits and other tradeable permits
 - Water quality credits
 - Water rights trading
 - Stewardship payments
 - Levies, subsidies
 - Incentives to retire land
 - Grants
 - Auctioning of project delivery rights
 - Fines
 - Licence fees based on real cost
- 4.59 Much work needs to be done on the application of various approaches to specific projects. In particular, the role of the Commonwealth in creating and managing an (artificial) market where one does not naturally exist must be discussed. There is community resistance to adopting market-based approaches simply on the assumption that the ‘market does it best’.
- 4.60 The community wants, and is entitled to, public policy based on reliable empirical research. Moreover, the ecologically sustainable use of Australia’s catchment systems involves not merely using particular economic instruments, but other policy approaches as well, including most importantly, community motivation.
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31 For a discussion of some of these mechanisms, see AFFA, *Managing Natural Resources*, pp. 39 - 43.

- 4.61 There is one initiative in particular where market considerations merge with community aspirations: conservation covenants. The Committee believes there is considerable scope for the Commonwealth, state and territory administrations to significantly increase the incentives available to the private sector by motivating conservation covenants.
- 4.62 Conservation covenants address two major areas of concern that undermine efforts to motivate participation in, and private and public funding of, catchment conservation programs:
- Community concern that catchment programs funded from public sources produce lasting improvements;
 - Landholder concern that participation in landcare programs that involve reconfiguring land management practices do not diminish the viability of their farming enterprises.
- 4.63 An area of community concern is ensuring that the improvements made in land use and catchment health as a result of contemporary efforts are not undone at some later time. The Committee is concerned that a cycle does not develop of catchment improvement, selective degradation followed by calls for community support to repair resulting damage.
- 4.64 The Committee also recognises that there is concern regarding reasonable expectations that private landholders should manage land in a responsible and ecologically sustainable way without the incentive of financial rewards. The Committee will examine this issue further in its report on its inquiry into public good conservation.
- 4.65 The attainment of long term and long lasting improvements in return for the allocation of public funds is already an established feature of public policy. The NHT *Guide for New Applicants 1998 – 1999* states in part:
- The Commonwealth owes it to taxpayers to ensure that that its investment leads to long term change towards sustainability.³²
- 4.66 Changes to landuse may involve landholders in additional expenses and in some cases these may be of an ongoing nature. For example, a landholder may decide to retire a portion of their land from production or alter its use, leading to lower income from the land. However, the landholder will generally face local government charges and state land taxes. Landholders incur expenses for such land and may, overall, experience as a result diminished levels of income.
- 4.67 One way that landholders and the community can address these concerns is through the use of incentive supported conservation covenants.
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- 4.68 Conservation covenants are voluntary agreements that permanently bind a landholder and all successors, in respect of the way that the land covered by the covenant is used. A conservation covenant is a legally binding agreement regarding the use of the nominated land. These covenants generally permanently restrict adverse land-uses and prescribe the management actions required to sustain conservation values in the long-term. Since conservation covenants restrict use of the land for future owners, the covenant appears clearly on the property title where it is in full view of all prospective new landholders.
- 4.69 Covenants are by their nature voluntary. They are also philanthropic, at least in part, because landholders will have to continue to provide some financial support, even given some level of community subvention.
- 4.70 Dr Carl Binning and Dr Mike Young note that there are no significant incentives for landholders to enter into conservation covenants in Australia. They note also that there are significant administrative, legal and personal costs associated with these arrangements. As a result, very few conservation covenants have been established.³³
- 4.71 Trust for Nature (TFN) Victoria is an example of a group involved in this process. TFN Victoria is an independent, non-profit organisation that focuses on brokering permanent protection agreements with landholders. The organisation will often buy land, place a covenant on it, and then resell the land to interested purchasers. They also assist in a number of incentive programs to reduce the cost of maintaining conservation areas.
- 4.72 The National Farmers Federation supports the use of conservation covenants. Dr Wendy Craik testified that:
- ... they are a great innovation because there is not way that the public reserve system can fund conservation parks, or whatever you want to call them, solely. I think it is an excellent idea if you have the private sector involved – and presumably there are tax deductions or something to encourage that sort of approach.³⁴
- 4.73 The Committee is also aware of the use conservation covenants in the United States of America. The approach there is more flexible and includes a range of options, such as rates exemption, landswaps and exchanges, bargain sale of land, and conservation annuities, bonds and shares.³⁵

33 C Binning and M Young, *Talking to the Taxman about Nature Conservation*, p. 30.

34 *Transcript of Evidence*, p. 305.

35 This evidence was given by C Binning in private discussions with the Committee.

- 4.74 The Committee considers that promoting conservation covenants are an important step in expanding ecologically sustainable land use, and consequently, measures should be implemented to foster the spread of conservation covenants. Measures to promote covenants should not only provide clear incentives but also remove disincentives. Since the legal status of a conservation covenant is established at a state level, the role of the Commonwealth in promoting covenants will be confined to:
- providing financial incentives to state, territory and local governments to remove the disincentives of entering into a covenant that are posed by land tax and local government charges;
 - providing taxation incentives to landholders to enter into covenants;
 - encouraging covenants that are robust, feasible and sustainable in the long-term; and
 - encouraging state and territory administrations to enact appropriate and sympathetic legislation, where this has not already occurred.
- 4.75 Such measures are likely to have fiscal implications at a Commonwealth level. Therefore, before a covenanting scheme is established the fiscal effect should be closely studied. The Committee will examine this issue further in its inquiry into public good conservation.

Ian Causley, MP
Committee Chair

4 December 2000



Appendix A - List of Submissions

Submissions - Individual/Organisation

- 1 UNESCO Institute for Bioregional Resource Management
- 2 Mr Neil Rogers
- 3 S R Manson
- 4 Liverpool Plains Land Management Committee
- 5 Cattle Out of Water Incorporated
- 6 Nature Conservation Council of NSW
- 7 Wollondilly Catchment Management Committee
- 8 Mr David Clarke
- 9 Ms Sondra Adams
- 10 Southern Riverina Irrigation Districts Council
- 11 North Central Catchment Management Authority
- 12 West Gippsland Catchment Management Authority
- 13 Sarina Integrated Catchment Management Association
- 14 Whittington Interceptor Sustainable Agriculture Land Treatment Society Inc.
- 15 North East Catchment Management Authority
- 16 Cooperative Research Centre for Water Quality and Treatment
- 17 Mr John Hyde
- 18 Movement Opposing Senseless Environment Sacrilege (M.O.S.E.S.)

- 19 South Australian Community Action for the Rural Environment Program (SA CARE)
- 20 Lockyer Watershed Management Association - Lockyer Landcare Group
- 21 Eurobodalla and Snowy River Shire Councils
- 22 Shoalhaven Catchment Management Committee
- 23 Snowy Mountains Hydro-Electric Authority
- 24 Mr Gynlais Jones
- 25 Forest Practices Board
- 26 Mr Digby Jacobs
- 27 Goulburn Valley Environment Group Inc.
- 28 Upper Barwon Landcare Network
- 29 Professor John Burton
- 30 Murray Darling Association Inc.
- 31 Hughes Creek Catchment Collaborative
- 32 Nillumbik Shire Council
- 33 Lake Macquarie Catchment Management Committee
- 34 National Farmers' Federation
- 35 Pine Rivers Shire Council
- 36 South West Metropolitan Local Authorities Management Group
- 37 Queensland Murray Darling Committee Inc.
- 38 Raynbird Road Action Group
- 39 Bombala Council
- 40 Condamine Catchment Management Association Inc.
- 41 Mr D N Menz
- 42 Insurance Council of Australia Limited
- 43 Bellinger Catchment Management Committee
- 44 Forestry Tasmania
- 45 Cooperative Research Centre for Catchment Hydrology
- 46 Australian Association of Natural Resource Management

