Getting on Track

Australia's Progress Towards the Ecologically Sustainable Management of our Rural Landscapes:

A Discussion Paper with Recommendations

Focusing on the National Action Plan on Salinity & Water Quality & the Natural Heritage Trust II

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Australian Conservation Foundation

TABLE OF CONTENTS

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Disclaimer

The recommendations made in this paper do not necessarily constitute formal ACF policy.

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Front Cover Photograph

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Acronyms Used

ACF	Australian Conservation Foundation
CBD	Convention on Biological Diversity
CoAG	Council of Australian Governments
CSIRO	Commonwealth Scientific and Industrial Research Organisation
EMS	Environmental Management System(s)
ESD	Ecologically Sustainable Development
IPCC	Intergovernmental Panel on Climate Change
LPI	Leveraging Private Investment
MRET	Mandatory Renewable Energy Target
LWA	Land and Water Australia
MBI	Market-Based Instrument(s)
NAP	National Action Plan on Salinity and Water Quality
NDSP	National Dryland Salinity Program
NHT1	Natural Heritage Trust (1997-2001)
NHT2	Natural Heritage Trust 'second round,' 'extension' or 'Mark 2' (2001-)
NCC	National Competition Council
NCP	National Competition Policy
NLWRA	National Land and Water Resources Audit (also 'the Audit')
NRM	Natural Resources (and environmental) Management
NRMMC	Natural Resources Management Ministerial Council
NESC	National Environmental Sustainability Council
NRSP	National Reserve System Program
OECD	Organisation for Economic Co-operation and Development
R&D	Research and Development
UWA	University of Western Australia
WWF	World-Wide Fund for Nature - Australia

GETTING ON TRACK

An ACF Discussion Paper on Australia's Progress Towards the Ecologically Sustainable Management of our Rural Landscapes
EXECUTIVE SUMMARY
July 2004

Introduction

Despite the advent of a new national NRM regime in 2000, most of Australia's environmental successes have been small-scale, and most of our losses continental. Governments - particularly the Australian Government's - failure to grapple with key national environmental challenges, such as river health and climate change, puts regional communities' land and water management efforts in jeopardy.

The complexities and uncertainties of landscape management only underscore the need for ample resourcing, good policy design and delivery, and strong national leadership to guide, support and enable all sectors of society to make a difference.

This paper discusses Australia's broad directions and governance framework for natural resource and environmental management (NRM). Preparation of this paper involved consultation with a wide range of NRM participants from across the country. ACF welcomes further discussion and debate on the issues, problems and proposed solutions outlined here.

The Problems

It is not at all clear that Australia's rural landscapes are on track to sustainability as a result of the National Action Plan on Salinity and Water Quality (NAP) and the 'extended' Natural Heritage Trust (NHT2). The goals of these twin 'flagship' NRM programmes are worthy, as is the national focus they have brought to key problems like salinity, together with some mobilisation of community awareness and action.

The design and delivery NAP & NHT2 shows some real improvements over the original NHT, indicating a willingness on the part of governments to explore ideas for securing better environmental returns on investment. However, while some of the policy lessons of the past have been learnt, serious flaws and drawbacks remain.

In particular, ACF is concerned that:

- **Communities are still being asked to do too much with too little:** More than ever, regional communities are being relied on to deliver environmental outcomes, often without clear guidance on their roles and responsibilities, and without properly equipping them with the tools to do the job - especially in the field of nature conservation. The goodwill of the Landcare movement is also being squandered in the rush to regional NRM delivery.

- **Government action to prevent landscape decline is still weak:** The fundamental reasons for the loss our natural heritage and resources – greenhouse pollution, stressed rivers, the spread of salinity, pests and weeds, and poor bushland protection – are still not being dealt with. In fact, in some respects Australia is going backwards, with subsidies to heavy polluters, new developments threatening northern Australia, and only minimal measures to restore our rivers to health.

- **Investment is still unrealistically low:** Current NAP and NHT2 funding is only about 0.1% of the federal budget which is far from enough to address more than a small fraction Australia's environmental needs. There has been little effort to tap the potential of the private sector to make a big difference to the health of rural landscapes.

- **Investment is still not strategic enough:** Crucially, it is not at all clear that we are wisely investing what limited funds are available to get the best environmental outcomes. Nationally, there are only a few timebound targets for environmental progress, and no way of ensuring that progress.

- **National leadership is still largely absent:** The federal government is still not putting its considerable environmental powers to work to ensure that the nation as a whole makes real progress.

Proposed Solutions

Without a commitment to leadership and reform on the part of all governments - most especially the Australian Government – investments via NAP/NHT2 are unlikely to provide returns sufficient to achieving these programmes' goals. ACF makes forty-five specific recommendations for reform to drive more effective natural resource and environmental management - at the property, regional and national levels - key amongst which are:

1. **A National Environmental Sustainability Council** to set time-bound targets and standards for ecosystem management, strategic investment and policy reform, and to ensure performance against agreed outcomes at all levels.

2. **A single ten-year national action plan for Australia's natural heritage and resources**, with bipartisan commitment to a level of investment much more adequate to the task, and a clear strategy for distributing public funds to secure good environmental outcomes.

3. **A commitment to more effective ecosystem management**, starting with an independent assessment of regional NRM planning and delivery, a national research and training initiative, and an agreed schedule for legislative reform.

4. **Leveraging large-scale private investment in landscape repair** via a package of policies that drives profitable *and* sustainable rural industries, plus a national target for ecologically sustainable agriculture.

5. **A genuine national environmental action plan** to protect Australia's natural heritage and resources, including:
   - Ratifying the Kyoto Protocol and cutting greenhouse pollution;
   - Protecting and restoring the Murray and other rivers;
   - Upgrading Australia's network of national parks and nature reserves, and protecting remaining natural areas, especially in the north;
   - Stronger national action to control pests and weeds; and
   - Strategic protection of Australia's natural heritage from salinity.

LIST OF RECOMMENDATIONS

National Leadership and Governance Arrangements

Recommendation 1

That the Australian Government:
- Reviews the adequacy of targets and standards already set out in the various existing national natural resource & environmental strategies and programmes; and
- Develops and adopts a comprehensive set of time bound targets and standards to lead progress towards sustainable NRM across Australia.

Recommendation 2

That the Australian Government, through CoAG, assumes the lead role for driving natural resource and environmental management across Australia towards national ESD goals, and commits to using its considerable powers to this effect.

Recommendation 3

That the Australian Government establishes a statutory and expertise-based National Environmental Sustainability Council (NESC), with sound secretarial support, to:
- Develop and make recommendations to the Council of Australian Governments (CoAG) on a comprehensive and progressive reform agenda to drive Australia's ecologically sustainable development across all sectors;
- Once an agenda is agreed by CoAG (in the form of one or more intergovernmental agreements), assess, at regular intervals, State/Territory progress in meeting the reform targets, and
- Contingent on these assessments, make recommendations to the Federal Treasurer on whether or not Australian Government funds should be made available to individual states and territories, with the final funding decisions being made by the Federal Treasurer.

Recommendation 4

That the Australian Government funds the NESC, and that it reports to the Commonwealth Parliament at regular intervals.

Recommendation 5

That the Australian Government makes general-purpose grants available to the States and Territories, over a twenty-year period, contingent upon their satisfactorily implementing the national sustainability reform agenda, including targets and standards for legislative and institutional reform to drive sustainable NRM.

Recommendation 6

The CoAG agrees to merge the National Action Plan on Salinity & Water Quality and the Natural Heritage Trust into a single strategic natural resources & environmental management programme to deliver whole-of-landscape sustainability outcomes.

Recommendation 7

That the Australian Government seeks a bipartisan commitment to the proposed new national NRM programme of ten years' duration. The programme should be independently reviewed mid and end of term against a national set of nested targets and performance indicators.

The Scale and Strategy of Public Investment

Recommendation 8

That the Australian Government establishes a minimum level of investment in NRM more adequate to the task of maintaining and repairing Australia's natural capital.

Recommendation 9

That the proposed National Environmental Sustainability Council reviews all governments' expenditure to identify areas where public investments may be counter-productive to the national sustainability reform agenda, recommend to the Federal Treasurer options and targets for more appropriate expenditure, and publish these recommendations.

Recommendation 10

That the Australian Government, in an open and consultative manner, develops a national framework for strategic investment in natural resource and environmental outcomes based on a thorough ecological, as well as social and economic cost-benefit analysis.

Recommendation 11

The Envirofund be maintained specifically to encourage individuals and groups to undertake cost-effective works and initiatives alongside and complementary to regional NRM delivery. Provision should be made for differentiated grant classes to enable some applicants to establish larger projects with multi-year time horizons – particularly those with national significance - and to employ project coordinators and technical expertise where appropriate.

Regional NRM Delivery

Recommendation 12

That the NRMMC commissions a critical review of regional NRM delivery/catchment management across Australia with a view to:

- Understanding the current and potential role, responsibilities and efficacy of NRM delivery via regional community organisations and catchment groups; and
- Identifying the policy, institutional and legislative reform imperatives for effective ecosystem management in Australia.

Recommendation 13

That CoAG commits to a schedule for legislative and institutional reform to underpin more effective ecosystem management in all jurisdictions.

Recommendation 14

That the NRMMC develops a national framework for and direct adequate resources to enabling suitably qualified regional NRM organisations to:

- Develop regional environmental performance standards for agriculture, urban development and other land uses; and
- Successfully engage third party investors in commercial-environmental works.

Recommendation 15

That, as a matter of priority, the proposed National Environmental Sustainability Council:

- Reviews the adequacy of regional natural resource condition and management targets with respect to relevant and measurable data, achievability and environmental priorities;
- Reviews the adequacy of regional monitoring and adaptive management systems; and
- Ensures that all regional targets are articulated and aligned with a set of targets at national and state/territory levels.