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| 47 | Mr Colin Clay |
| 48 | Blackwood Basin Group Inc. |
| 49 | Mr Paul Gennett |
| 50 | Lower South Coast Catchment Management Committee |
| 51 | Professor Allan Bremner |
| 52 | Mrs Helen Fitzgerald |
| 53 | Mr R.W. Bradley |
| 54 | Mr Simon Abbott |
| 55 | Border Rivers Catchment Management Association |
| 56 | Jordan River Catchment Committee |
| 57 | NSW Inland Catchment Management Committees |
| 58 | Dr Richard D. Margerum |
| 59 | Mount Lofty Ranges Catchment Program |
| 60 | Snowy Genoa Catchment Management Committee |
| 61 | Mr Marty Ladyman |
| 62 | Burdekin Shire Council |
| 63 | World Geoscience Corporation Pty Limited |
| 64 | Hydro-Electric Corporation (Tasmania) |
| 65 | Local Government and Shires Association of NSW |
| 66 | Land & Water Resources Research & Development Corporation |
| 67 | Eurobodalla Shire Council |
| 68 | Friends of the Earth - Sydney |
| 69 | Mary River Catchment Coordinating Committee |
| 70 | Georges River Catchment Management Committee |
| 71 | Woody Yaloak Catchment Group |
| 72 | Bennett Brooks Catchment Group |
| 73 | NSW Farmers' Association |
| 74 | River Basin Management Society Inc. |
| 75 | Clarence Valley Conservation Coalition Inc. |

- 76 Hastings Camden Haven Catchment Management Committee
- 77 Mr Jason Alexandra
- 78 Australian Society for Limnology Inc.
- 79 Illawarra Catchment Management Committee
- 80 GeoCatch Network Centre
- 81 Ms Jenny Smith
- 82 Mr Glynne Tosh
- 83 Water Corporation (Western Australia)
- 84 Mr Kevin Cotterell
- 85 Integrated Catchment Assessment and Management (ICAM) Centre
- 86 Institute of Municipal Engineering Australia
- 87 Centre for Environmental Applied Hydrology
- 88 Dr Sandra Baxendell
- 89 Adelaide Hills Community Action Group
- 90 Mallee Catchment Management Authority
- 91 Community Advisory Committee of the Murray Darling Basin Ministerial Council
- 92 Manning Catchment Committee
- 93 Department of Transport and Regional Development
- 94 Ms Margaret Thompson
- 95 Environmental Health Unit, City of Ballarat
- 96 Dr C J Balmer
- 97 Johnstone River Catchment Management Association Inc.
- 98 Upper Murrumbidgee Catchment Coordinating Committee
- 99 North coast Catchment Coordinating Committee
- 100 Maroochy Shire Council
- 101 Brunswick Catchment Management Committee
- 102 Australian Water and Wastewater Association
- 103 Bostobrick Landcare Group Inc.

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| 104 | Coxs River Catchment Committee |
| 105 | Swan Catchment Council WA (Inc) |
| 106 | Local Government Association of Queensland Inc. |
| 107 | Shire of Gingin |
| 108 | Ipswich City Council |
| 109 | Melbourne Water Corporation |
| 110 | Clarence River County Council |
| 111 | Brisbane City Council |
| 112 | Southern Sydney and Sydney Harbour Regional (Catchments)
Coordinating Committees |
| 113 | Goulburn City Council |
| 114 | Central Highlands Water |
| 115 | Central Coast Regional Catchments Committee |
| 116 | Mr L G Adamson |
| 117 | Urban Hills Land Conservation District Committee |
| 118 | Whistleblowers' Action Group (Qld) Inc. |
| 119 | Swan Bay Integrated Catchment Management Committee |
| 120 | Water and Rivers Commission (Western Australia) |
| 121 | Patawalonga and Torrens Catchment Water Management
Boards |
| 122 | Sydney Catchment Authority |
| 123 | NSW Dairy Farmers' Association Limited |
| 124 | North West Catchment Management Committee |
| 125 | Mr Patrick James |
| 126 | Western Australian Municipal Association |
| 127 | Victorian Government |
| 128 | Institute of Foresters of Australia Inc. |
| 129 | NSW State Catchment Management Coordinating Committee |
| 130 | Dr Gary Brierley |
| 131 | Mr David Dettrick |

- 132 Goulburn Broken Catchment Management Authority
- 133 Fertilizer Industry Federation of Australia, Inc.
- 134 SUNFISH Queensland Inc.
- 135 Hawkesbury-Nepean Catchment Management Trust
- 136 NSW Irrigators' Council
- 137 Pastoralists and Graziers Association of Western Australia
- 138 Queensland Government
- 139 Barwon Region Water Authority
- 140 Richmond Catchment Management Committee
- 141 Department of Environment and Heritage
- 142 Department of Agriculture, Fisheries and Forestry Australia
- 143 Tasmanian Government
- 144 Western Australian Government
- 145 Berowra Catchment Management Committee
- 146 Association of Rural Water Authorities
- 147 Dr Bruce Hooper
- 148 Gympie & District Landcare Group Inc.
- 149 Mr Ken Pearce
- 150 Adelaide Hills Community Action Group
- 151 Swan Bay Integrated Catchment Management Committee
- 152 Water for Australia Pty. Ltd



Appendix B - List of Exhibits

Exhibit

- 1 National Landcare Facilitator Project
The Role of Community Landcare Coordinators and Facilitators in Natural Resource Management.

Documents presented by Mr Lachlan Polkinghorne at the public hearing in Canberra, 16 February 2000.
- 2 Water and Rivers Commission (Western Australia)
Material from the Water and Rivers Commission about catchment management in Western Australia.

Chart: Catchment management structure in Western Australia
Figure 1: Water Supply Overview
Figure 2: Some Different Drinking Water Delivery Chains
Paper: Western Australian Government framework to assist in achieving sustainable natural resource management.

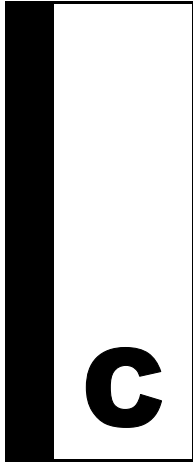
Material provided by Mr Roger Payne (Related to Submission No. 120) at the public hearing in Perth, 28 March 2000.
- 3 CRC for Catchment Hydrology
Chart: CRC for Catchment Hydrology research :focus and relevance
Chart presented by Professor Russell Mein at the public hearing in Melbourne, 2 May 2000.

- 4 **Melbourne Water, *Map - Melbourne Water Operating Area for Waterways and Drainage***

Presented by Mr Ross Young at the public hearing in Melbourne, 2 May 2000.

- 5 **Association of Rural Water Authorities,
*Map - Victorian Rural Water Bodies***

Presented by Dr Goff Letts at the public hearing in Melbourne, 2 May 2000.



Appendix C - List of Public Hearings and Witnesses

Public hearings

Monday, 20 September 1999 - Canberra

Australian Association of Natural Resource Management

Mr Lawrence Kirk, National President

Department of Agriculture, Fisheries and Forestry

Mr Michael Taylor, Secretary

Department of Agriculture, Fisheries and Forestry Australia

Ms Wendy Goodburn, Assistant Manager, Monitoring and Evaluation Section, Natural Resource Management Policy Division

Dr Joseph Walker, Senior Principal Research Scientist

Mr Charles Willcocks, Assistant Secretary, Landcare and Natural Heritage Trust Branch

Department of Environment and Heritage (Environment Australia)

Mr Gerard Early, First Assistant Secretary, Natural Heritage Division

Mr Peter Komidar, Director, Water Reform Section

Department of the Environment and Heritage (Environment Australia)

Mr Andrew Campbell, Director, Sustainable Landscapes Branch

Integrated Catchment Assessment and Management (ICAM) Centre

Mr Christopher Buller, Manager

Ms Juliet Gilmour, PhD Student

Wednesday, 13 October 1999 - Canberra

Community Advisory Committee of the Murray Darling Basin Ministerial Council

Mrs Leith Bouilly, Chairman

Wednesday, 27 October 1999 - NSW

Local Government and Shires Association of NSW

Mr David Hale, Senior Policy Officer Water

Mr Murray Kidnie, Secretary

Shires Association of New South Wales

Mr Chris Vardon, President

Southern Sydney Regional (Catchments) Coordinating Committee

Mr Peter Wells, Chair

Sydney Catchment Authority

Mr Kenneth Elliott, Senior Legal Counsel

Mr David Joy, General Manager, Catchment Management

Mr Kelvin Lambkin, Catchment Environmental Scientist

Sydney Harbour Regional (Catchments) Coordinating Committee

Mr Timothy MacDonald, Regional Strategist

Sydney Harbour Regional Catchments Coordinating Committee

Mr Colin Huntingdon, Chairman, Regional Committee & Sydney Northern Beaches C.M.C.

Tuesday, 16 November 1999 - Brisbane

Brisbane City Council

Ms Rachel Barley, Senior Program Officer

Ms Ursula Kerr, Principal Program Officer, Catchments

Department of Natural Resources and Environment

Mr Donald Begbie, Acting Director, Resource Condition and Trend

Ms Margaret Berenyi, General Manager, Community Program
Development

Ms Joan Meecham, Senior Natural Resource Management Planner,
Western & Central Queensland Planning

Mr Paul Mills, Manager, Water Management

Environment Protection Agency

Mr James Fewings, Acting Manager, Brisbane River Management Group

Fertilizer Industry Federation of Australia, Inc.

Mr Douglas McGuffog, Executive Director

Integrated Resource Management Research Pty Ltd

Dr Bruce Hooper, Director

Pine Rivers Shire Council

Mr Robert McDonald, Asset & Drainage Engineer, Department of Works
& Services

Queensland Government

Ms Jacqueline Martin, Principal Policy Officer, Intergovernmental
Relations, Department of Premier & Cabinet

Queensland Murray Darling Committee Inc.

Mr Clarrie Hillard, Member

Mrs Mary Woods, Member

WMC Fertilizers Pty Ltd

Mr Ian Clague, Manager, Corporate Affairs

Monday, 22 November 1999 - Canberra

Australian Water & Wastewater Association

Mr Robert Ford, National Convenor, Environment & Catchment
Management Interest Group

Australian Water and Wastewater Association

Mr Brian McRae, Technical Director

Institute of Foresters of Australia

Professor Ian Ferguson, President

Mr Patrick O'Shaughnessy, Member

Wednesday, 9 February 2000 - Adelaide

Adelaide Hills Community Action Group

Mr Bill Antell, Executive Group Member

Mr Michael Forwood, Executive Group Member

Mr David Mallan, Executive Group Member

Cooperative Research Centre for Water Quality and Treatment

Professor Donald Bursill, Director

Murray Darling Association Inc.

Mr Leon Broster, General Manager

Ms Sarah Wigley, Project Manager

SA Water

Mr Glyn Ashman, Acting Manager, Water Resources, Bulk Water Division

Wednesday, 16 February 2000 - Canberra

National Landcare Facilitator Project

Mr Lachlan Polkinghorne, National Landcare Facilitator

Tuesday, 28 March 2000 - Perth

Agriculture Western Australia

Mr David Hartley, Executive Director, Sustainable Rural Development

Eastern Metropolitan Regional Council

Mr Mick McCarthy, Manager, Environmental Services

Pastoralists and Graziers Association

Dr Henry Esbenschade, Director, Natural Resources Management

Pastoralists and Graziers Association of Western Australia

Mrs Sue Walker, Chairman, Natural Resources Management Committee

Shire of Gingin

Mrs Elizabeth Eaton, Councillor, Lower Coastal Ward

Urban Hills Land Catchment District Committee

Mr Rodney Henderson, Vice-President

Urban Hills Land Conservation District Committee

Dr Alan Pilgrim, Chair

Ms Elizabeth Western, Landcare Coordinator

Water and Rivers Commission

Dr Marina Leybourne, Acting Manager, Catchment & Waterways
Management Branch

Water Corporation

Dr Robert Humphries, Manager, Environment Branch

Western Australian Municipal Association

Mrs Lillias Bovell, Policy Manager

Wednesday, 5 April 2000 - Canberra

National Farmers' Federation

Dr Wendy Craik, Executive Director

Ms Anwen Lovett, Director-Environment

Tuesday, 2 May 2000 - Melbourne

Association of Rural Water Authorities

Mr John Dainton, Alternate Member

Mr Denis Flett, Member

Dr Goff Letts, Chairman

Mr Luke Reddan, Secretary

Cooperative Research Centre for Catchment Hydrology

Professor Russell Mein, Director, Department of Civil Engineering (Head
Office)

Department of Natural Resources and Environment

Mr Peter Sutherland, Executive Director, Catchment & Water Division

Melbourne Water

Mr Nick Ronan, Manager, Strategic Planning in our Waterways and Drainage Group

Mr Ross Young, General Manager, Waterways and Drainage Group

River Basin Management Society

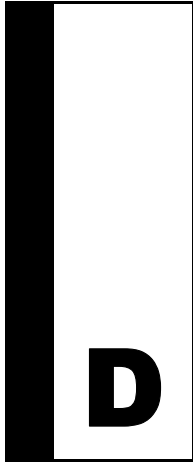
Dr Sandra Brizga, Immediate Past President

Mr Lancelot Lloyd, President

Swan Bay Integrated Catchment Management Committee

Ms Sue Longmore, Committee Member & Former Swan Bay Catchment Facilitator

Mr Steven Smithyman, Swan Bay Catchment Officer, Treasurer and Secretary



Appendix D - Inspections and discussions

Gunnedah and Windsor – Tuesday, 26 October 1999

Meeting and discussions at Gunnedah with:

North West Catchment Management Committee
Liverpool Plains Catchment Management Committee
NSW Department of Natural Resources

Inspections

The committee conducted inspections of a School site in Gunnedah.

Meeting and discussions at Windsor with:

Hawkesbury-Nepean Catchment Management Trust

Inspections

The committee conducted inspections of riverbank restoration and other projects in the Windsor area.

Maroochydore – Monday, 15 November 1999

Meeting and discussions at Maleny with:

Mary River Catchment Coordinating Committee
Community Representative on the State Landcare
Catchment Management Council
Barung Landcare
Gympie Landcare
John Dillon, Past President Barung Landcare and Environment

Peter Dutton, community representative on the Mary River Catchment Coordinating Committee

Inspections

The committee travelled to Barung, Conondale, Kenilworth and Eumundi and conducted inspections of the Mary River Catchment.

Adelaide – Tuesday, 8 February 2000

Meeting and discussions at Adelaide airport with:

Torrens and Patawalonga Catchment Boards
Sixth Creek Catchment Group

Inspections

The committee conducted inspections at Torrens Lake, Gorge Weir, Sixth Creek and surrounding areas.

The committee undertook inspections at Mount Pleasant, Birdwood, Inverbrackie Creek catchment, and surrounding areas.

Meeting and discussions at Birdwood with:

Mount Lofty Ranges Catchment Program
Upper Torrens Land Management Project
Department of Primary Industries & Resources SA
Jim Dunn, Local Landholder

Meeting and discussions at Murray Bridge with:

South Australian CARE Program
River Murray Catchment Water Management Board
Department for Environment Heritage and Aboriginal Affairs, SA
Mount Lofty Ranges Catchment Program
Soil Conservation Board/NHT State Assessment Panel
Murray Mallee Local Government Association
Lower Murray Irrigation Action Group

Inspections

The committee undertook an inspection of a dairy farm on the Murray River.

Busselton and Northam – Monday, 27 March 2000

Meeting and discussions at Busselton with:

Geocatch Catchment program

Meeting and discussions at Northam with:

Avon Catchment Network

Shepparton and Kerang – Monday, 27 March 2000

Meeting and discussions at Shepparton airport with:

Goulburn Broken Catchment Management Authority
Shepparton Irrigation Region Committee
Goulburn Broken Waterways Committee
Shepparton Irrigation Committee
Bushcare program

Inspections

The committee travelled to the Russell Family Property and inspected the property.

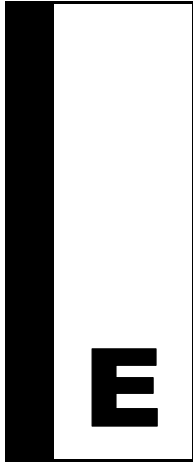
The committee travelled to Jordan's Bend and inspected river works.