Recommendation 16

That the Australian Government establishes a specialist Ecosystem Management Unit to:

- Accredit regional NRM plans and investment strategies, assign funds and responsibility according to need and capacity, monitor performance, and take remedial action where necessary;
- More effectively assist regional NRM organisations to develop plans and strategies articulated with national priorities and programmes;
- Work with the Land & Water Resources Audit and other R&D bodies to produce ecosystem management tools tailored to managers' needs;
- Enter into 'partnership agreements' with programme providers (including government agencies, private firms and community groups) to ensure cost-effective delivery of NRM projects and outcomes at appropriate scales; and
- Report to and take advice from the proposed National Environmental Sustainability Council to ensure regional delivery on national priorities.

Recommendation 17

That the NRMMC develops a framework for the differential accreditation of regional NRM organisations based on their level of readiness to deliver national programmes effectively.

Recommendation 18

That the NRMMC develops a nationally consistent approach to training and equipping regional NRM organisations with the full range of skills and tools needed for effective ecosystem management, and provide shared funding accordingly.

Recommendation 19

That the NRMMC immediately reviews the adequacy of regional fora/roundtables in meeting the actual needs of regional organisations to assist in the delivery of national NRM priorities.

Biodiversity Conservation

Recommendation 20

That, as a matter of priority, the Australian Government:

- Reviews the adequacy of regional biodiversity conservation targets with respect to relevant and measurable data, achievability, and adequacy in terms of national and state/territory priorities; and
- Reviews the adequacy of regional conservation monitoring systems.

Recommendation 21

That the NRMMC commits to improving the integration of biodiversity conservation into regional NRM delivery, including by:

- The development of a regionally based national 'Landscape Literacy' initiative to raise community awareness and understanding of the relevance and importance of biodiversity conservation and natural systems;
- The development of an ecosystem management training package, including regional fora specifically for this purpose;
- The development of a set of biodiversity metrics to enable land managers to translate regional targets to the property/patch scale;
- Funding the National Land and Water Resources Audit to coordinate the development of a set of up-to-date regional biodiversity datasets across the country.

Recommendation 22

That, where a conservation management issue, such as recovery of a threatened species or river protection, spans two or more regions, the NRMMC ensures that the regional NRM organisations concerned prepare complementary or shared management plans in conjunction with relevant conservation authorities.

Recommendation 23

That the NRMMC ensures that coastal regional NRM plans address relevant marine and coastal conservation issues, and are consistent with marine ecosystem management strategies.

Recommendation 24

That CoAG, as matter of urgency, commits to addressing the systemic causes of water quality decline and:

- Commit to increasing the average annual river flows in the Murray River system by 1,500GL by 2014, in order to protect the conservation values of the river system and give it a moderate chance of recovery. In addition to the $500m 'First Step', this will require an additional $1 billion in new public funds over the next decade, including a 50% funding commitment ($500m) from the Commonwealth;
- Provide an additional $500m to $1 billion in new funding under the National Water Initiative over the next decade to restore stressed rivers to health (i.e. other than the Murray river), and protect high conservation value river systems through a national system of aquatic reserves.

Recommendation 25

That the NRMMC commissions an audit of the risks to Australia's native biodiversity, and costs of lost ecosystem services, arising from secondary salinisation, together with proposals and priorities for cost-effective management actions.

Recommendation 26

That CoAG commits $360M over six years to the National Reserve System - to maintain and upgrade terrestrial protected areas, and acquire priority freshwater systems - on a 2:1 cost-sharing arrangement between the federal and state/territory governments.

Recommendation 27

That the National Reserves System be co-developed with the national approach to ecosystem management, in order to strengthen the protection of natural areas' ecological and cultural values.

Recommendation 28

That CoAG commit to strengthening and developing a nationally consistent approach to preventing and managing environmental pests and weeds, including by:

- Undertaking a biosecurity risk assessment of relevant industries, government programmes, R&D, and trade agreements;
- Setting national targets and standards for environmental pest and weed management, backed up by industry codes of practice and strong regulation;
- Strengthening the capacity of regional NRM organisations and other responsible managers to prevent and control environmental as well as agricultural pests & weeds; and
- Funding a community-based biosecurity network to help effect early warnings and rapid responses to invasive species.

Recommendation 29

That, in order to better protect Australian ecosystems and rural communities from dangerous climate change, the Australian Government should:

- Ratify the Kyoto Protocol;
- Set a national target and roadmap to reduce greenhouse pollution by at least 60% below 1990 levels by 2050 with a 20% target by 2020;
- Amend the Environmental Protection and Biodiversity Conservation Act to include a greenhouse pollution 'trigger' to allow the Federal Environment Minister to prevent major polluting projects;
- Ensure adequate signalling to industry to reduce its greenhouse pollution and boost investment in clean energy alternatives, including by introducing a revenue neutral carbon tax and raising the Mandatory Renewable Energy Target to 10% by 2010;
- Develop partnership agreements with rural industries to reduce their greenhouse pollution in line with national targets and standards; and
- Strengthen regional NRM organisations' capacity to contribute to Australia's mitigation of and adaptation to climate change.

Community Engagement

Recommendation 30

That the Australian Government undertakes measures to maintain and develop Landcare and other valuable community networks throughout the transition to regional NRM delivery.

Recommendation 31

That the National Landcare Program be more closely articulated with the proposed integrated national natural resource & environmental programme, with a view to strengthening and ensuring cost-effective delivery of NRM through local and national Landcare networks.