Meeting and discussions at Kerang with:

North Central Catchment Management Authority and its committees
Department of Natural Resources and the Environment
Mayor
Chief Executive Officer of Gannawarra Shire Council

Inspections

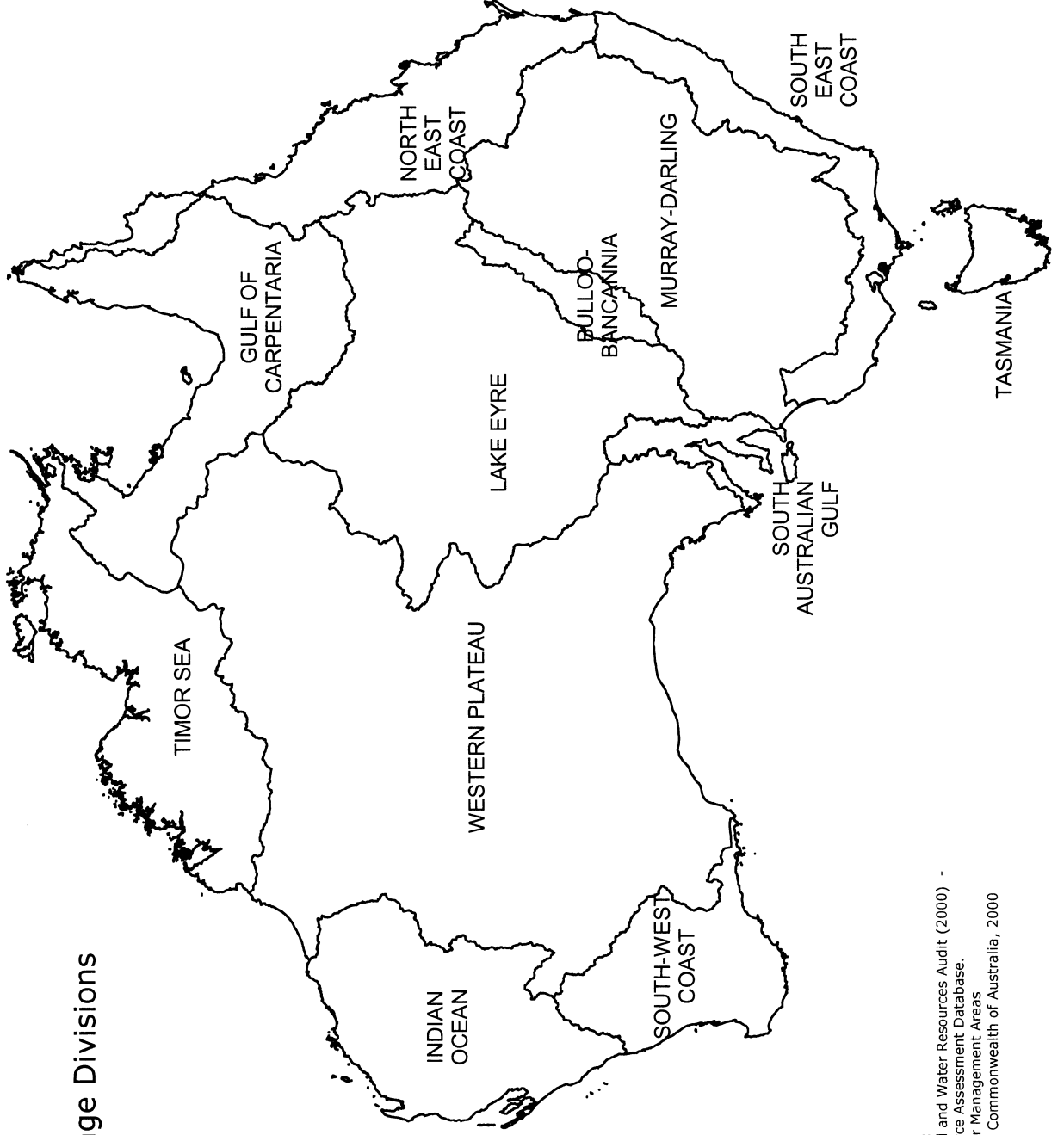
The committee travelled to the English family farm and inspected irrigation systems.



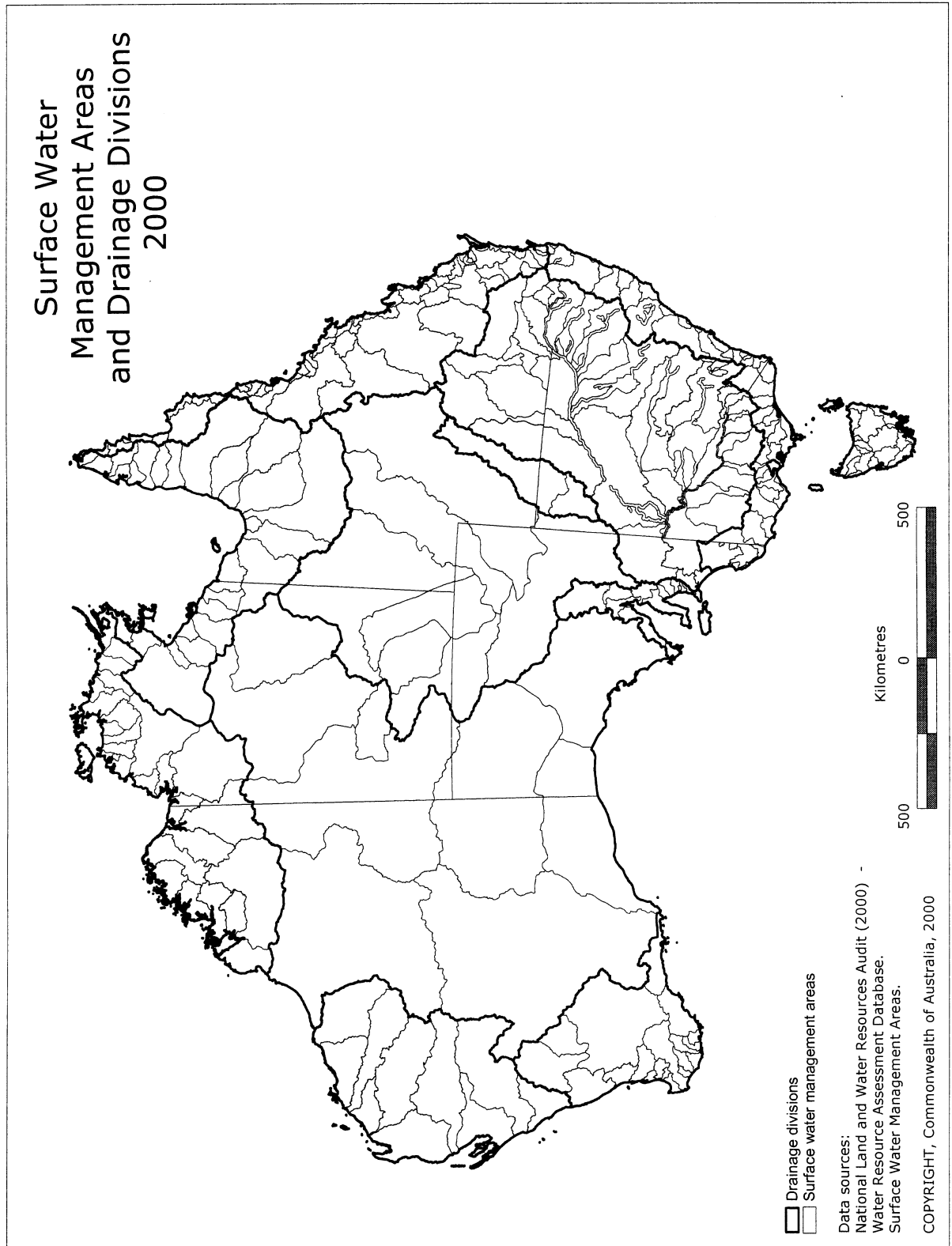
Appendix E - Australia's Drainage Divisions and Surface Water Management Areas

The Australian drainage divisions are areas defined by the Australian Water Resources Council as a basis for presenting surface hydrogeological data. They are an aggregation of major river basins within geographical boundaries. Surface water management areas have been designated by the Australian Water Resources Council in agreement with the states and territories. Essentially, they outline the catchments of Australia's major river basins.

Drainage Divisions



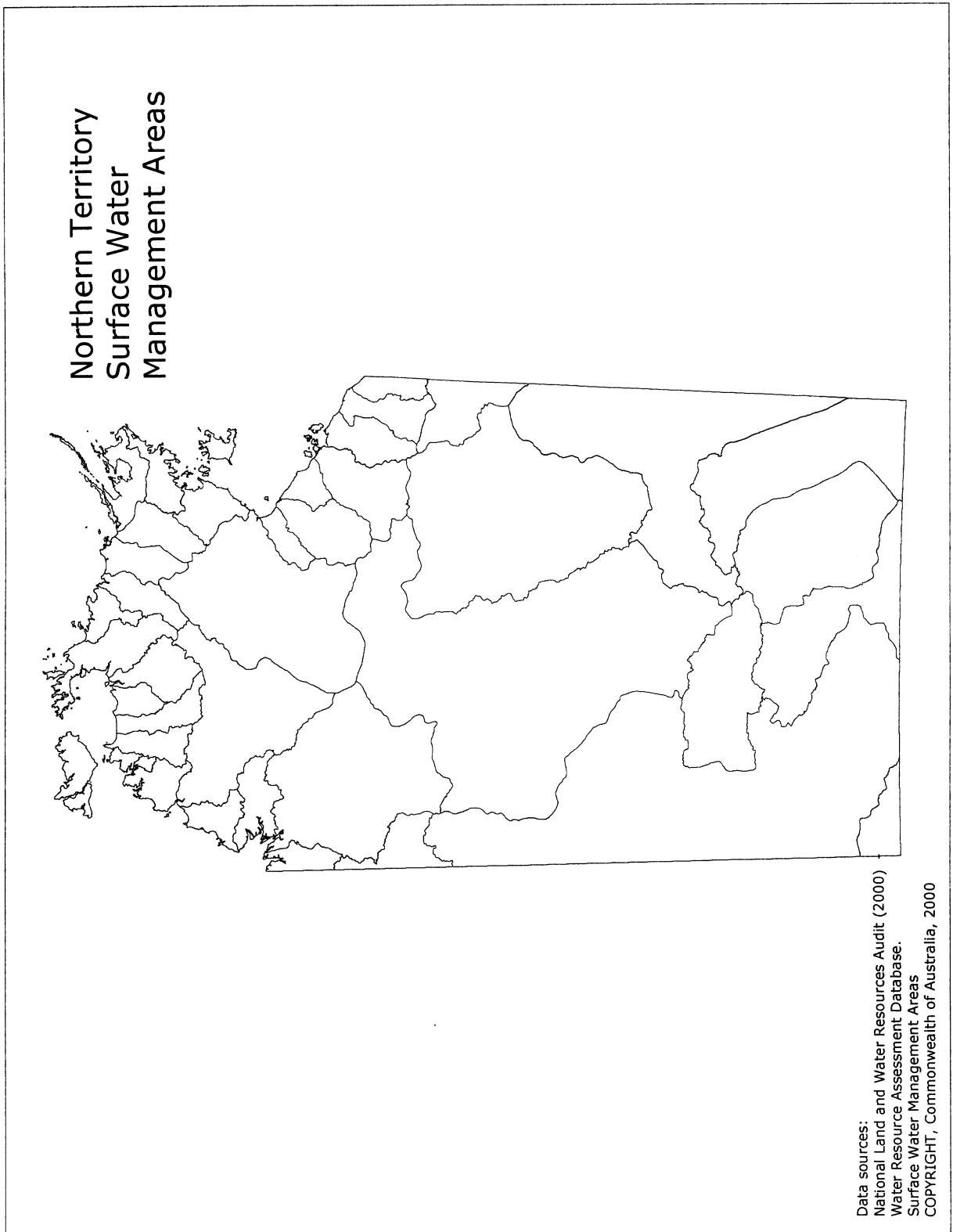
Data sources:
National Land and Water Resources Audit (2000) -
Water Resource Assessment Database.
Surface Water Management Areas
COPYRIGHT, Commonwealth of Australia, 2000



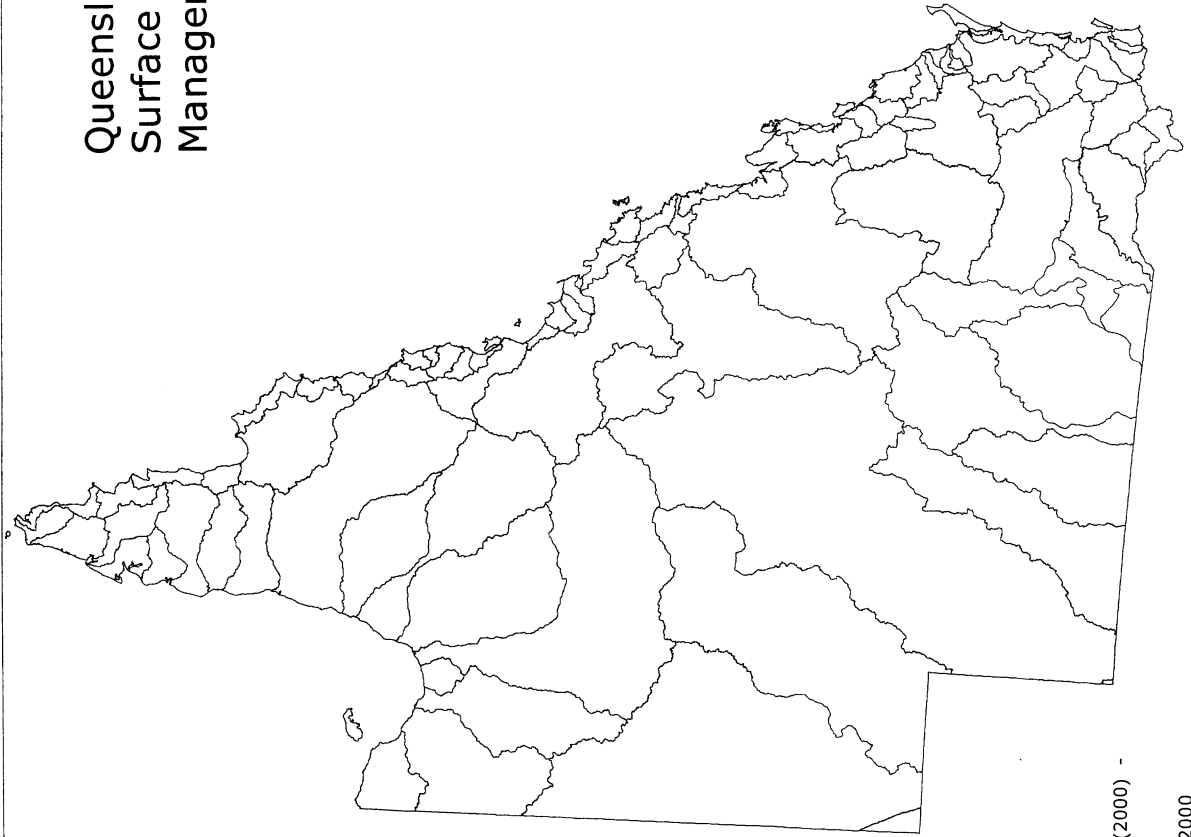
New South Wales Surface Water Management Areas



Data sources:
National Land and Water Resources Audit (2000) -
Water Resource Assessment Database.
Surface Water Management Areas
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Queensland Surface Water Management Areas



Data sources:
National Land and Water Resources Audit (2000) -
Water Resource Assessment Database.
Surface Water Management Areas
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South Australia
Surface Water
Management Areas