Recommendation 32

That the NRMMC reviews Indigenous communities' role and participation in ecosystem management and NRM generally, with a view to:

- Strengthening and supporting Indigenous Peoples' rights in the management of land and water ecosystems - on their own or in partnership with the rest of the community;
- Improving the broader community's understanding of Indigenous People's aspirations for their country; and
- Developing opportunities for sustainable economic self-determination and encouraging people back onto country.

Local Government Engagement in NRM

Recommendation 33

That CoAG agrees to a schedule for reform of local government legislation, such that all local municipalities are obliged to align their decision-making with the principles and priorities of ecosystem management.

Recommendation 34

That appropriately accredited regional NRM bodies be granted referral powers on local government land-use planning decisions, and be resourced appropriately to ensure that local government decisions match regional NRM standards.

Recommendation 35

That the NRMMC agrees to trial a number of combined municipal-catchment planning schemes, and the outcomes be used to support the development of a schedule for enabling legislation in each jurisdiction.

Recommendation 36

That the Australian Government agrees to establish a pool of special grants, to be made available to local governments based on their willingness to use the considerable powers available to them promote effective ecosystem management.

Sustainable Farming Systems and Land-Use Development

Recommendation 37

That the NRMMC commits to establishing a network of policy officers within all governments' lead agencies to identify and negotiate required changes in public programmes and policy to promote the conservation of biodiversity across the primary industries.

Recommendation 38

That the NRMMC establishes a national ecologically sustainable agriculture programme to promote interdisciplinary R&D and generate practical tools to strengthen biodiversity conservation across Australia's primary industries.

Recommendation 39

That CoAG commits to a national target for more sustainable agriculture & land management, namely that 20% of enterprises within each region should, by 2010, have put in place credible outcomes-based integrated environmental management plans. Enterprise plans should be linked to regional standards and targets, with performance audited by independent third parties.

Recommendation 40

That the Australian Government develops a comprehensive duty-of-care, reward and financial assistance framework to encourage industry uptake of outcomes-based environmental assurance schemes.

Private Sector Engagement and Market-Based Instruments

Recommendation 41

That the Australian Government funds a national 'Bush Tender' style programme to enable accredited groups to create markets for the provision of ecosystem services on private land.

Recommendation 42

That CoAG establishes a national policy package to leverage large-scale private sector investment in new, more sustainable and profitable land-uses and farming systems, specifically by:

- The establishment of statutory investment companies as tax-preferred investment vehicles to raise access to private capital for accredited commercial-environmental ventures;
- An integrated package of taxation offsets and concessions tailored to make environmental investments more attractive, with the aim of revenue neutrality;
- Nationally agreed accreditation criteria of plans for commercial-environmental ventures to ensure consistency with national and regional NRM priorities;
- Seed funding to be made available for innovative commercial ventures that yield verifiable environmental benefits;
- An Environmental Enterprise Fund to administer these programmes and concessions.

Research & Development

Recommendation 43

That the Australian Government dedicates and funds a new or appropriate existing agency to co-ordinate public interest R&D for effective ecosystem management. This should include a strong focus on informing the knowledge needs of regional NRM planning and delivery, and linking property-scale management to landscape-scale environmental outcomes.

Recommendation 44

That the Australian Government establishes the National Land & Water Resources Audit as an independent statutory authority with funding to improve Australian NRM information systems on an on-going basis, and to contribute to regular state of the environment reporting.

Recommendation 45

That the Australian Government commits to improving and institutionalising policy learning in NRM by:

- Encouraging an ongoing, open and broadly-based discourse;
- A commitment to long-term ecological monitoring, and concerted data collection and analysis to underpin adaptive management; and
- A critical and independent assessment of current institutional arrangements in government agencies.

1. INTRODUCTION – SETTING THE SCENE

> *We all love Australia's broad, striking country; the bush, the coastline, the rivers and plains. Australia is blessed… We all enjoy the environmental benefits that our ancient continent provides like the high quality food and wine that we eat and drink, clean water, holidays and fishing trips. It's our national identity, captured on postcards and in picture books.*
>
> From *Repairing the Country: An ACF and NFF Joint Vision*, 2000.

1.1 Australia's Landscapes in Transition

Managing Australia's natural heritage and resources is often a very complex task, not least because landscapes are places where people live and work and aspire to better futures. Whether we are conscious of it or not, our sense of place and value is bound up in the health of the landscapes we inhabit. Creating a hopeful future for our island continent is as much, if not more, a matter of managing ourselves - our interests and our relationship with the land - than it is trying to manage the land itself.

Sadly, we have and continue to inadvertently damage the very landscapes that define us as Australians. It is now more or less widely understood that the traditional development of our land and waters has come at enormous environmental expense, while providing us with a shared prosperity envied by much of the world. Our capacity to hand a prosperous country on to the next generation depends, however, on how well we look after the natural systems that make Australia's affluence possible.