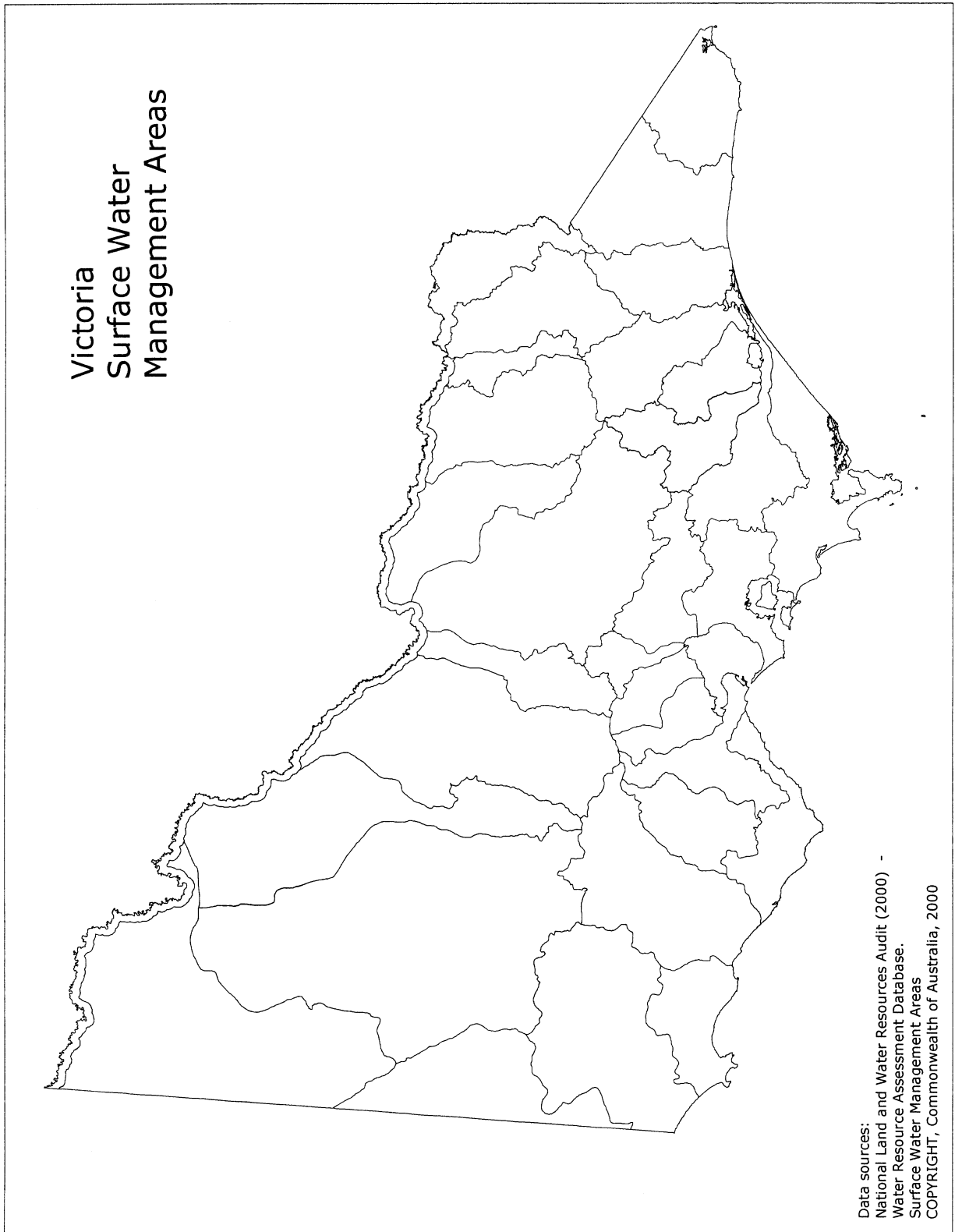


Data sources:
National Land and Water Resources Audit (2000) -
Water Resource Assessment Database.
Surface Water Management Areas
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Tasmania Surface Water Management Areas



Data sources:
National Land and Water Resources Audit (2000) -
Water Resource Assessment Database.
Surface Water Management Areas
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Western Australia Surface Water Management Areas



Data sources:
National Land and Water Resources Audit (2000)
Water Resource Assessment Database.
Surface Water Management Areas
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Appendix F – The US approach to Biodiversity Maintenance – The Conservation Reserve Program

BACKGROUND TO THE CONSERVATION RESERVE PROGRAM IN THE USA

The USDA administers the Conservation Reserve Program (CRP). This program offers compensation to private landholders who divert land from agricultural production to the supply of biodiversity services. The CRP has evolved out of the various Farm Bills that have been in existence since the Great Depression. In the USA, support for the agricultural sector has a long history that goes back to the Great Depression in 1933. In its initial phase, the aim of US farm policy was simply to support farm incomes. The need to support farm income stems from the agricultural sector's history of chronic excess farm capacity. The mechanism for income support has been changed over time. **Table A1** shows that income support to US farmers has been delivered in different ways since the Great Depression. Early government support mechanisms simply transferred income from the general public to the agricultural sector. Farm Bill funds were used to control the supply of commodities and to address soil erosion through programs that set aside acreage. Under this approach, farmers were paid to retire land from crops (thereby reducing the level of soil erosion) but this had some adverse effects:

- farmers retired the worst land and concentrated inputs on the best land – often total production increased per farm; and
- retired land became more productive after retirement adding to production in subsequent years.

Table A1: Summary of farm income support mechanism in the USA

Year	Farm support mechanism
1933	Direct government payments Price support (the loan rate)
1950's - 1980	Income support Supply control through diversion of land such as the soil bank Acreage Reduction Programs Farmer owned reserve (farm storage of grain) Export Enhancement Program (incentives to export commodities) Deficiency payments tied to acreage reduction program
1980s	Conservation Reserve Program – soil erosion focus Farmers receive rental payments for redouble land converted to other used
1985-1999	Conservation Reserve Program – Environmental Benefits objective USDA conducts an auction for Farm Bill funds based on (i) the environmental benefits and (ii) the cost

Since the 1985 Farm Bill, assistance given to farmers has been tied to achievement of conservation goals. The USA is now at the eighteenth sign-up of the Farm Bill and funds available from this Bill are allocated through an auction system where farmers must compete with each other to receive government funds. Farm Bill legislation requires that funds be allocated on a competitive basis. To receive funds allocated under the Farm Bill, farmers must now provide environmental services from land under the Conservation Reserve Program.

HOW THE CONSERVATION RESERVE PROGRAM WORKS

Assistance provided under the Farm Bill is available through an auction process. Farmers offer to provide environmental services and provide estimates of the cost of providing these services. This bid is the minimum payment that the farmer will accept to supply the services. It is up to the farmer to decide whether to seek full costs of providing environmental services identified or to seek a proportion of the funds. Full costs can include income forgone because land is taken out of commodity production, as well as the cost of providing and maintaining the environmental service. Farmers know that they are competing with other farmers for funds, so extravagant cost claims may not be successful.

THE ROLE OF GOVERNMENT (USDA) IN THE AUCTION PROCESS

Government is responsible for administering the auction, for auction design, and for some compliance activities. The key element of the auction is the development of an Environmental Benefits Index (EBI). This signals to farmers the relative value of various possible environmental services that might be provided from farmland. The USDA uses cost information from farmers to modify the EBI. These two elements are discussed below.

Environmental Benefits Index

The EBI has been constructed by ecologists to reflect the relative scarcity of different environmental goods and services. The point-scoring system helps identify government objectives. This information is released to the public so that bid strategies can be developed by private landholders.

Each farmer converts the environmental proposal for his farm into an EBI. The government determines enrolment into the CRP by collating and ranking bids according to the EBI, which reflects the ratio of conservation benefits to costs. Each offer is compared nationally with others. The EBI is composed of six environmental factors plus a cost factor. The six environmental factors are:

Wildlife factor (0 to 100 points)

The wildlife factor scores the expected benefits of the offer and is composed of six subfactors (wildlife habitat cover, endangered species protection, proximity to water, adjacent protected areas, contract size, restored wetlands to uplands percentage). Farmers that develop proposals to improve wildlife habitat gain high scores. These scores reflect relative scarcity of the environmental service in question.

Water quality factor (0 to 100 points)

This factor evaluates the potential impacts that the bid may provide for surface and ground water quality. It has four components: location, groundwater quality advantage, surface water advantage and wetland benefits.

Erosion factor (0 to 100 points)

This factor evaluates the potential for land to erode as the result of wind or water. Points are based on an Erodability Index (EI).

Enduring benefits factor (0 to 50 points)

This factor considers the likelihood of certain practices remaining in place beyond the contract period.

Air quality benefits from reduced wind erosion (0 to 35 points)

This factor evaluates the air quality improvement from reducing airborne dust.

State and National Conservation Priority areas (0 to 25 points)

This factor evaluates the location of the offer relative to those of national approved Conservation Priority Areas.

Cost

Farmers can improve the EBI associated with their bid through their cost strategy. By accepting more of the cost (cost sharing) the EBI points can be increased. This provides farmers with an incentive to offer cost-effective bids. More points are offered if:

1. no government cost-sharing is requested;
2. the offer price is below the Maximum Payment Rate; and
3. the offer price is below the Maximum Rental Rate.

The government provides the following information necessary for the auction:

Reserve price

The government signals what it believes is a fair rental price for land in the various counties around the nation. This is done following analysis of the rental price for farmland of different levels of productivity - fertile land has higher rental value than marginal land.

Assistance in bid formulation

Government assists farmers to compile their bids. This ends up as an EBI index that in the latest Farm Bill has seven components.

A competitive environment

When farmers place a bid, they score points according to the environmental benefits associated with their plan. Farmers formulate a bid strategy in competition with other farmers and knowing the rental rates for various types of land. Farmers nominate a bid price and the area of the contract, and submit a proposed environmental plan expressed as an EBI.

Pre-auction analysis

Prior to auction, the Farm Bill indicates the area of land on which the CRP will be available, and the total funds for the program.

To determine the EBI threshold in any year, the USDA conducts an analysis of the relationship between total acres of land operating in the CRP, their EBI, and how

current-year participation can contribute to the overall CRP aim. Essentially, the USDA hopes to maintain a consistently high EBI score per acre of participation.

OTHER FEATURES OF THE AUCTION PROCESS

The contract

Each contract runs for 10 years. After 10 years, there is no automatic renewal. Farmers can apply for a new contract through the bidding process if they choose.

Transaction costs

Transaction costs for these programs are relatively high. Unsuccessful bids incur preparation costs, and the USDA is required to help farmers prepare bids and to check on compliance.