Many of our rivers – like the Murray - and their floodplains have been deprived of natural water flows and floods that are their lifeblood. Exotic animals and plants, imported to our island for their industrial and ornamental uses, or simply by accident, proliferate. Nutrients and toxic chemicals still wash down our sinks and off our farms to pollute our precious and finite waters. Our living soils are threatened in many part of the country, as wind and water erode fragile lands and rising salinity spreads across our paddocks and into our wetlands. Australia's record of species loss is unenviable, and we are still losing native wildlife and their habitats at an alarming and unforgivable rate. Australia's incredible bushland is still being destroyed, with small fragments cut adrift in a sea of highly modified land uses and prone to further degradation. Some of the continent's last great and largely intact ecosystems, in places like the Kimberley and Tasmania, are in line for a new round of exploitation. And the greenhouse pollution we make is changing our climate – increasingly threatening our already stressed land and rivers[1].

Despite the best efforts of many people to leave the country in a better condition than we inherited it,[2] most measures of environmental condition indicate that our landscapes are in decline[3]. The web of life is fraying, and as it unravels, unique strands are lost forever and with them the foundations of our prosperity, and opportunities for all Australians – now and for generations. Aside from a few notable exceptions - such as new laws in Queensland that put the brakes on land clearing - Australia's environmental gains are mostly tactical and our losses strategic.

Australia's rural landscapes have been changing more or less slowly over the aeons, and especially since humans took up residence. More lately, however, the rate and scale of change has grown immensely[4]. Much of today's natural resource and environmental management (or 'NRM') is really

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[1] State of the Environment Committee (2001) *Australia State of the Environment 2001*, Independent Report to the Commonwealth Minister for Environment and Heritage, CSIRO Publishing on behalf of the Department of Environment and Heritage, Canberra.

[2] e.g. NSW Farmers' Association (2003) *Farmers – caring for the environment*, Media Release, http://www.nswfarmers.org.au/newsroom/news_releases/mal_peters_reelected3

[3] Australian Bureau of Statistics (2004) *Measure of Australia's Progress: The Natural Landscape*, ABS [Online] http://www.abs.gov.au/Ausstats/abs@.nsf/46d1bc47ac9d0c7bca256c470025ff87/62c0ccada5421f81ca256e7d0000264b!OpenDocument

[4] Young, A.R.M. (2000) *Environmental Change in Australia Since 1788*, Oxford University Press, Melbourne.

legacy management: We are struggling today to deal with the consequences of yesterday's policies and actions, frequently undertaken with little concern for the landscape or future generations' right to inherit healthy and productive country. The threat of spreading dryland salinity, for instance, has been caused by the large-scale destruction of native vegetation at a time when governments aggressively encouraged clearing. Most of the most prolific exotic pests and weeds got a foothold on the continent before most Australians realised the full consequences.

1.2 The Role of Government

The biophysical momentum generated by our actions, like clearing and greenhouse pollution, means that our management policies and plans must be precautionary and forward-looking, based on good risk analyses and capable of securing 'best-bet' actions. Australians' readiness to support environmental leaders and projects that they can see make a lasting difference is probably higher than ever before[5]. We must develop policies and institutions that can deal with change, and that maintain and augment the resilience of rural landscapes, not by trading off economic or social with environmental benefits, but – ideally – optimising all three lines on the national balance sheet.

Ultimately, a far-reaching, concerted and smart response is required of all sectors of society - to manage both the impacts and the underlying causes of environmental decline. It is governments, however, who have the responsibility to lead with vision, to reward community and industry leadership and deal with recalcitrance.

This paper asks the question: Is Australia really on track to sustainable landscape management? And, if not, what are some of the key changes to our present assumptions, course and drivers that are needed if we are ensure the delivery real and lasting improvement in the condition of, or at least prospects for our natural environment and resource base?

2. AIM AND SCOPE OF THIS DISCUSSION

2.1 Aims

This paper discusses, in broad terms, progress made towards the ecologically sustainable management of the continent's land and water ecosystems via the federal government's two flagship NRM programmes: The National Action Plan on Salinity and Water Quality, or 'NAP;' and the extension of the Natural Heritage Trust, or 'NHT2.'

Now that the new national approach to NRM has been underway for several years, ACF believes that it is timely to review and reflect on how far forward the NAP/NHT2 have brought Australian NRM, to what extent these programmes are fulfilling their potential, and what institutional and policy changes are required to accelerate the transition to sustainable landscapes.

2.2 Scope

This study focuses on nine key themes in natural resource management at the national level, namely:

- *National leadership and governance arrangements;*
- *The scale and strategy of public investment;*
- *Regional NRM delivery;*
- *Biodiversity conservation;*
- *Community engagement;*
- *The role of local government;*
- *The development of sustainable farming systems and land uses;*

[5]Trewin, D. (2004) *Australian Social Trends 2004,* Australian Bureau of Statistics, Canberra

- *Private sector investment and market-based instruments; and*
- *Research & development.*

This is not an exhaustive study; a full and in-depth review of individual regional plans, the performance of particular agencies or expenditure details of the two national NRM programmes is beyond the scope of this work. We have chosen to review the design and trajectory of the NAP and NHT2 as a combined, if not always-unified, entity, because that is how these programmes now present themselves.

ACF has chosen to focus on NRM in *rural* landscapes for the purposes of this discussion. Sustainable management of Australia's marine resources and coastal environment is, of course, vital to the nation's future, but it is an area that deserves specialist analysis that we have provided elsewhere[6].

2.3 The Meaning of NRM

For the purposes of this work, 'NRM' is general shorthand for 'natural resource and environmental management,' *i.e.* encompassing the conservation of Australia's biodiversity, land and waters, for their inherent value as well as their importance to agriculture and the community.

2.4 Background – Australia's 'Flagship' NRM Programmes

Although not the only public funding vehicles for natural resource and environmental management, the NAP and NHT2 are certainly the largest and, coupled, represent a marked shift in Australia's approach to NRM. They have created opportunities to make a difference to the condition of our natural resources and environment, as well as to the capacity of communities and industries to more sustainably manage the landscape.

Most states and territories have now signed distinct NHT2 and NAP bilateral agreements with the Commonwealth, establishing a largely common framework for decision-making, funding and operations at the national, state/territory and regional levels.

The NAP was effectively launched in October 2000 when the Prime Minister released the statement *Our Vital Resources: A National Action Plan for Salinity and Water Quality in Australia*[7]. This was followed in December of the same year by an in-principle agreement by the Council of Australian Governments to share equally the costs of the new programme with the aim of:

> *Motivat[ing] and [enabling] regional communities to use coordinated and targeted action to:*
> - *prevent, stabilise and reverse trends in dryland salinity affecting the sustainability of production, the conservation of biological diversity and the viability of our infrastructure, [and to]*
> - *improve water quality and secure reliable allocations for human uses, industry and the environment.*

Subsequently, the Natural Heritage Trust was extended and the programme's structure substantially overhauled to allow it to mesh more closely with the NAP[8]. The original twenty-three programmes of the NHT have now been compressed into four themes, namely: Landcare, Bushcare, Rivercare and Coastcare; although these appear to be little more than funding streams, rather than discrete programmes.

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[6] See: Smyth, C., Prideaux, M., Davey, K. and Grady, M. (2003) *Oceans Eleven: The implementation of Australia's Oceans Policy and ecosystem-based regional marine planning*, Australian Conservation Foundation, Carlton, Vic. [Online] http://www.acfonline.org.au/docs/general/00432.pdf

[7] *Our Vital Resources: A National Action Plan for Salinity and Water Quality in Australia, 2000* (Canberra: Parliament of Australia).

[8] As of May 2004, both the NAP and NHT2 are scheduled to run until 2007/08.

The NHT2's over-arching objectives[9] are:

- ***Biodiversity Conservation*** *- the conservation of Australia's biodiversity through the protection and restoration of terrestrial, freshwater, estuarine and marine ecosystems and habitat for native plants and animals.*

- ***Sustainable Use of Natural Resources*** *- the sustainable use and management of Australia's land, water and marine resources to maintain and improve the productivity and profitability of resource based industries.*

- ***Community Capacity Building and Institutional Change*** *- support for individuals, landholders, industry and communities with skills, knowledge, information and institutional frameworks to promote biodiversity conservation and sustainable resource use and management.*

ACF supports the broad goals of both of these initiatives, and welcomes the focus they bring to what are issues of high national importance.

2.5 Preparation

In the preparation of this paper, ACF has actively sought the advice and opinions of a wide variety of stakeholders, including a variety of private land managers, government agency staff, environmental advocates, catchment managers, research scientists, corporate managers, academics and others. A confidential questionnaire was forwarded to around sixty people in December 2003, with about one third responding either in writing or verbally. The range of views so distilled, coupled with numerous discussions with people involved in NRM, and ACF's own research have informed this discussion of NAP/NHT2.

It goes without saying that all points and recommendations made here are ACF's. Furthermore, ACF is aware of the limitations of this kind of work and encourages others to reflect on and debate our discussion and conclusions.

Finally, throughout the paper, ACF has sought a solutions-oriented tone, although we do not purport to have all of the answers to the challenges we put forward. Nonetheless, we believe that it is important to voice flaws in the current approach to NRM and outstanding landscape sustainability challenges in the interests of progressing public debate towards adequate solutions.

3. NATIONAL LEADERSHIP AND GOVERNANCE ARRANGEMENTS

3.1 Repairing the Country – Is Australia on the Job?

In 2000, as the Decade of Landcare was drawing to a close, ACF and the National Farmers' Federation (NFF) jointly called on the Australian Government to lead a national action plan for *Repairing the Country*[10], including:

- *A ten-year bipartisan commitment* to overcome 'short-termism' and cut through political fights to deliver improved environmental, social and economic outcomes;

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[9] Environment Australia and Agriculture, Forestry & Fisheries Australia (2002) *Framework for the Extension of the Natural Heritage Trust* [Online] http://www.nht.gov.au/publications/framework/index.html#objectives

[10] ACF & NFF (2000) *Repairing the Country – A Five Point Plan*, An ACF and NFF Joint Vision. The strategy was elaborated further in Krockenberger, M., P. Kinrade & R. Thorman (2000) *Natural Advantage: A Blueprint for a Sustainable Australia*, Australian Conservation Foundation, Fitzroy, Vic. http://www.acfonline.org.au/na/asp/pages/default.asp

- *National leadership by the Commonwealth*, including binding national targets and standards, enabling legislation, regional devolution, an emphasis on accountability of public investments, and more strategic investment;
- *A new scale of strategic investment* more adequate to the task of 'repairing the country,' totalling $6,500M per year for a decade, with $3,700M from government for demonstrable improvements in natural resource and environmental condition;
- *Strong private sector engagement* to deliver both commercial and public good environmental and social outcomes, and to fuel innovation and new ventures in rural and regional Australia; and
- *Active involvement of all Australians*, through improved landscape literacy, community capacity and the introduction of a national levy to enable taxpayers to contribute to the national investment in land and water repair.