Effectiveness

The auction approach based on EBI and cost components is a highly targeted approach. It provides high levels of accountability to government and is a competitive system.

Community acceptance

There is an extremely high level of community acceptance for the CRP scheme. The environmental focus of the CRP, particularly with the inclusion of wildlife habitat as a focus, is very popular with the American public. Politicians in the USA like the scheme and requested an expansion of the EBI approach for the last Farm Bill. Farmers like the scheme and seem to have little trouble preparing bids. EBI scores are confirmed over the counter when farmers are required to submit their bids. Only export companies affected by reduced commodity exports from the USA are not happy with the program.



Appendix G – Indicators of progress

The following table is a comparison of Natural Resource Management targets set by the Australian Conservation Foundation, and the ‘indicators of progress’ outlined in the Commonwealth government’s paper – ‘Managing Natural Resources in Rural Australia for a Sustainable Future: A discussion paper for developing a national policy’

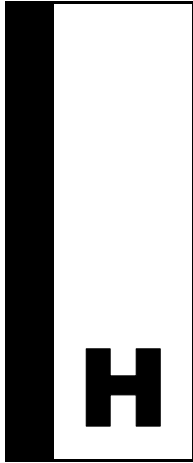
ACF Preferred Targets: (Changes to the Commonwealth discussion paper in bold)	<i>Commonwealth Discussion Paper Targets:</i>
<p>REGIONAL APPROACHES</p> <ul style="list-style-type: none"> • By 2002 each state and territory should establish a planning framework for all regions and catchments. By 2005 communities in half of these regions and catchments will be in the process of implementing integrated natural resource management strategies that are consistent with national policy direction and targets. By 2010 all regions and catchments will be implementing integrated natural resource management strategies. • By 2005 all regional development initiatives and local government planning should be based on national natural resource management principles, recognising both the limitations of natural resource base, and the economic and social significance of environmental assets and services. <p>FACILITATING FUNDAMENTAL CHANGE</p>	<p><i>REGIONAL APPROACHES</i></p> <ul style="list-style-type: none"> • <i>By 2005 each state and territory should establish a planning framework for all regions and catchments, with communities in half of these regions and catchments having developed and being in the process of implementing integrated natural resource management strategies.</i> • <i>2005 all regional development initiatives and local government planning should be based on sound natural resource management principles and recognise the limitations of natural resources.</i> <p><i>FACILITATING FUNDAMENTAL CHANGE</i></p>

ACF Preferred Targets: (Changes to the Commonwealth discussion paper in bold)	Commonwealth Discussion Paper Targets:
<ul style="list-style-type: none"> By 2005, 15 per cent of agricultural produce should be coming from properties that have ISO 14000 certification or other accredited environmental management systems in operation or that are participating in a production accreditation scheme. Such accreditation must incorporate assessment against biodiversity criteria. By 2015, 50 per cent of agricultural produce should be so certified. By 2005 there should be a 100 per cent increase in landholders' capital expenditure on measures and practices aimed at controlling or preventing natural resource degradation. By 2010 there should be an improved economic return resulting from new production opportunities, better use of resources, and land use change in areas at risk of or experiencing resource degradation. The principles of ecological sustainability should also be adhered to in new areas of development and non-degraded areas. 	<ul style="list-style-type: none"> <i>By 2010, 15 percent of agricultural produce should be coming from properties that have ISO 14000 certification or other accredited environmental management systems in operation or that are participating in a production accreditation scheme.</i> <i>By 2005 there should be a significant increase in landholders' capital expenditure on measures and practices aimed at controlling or preventing natural resource degradation.</i> <i>By 2010 there should be an improved economic return resulting from new production opportunities, better use of resources, and land use change in areas at risk of or experiencing resource degradation. The principles of sustainability should also be adhered to in new areas of development and non-degraded areas.</i>
BUILDING ON LANDCARE	BUILDING ON LANDCARE
<ul style="list-style-type: none"> By 2005 operations on a majority of farms should be based on accredited whole-farm plans that are consistent with regional strategies Levels of participation by landholders in landcare and other natural resource management groups should double during the coming decade. 	<ul style="list-style-type: none"> <i>By 2010 operations on a majority of farms should be based on whole-farm plans that are consistent with regional strategies</i> <i>Levels of participation by landholders' in landcare and other natural resource management groups should increase during the coming decade.</i>
CAPACITY BUILDING FOR IMPROVED NATURAL RESOURCE MANAGEMENT	CAPACITY BUILDING FOR IMPROVED NATURAL RESOURCE MANAGEMENT
<ul style="list-style-type: none"> By 2005 there should be a 100 per cent increase in the number of landholders and regional communities actively monitoring resource condition – for example, by soil testing and water and biodiversity monitoring – to guide their management practices By 2010 the number of landholders and regional community leaders participating in rural training and leadership courses that incorporate components in environmental and natural resource management should have doubled. 	<ul style="list-style-type: none"> <i>By 2005 there should be a 75 per cent increase in the number of landholders and regional communities actively monitoring resource condition – for example, by soil testing and water and biodiversity monitoring – to guide their management practices</i> <i>By 2010 the number of landholders and regional community leaders participating in rural training and leadership courses that incorporate a natural resource management component should have doubled.</i>
ENHANCING KNOWLEDGE AND INFORMATION	ENHANCING KNOWLEDGE AND INFORMATION

ACF Preferred Targets: (Changes to the Commonwealth discussion paper in bold)	Commonwealth Discussion Paper Targets:
<ul style="list-style-type: none"> • By 2005, there should be a 50 per cent increase in research and development to do with ecologically sustainable natural resource management and use. • By 2010, 80 per cent of landholders should use natural resource management information relevant to their region through home-based computers. • By 2010, at least 50 per cent of regions should have information management systems that are comprehensive, supported and accessible to the general public, including through the Internet. By 2020, all regions should have such systems in place. 	<ul style="list-style-type: none"> • <i>By 2010 there should be a 50 per cent increase in research and development to do with ecologically sustainable natural resource management and use.</i> • <i>By 2010, 80 per cent of landholders should use natural resource management information relevant to their region through home-based computers.</i> • <i>By 2015 at least 50 per cent of regions should have information management systems that are comprehensive, supported and accessible to the general public, including through the Internet.</i>
<p>NATURAL RESOURCE CONDITION</p>	<p>NATURAL RESOURCE CONDITION</p>
<ul style="list-style-type: none"> • By 2015 there should be a net reduction in the area of productive land lost as a consequence of soil degradation caused by human-induced acidity, sodicity, salinity, acid sulphate, soil carbon loss, decline in soil structure, and erosion. • By 2002 no additional ecological communities or species should become threatened as a result of agricultural activity. • By 2001 there should be no net loss in the quality and extent of native vegetation measured within each jurisdiction. (*as per the Federal Government's National Strategy for the Conservation of Biodiversity). • By 2005 all stressed rivers and a significant proportion of other priority regulated rivers should have incorporated an environmental flow regime to restore ecological processes. Monitoring programs should be in place to inform regular reviews of the adequacy of flow regimes. • By 2005 critical recharge zones within catchments will be identified; by 2010 these should be revegetated to prevent further land and water resource degradation, and necessary adjustments should be made to environmental flow regimes of all regional and catchment planning. • By 2005 revegetation options for multiple benefits will form part of all regional and catchment planning. • By 2005 there is a net gain in native 	<ul style="list-style-type: none"> • <i>By 2015 there should be a net reduction in the area of productive land lost as a consequence of soil degradation caused by acidity, sodicity, salinity, acid sulphate, soil carbon loss, decline in soil structure, and erosion.</i> • <i>By 2005 no additional ecological communities should become threatened as a result of agricultural activity.</i> • <i>By 2005 there should be no net loss of native vegetation measured within each jurisdiction.</i> • <i>By 2005 all stressed rivers and a significant proportion of other priority regulated rivers should have incorporated an environmental flow regime to ensure maintenance of ecological processes.</i> • <i>By 2005 critical recharge zones within catchments will be identified; by 2010 these should be revegetated to prevent further land and water resource degradation, and necessary adjustments should be made to environmental flow regimes of affected watercourses.</i> • <i>By 2005 revegetation options for multiple benefits will form part of all regional and catchment planning.</i> • <i>By 2010 there is a net gain in native</i>

ACF Preferred Targets: (Changes to the Commonwealth discussion paper in bold)	Commonwealth Discussion Paper Targets:
vegetation cover and a net reduction in species and ecological communities listed as threatened or endangered.	<i>vegetation cover and a net reduction in species and ecological communities listed as threatened or endangered.</i>