Some of these points have been more or less picked up by governments, and it is clear that important progress has been made since 2000, in conjunction with the NAP/NHT2, including:

- A new national focus on major degrading trends, such as salinity and water quality decline;
- A shift away from the largely *ad-hoc* grants-based approach that characterised past programmes;
- The development of a joint NRM team across the federal Departments of Environment & Heritage and Agriculture, Forestry and Fisheries;
- A higher, more sustained level of investment on NRM programmes, principally from core revenue (at the federal level at least);
- An emphasis on regional NRM delivery, with funding linked to nationally accredited management and investment plans;
- A marked improvement in Australia's environmental science and information systems;
- Tentative moves towards the use of economic drivers for sustainable land-use, such as the development of a $10M pilot programme in market-based instruments; and
- The ongoing development of indicators of landscape health, NRM and community capacity outcomes for use at regional and national levels.

3.2 The Australian Government's Leadership Role

The Prime Minister's *Our Vital Resources* statement succeeded in focusing the attention of the nation and, to some degree, generating action around salinity and water quality decline. The announcement and subsequent in-principle agreement by the Council of Australian Governments on a National Action Plan for Salinity and Water Quality are a measure of the potential of the Australian Government to lead environmental reform and national action – potential that is all too often unrealised, as renowned sustainability researcher Stephen Dovers concludes:

> *Recent initiatives in Australia have been more in the nature of disjointed incrementalism, lacking continuity. Policy has been too often a stop-start affair, characterised by* ad hocery *and amnesia. Virtually every discussion of sustainability concludes that our existing institutional arrangements are part of the problem and that significant reform is required*[11].

It is well established that the Commonwealth has the potential and duty to drive progress towards sustainable NRM, in a manner that is compatible with co-operative federalism and consistent with its constitutional responsibilities[12]. In essence, the Australian Government has three broad opportunities and duties in the environmental arena, namely:

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[11] Dovers, S. (2001) *Institutions for Sustainability*, Tela Paper jointly sponsored by the Australian Conservation Foundation, the Environment Institute of Australia, and Land and Water Australia, ACF, Fitzroy, Vic. p7.

[12] Yencken, D. & Wilkinson, D. (1996) *The Environmental Role of the Commonwealth*, Outlook 1, Australian Conservation Foundation and University of Melbourne, Fitzroy and Parkville, Vic. For a discussion on the role of the Commonwealth in catchment management, see also House of Representatives Standing Committee on Environment and Heritage (2000) *Co-ordinating Catchment Management*, Report of the inquiry into catchment management, Parliament of the Commonwealth of Australia, Canberra.

- Taking responsibility for ensuring dependable and coordinated action to protect, enhance and restore environmental quality is undertaken by all levels of government, including by reforming institutions and deploying policy drivers for ecologically sustainable development;
- Getting its own house in order by striving for ecological sustainability in all of its own actions and affairs, including in non-NRM departments, investments and dealings; and
- Setting appropriate standards of environmental performance for all agents of NRM – including state, territory and local governments, as well as regional NRM organisations and federally-sponsored industry projects – monitoring performance and taking remedial action where progress is slow or lacking.

In the time since the NAP started, several significant state-level reforms have transpired, including Queensland's introduction of stronger native vegetation clearing controls, and catchment management/regional NRM reform in both New South Wales and South Australia. (ACF understands that Queensland is also examining the potential for similar reforms.) It appears that these reforms have actually been driven, at least in part, by the development of the NAP/NHT2.

The NAP bilateral negotiations and the Agreements themselves have proven too weak in the absence of legislative backing (in the case of the NAP) or sufficient political will (often on either negotiating party's part), to bring about national reforms to underpin sustainable NRM. In some cases, negotiations have dragged out over years, generating substantial community uncertainty.

Important opportunities for reform, such as reigning in land clearing, were lost in the development of the NAP (as they had previously been in the course of NHT1). Despite the Prime Minister's early insistence that funding for salinity management would be contingent on native vegetation clearing controls in areas at risk of salinisation[13], and despite provisions being made in the Bilateral Agreement, Queensland – where land clearing was highest - was one of the first states to receive federal NAP funds. Only several years later did the state finally commit to controlling clearing and providing transitional assistance to affected landholders – notably without federal assistance.

Despite some advancement, then, recent reforms for sustainable NRM at all levels of government (see also section 4 *Local Government* this paper) have been sporadic and slow, and the Australian Government's reform agenda has clearly been minimalist. It is clear that much more could have been achieved had the Commonwealth been determined to seek state/territory institutional, policy and legislative reform to underpin a stronger National Action Plan on NRM.