Source: *The Australian Conservation Foundation, 'Submission in response to the Discussion Paper – Managing Natural Resources in Rural Australia for a Sustainable Future: A discussion paper for developing a national policy', March 2000, pp. 14-16.*



Appendix H – Tax measures and policy instruments used to promote biodiversity conservation on private land

Table 1 Comparison of Australian and American Tax Treatments

Tool	US Situation	Australian Situation	Changes Required
<i>Mechanisms that Involve Conservation Covenants</i>			
Donation of Conservation Covenants	Deduction of the difference in land value before and after the covenant is entered	Not currently, although may be allowable under existing gifting provisions if a statutory covenant is considered property. Requires a test case.	Confirm current situation and make legislative changes if required.
Deduction of managements costs	No	No – unless carrying out a business on the land	Give access to the 34% Landcare rebate to land covered by a conservation agreement
Negative gearing and primary producer status	Not applicable	No	Allow negative gearing of properties covered by a conservation agreement Give landholders who enter conservation covenants primary producer status for tax purposes
State Government land tax	Exempt in many US States but not all	No exemption provided	State governments would be required to exempt land covered by a conservation covenant
Local Government Rates	Exempt in many US States but not all	A small number (less than 15) local governments provide rate exemptions NSW Voluntary Conservation Agreements are exempt from rates	State governments would be required to exempt land covered by a conservation covenant

Tool	US Situation	Australian Situation	Changes Required
Revolving Funds	Exempt from land sales taxes and charges in some States	Only Trust for Nature (Victoria) and State agencies are currently exempt	Allow Conservation Trusts to enter conservation covenants Exempt registered Conservation Trusts from stamp duty, taxes and charges associated with the purchase and sale of land
<i>Other Financing Options</i>			
Bargain sale of Land	Deductible Capital Gains exempt May be apportioned over 5 years	Current taxation arrangements do not allow for bargain sales	Allow the gap between sale price and full market value to be a tax deductible gift Capital Gains exemption Apportionment over five years
Landswaps and Exchanges	Does not trigger capital gains tax	Capital gains tax would be triggered by the disposal and acquisition of assets	Allow capital gains to be rolled over negotiated land swaps
Capital gains roll-over for land voluntarily acquired	Proceeds may be reinvested in similar capital (ie land) within two years provided a government agency has committed to compulsorily acquire the land in the absence of voluntary sale	No arrangements in place	Allow capital gains roll over for properties voluntarily sold to conservation trusts
Donation of land with retained right of occupation	Donation of the value of the land is allowed over five years and is capital gains tax exempt	May be deductible but is untested	Allow deduction for the donation If land with retained right of occupation Capital gains tax exemption Apportionment over five years
Conservation annuities, bonds and shares	Receive favourable taxation treatment especially in relation to capital gains and estate taxes	Only deductible once annuity, bond or shares mature/are sold	Allow donations of principal to be deducted over five years

Tool	US Situation	Australian Situation	Changes Required
			Exempt from capital gains tax Treat life time annuities as income

Source *Philanthropy: Sustaining the land, The Ian Potter Foundation, Melbourne, 1999, pp. 11-12.*

Table 2 Policy instruments used to conserve biodiversity

Category of conservation measures	Description	Measures	Example
Command and control	Approaches aimed at direct regulation over resource use. This form of policy usually entails the specification of standards expressed in the form of allowable effluent emissions, ambient concentrations, or technical specifications. They require the involvement of a central authority to monitor behaviour and impose penalties for non-compliance.	<u>Restrictive zoning regulations</u> : these can be used to restrict or define land uses within certain areas. Potentially damaging activities are excluded from areas with high biodiversity values.	Victorian Planning and Environment Act, 1987.
		<u>Mandatory management specifications</u> : the regulation of activities that must be undertaken when resources are used in specified ways.	Forestry regulation and codes of practice.
		<u>Direct liability</u> : polluters are made legally liable for environmental damage, therefore creating an incentive to adopt environmentally friendly practices or potentially pay damages.	The use of civil actions as in the case of the Exxon oil spill in Alaska.

Category of conservation measures	Description	Measures	Example
		<u>Direct intervention</u> : acquisition of land deemed to have significant conservation values by the crown. Where the crown takes land a purchasing price is normally agreed based on crown evaluation.	Western Australian Public Work Acts 1902, allows the acquisition of land necessary conservation to be purchased by the Governor.
		<u>Precautionary standards</u> : minimum standards that must be satisfied by law in order to avoid regulatory penalties.	Victoria's no-net loss by 2001 objective
		<u>Resource use quotas</u> : regulation of the level of allowable exploitation of natural resources. Note: if quotas are transferable then they would be considered an economic instrument, see below.	Current restrictions on scallop harvest.
		<u>Enforcement fines</u> : fines used in conjunction with the measures above aimed at acting as a punishment for non-compliance with regulatory specifications.	Fines payable for unapproved native vegetation clearance under the Planning and Environmental Act, 1987.
		<u>Taxes and levies</u> : taxing of environmentally harmful activities to increase the cost of the activity and discourage unwanted behaviour.	Tax on fertilisers aimed at increasing their cost and reducing their use.
		<u>Tax concessions (reform)</u> : indirect payment to those that undertake activities that assist in biodiversity conservation	Reduction in local government rates, accelerated depreciation, deductible donations, and reduction in local rates for protecting native vegetation.
		<u>Subsidies</u> : direct payment to individuals or groups to undertake biodiversity conservation activities.	Goulburn Broken cost sharing arrangements and environmental work grants.
Economic Instruments	Economic instruments rely on market-based signals, such as prices, to provide incentives to land managers to protect biodiversity.	<u>Tradeable property rights and market creation</u> : identification and specification of property rights or group of rights that can be traded between economic agents in a market place.	Tradeable development rights, tradeable conservation contracts.

Category of conservation measures	Description	Measures	Example
		<u>Auctions</u> : allocation of contract or quotas on the basis of competitive bidding. Auctions are particularly useful for the allocation of resources for which there are no established markets such as those established with the creation of new property rights.	US Conservation Reserve Program
		<u>Bio-prospecting</u> : the search of ecosystems for genetic material with the potential to be commercialised. Prospecting agreements provide payment to a country for the right to access the country's biodiversity and commercialise products if they are found to have a marketable use.	Arrangement between the Victorian government and a private company for Victorian plant material.
		<u>Offset schemes</u> : schemes aimed at ensuring environmental damage incurred as a result of an activity is 'offset' by another environmentally beneficial activity.	Agreements between landowners and NRE where certain works are permitted subject to the provision of offset works such as the fencing of wildlife corridors in other areas of the property.
		<u>Cross-compliance</u> : the provision of support for one objective subject to the compliance with another.	The payment of drought assistance subject to the repairing of fences along roadside reserves.
Suasive measures	These measures are aimed at changing the perception and priorities of landholders by increasing awareness about the environment, and its management. They can be initiated and run by governments, environmental interest groups, or a combination of the two.	<u>Extension programs</u> : programs aimed at improving environmental management skill.	Elements of the Land for Wildlife program.
		<u>Research programs</u> : aimed at improving our understanding of the biophysical relationships that exist in the environment. This information can, in turn, be used to improve the effectiveness of management policies.	Land and Water Research and Development Corporation's research and development programs.
		<u>Education programs</u> : aimed at improving knowledge and appreciation of environmental amenities, systems processes, and values.	The Living Systems project.

Category of conservation measures	Description	Measures	Example
		<u>Prizes and awards</u> : formal, public recognition of voluntary commitment to environmental conservation. May be used by companies to differentiate their products.	ISO 14 000, Environmental Management System, Eco-Labeling.
Community Action Measures	Voluntary measures taken by individuals or collective groups aimed at providing, improving or managing conservation areas. these can be supported by government or initiated and managed without government involvement (or both).	<u>Voluntary covenant</u> : binding agreements entered into by landowners that are attached to the property title and restrict the individual's current and future land use.	Trust for Nature Covenants
		<u>Locally based community groups</u> : governments can assist the operation (e.g. through the provision of money or training) or formation of community conservation groups. These groups can then undertake localised environmental programs.	National park friends groups, Environmental Corps, Landcare groups, Bushcare groups.

Source Department of Natural Resources and Environment, Submission to the House of Representatives Standing Committee on Environment and Heritage Inquiry into Public Good Conservation, Submission no. 235, Appendix 1, pp. 41-43.