3.3 The Need for National NRM Targets and Standards

As Prime Minister Howard has recognised, target setting is vital to achieving a good return on public investment in NRM actions:

> [T]he 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[14].

In their work *Resetting the Compass*, David Yencken and Debra Wilkinson sum up the argument for a targeted approach in all spheres of governance:

> *A government that is really serious about the achievement of a policy outcome needs to have a policy goal, needs to set targets for the achievement of the goal, needs to have a suite of measures which in its and others' best judgement will most likely achieve those targets, needs to regularly*

[13] *Our Vital Resources* [Online] http://www.napswq.gov.au/publications/vital-resources.html
[14] Press conference transcript on the launch of *Our Vital Resources: National Action Plan for Salinity and Water Quality in Australia*, the Prime Minister, John Howard.

> *measure progress against those targets and needs to have very good feedback loops that allow adjustments to the policies and measures in the light of new information or other feedback. Setting targets is of special importance. …If there is no target, those responsible for a particular policy or set of measures have no obligation or pressure put upon them to achieve particular outcomes within any given time frame. There is a much reduced sense of urgency. A target, by contrast, is a signal that the government, organisation, policy maker or person in charge is serious…*[15]

In short, the absence of national targets makes it very difficult for anyone to judge the progress of governments in natural resource and environmental management.

A *National Framework for Natural Resource Management Standards and Targets* has been developed under the auspices of the Natural Resource Management Ministerial Council, and its development did involve the community, industry and scientists to some extent. However, the Framework provides only aspirational, intangible goals for the nation, and while this and other framework documents list a number of 'matters for targets' intended to guide regional NRM organisations in setting targets and making investment decisions, together with the roles of responsibilities of governments (a good initiative in itself), there is little or no reference to national NRM or ESD performance goals[16].

National targets and standards for some areas of natural resource management and environmental protection already exist, although the extent to which they are being actively pursued, or indeed were adequate in the first instance, is very unclear. Targets set under agreed national programmes, such as the National Water Quality Management Strategy, seem to have been ignored or at least not obviously incorporated into NAP/NHT2 programme architecture and delivery. Even where national priority outcomes, objectives and actions are thoughtfully outlined in reasonable detail, such as those agreed in 2001 for biodiversity conservation[17], they are non-binding, are only weakly backed up by a schedule of reform, and supported by – at best - weak and indirect incentives. Moreover, there appear to be no formal mechanisms to review governments' progress against agreed core outcomes.

For example, where is the assessment of governments' progress against target 1.1.1 of *National Objectives and Targets for Biodiversity Conservation*? Namely that:

> *By 2001, all jurisdictions have mechanisms in place, including regulations, at the State and regional levels that prevent decline in the conservation status of native vegetation communities as a result of land clearance…*[18]

A comprehensive set of environmental performance targets and standards at the national level is sorely needed. Targets should be derived from the set of over-arching goals and principles agreed to in the *National Strategy for Ecologically Sustainable Development*[19], should be time bound, should be coupled with indicators or performance and progress towards outcomes, should be prioritised according to urgency, and should cover:

- Institutional and policy reform at all levels of government and for all jurisdictions.
- Specific management actions and investments at the national level.
- The broad condition of our ecosystems and natural resources, using agreed indicators.
- Community and institutional capacity to deliver real improvements in natural resource and environmental condition.

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[15] Yencken, D. & Wilkinson, D. (2000) *Resetting the Compass: Australia's Journey Towards Sustainability.* CSIRO Publishing, Collingwood, Vic. p316
[16] Commonwealth of Australia (c.2001/2) *National Framework for Natural Resource Management (NRM) Standards and Targets* and *National Natural Resource Management Monitoring and Evaluation Framework.*
[17] Environment Australia (2001) *National Objectives and Targets for Biodiversity Conservation 2001-2005*, Canberra [Online] http://www.deh.gov.au/biodiversity/publications/objectives/
[18] Environment Australia (2001) *Op cit.*
[19] NSESD (1992) [Online] http://www.deh.gov.au/esd/national/nsesd/strategy/index.htmlv

Furthermore, to be meaningful, targets should be both challenging and achievable. *Challenging* means a commitment to doing more than simply maintaining the status quo and actually seek to win real and lasting improvements in environmental and natural resource condition. *Achievable* means that the target must reflect the capacity to do the job in the time allocated. 'Challenging' stretches 'achievable' and 'achievable' keeps 'challenging' realistic. In setting a set of nested targets, we should make note of the interrelatedness of Australia's environmental, social and economic problems, so that we can better arrive at integrated solutions.

Setting challenging and achievable time-bound national targets with performance indicators enables:

- National progress towards sustainable NRM to be goal orientated and strategic.
- Governments and other responsible bodies to determine the level of success and cost-effectiveness of particular actions, and if alternative approaches and/or more information are required – or even if the target it self is unrealistic, i.e. adaptive management principles applied to policy-making.
- Allows for 'back-casting' to determine the scenarios, options and opportunities for smaller steps and preconditions needed to arrive at national goals, i.e. outcomes-based reform.
- Prioritisation of actions and investments, based on the urgency of the issue, and generating a much more strategic approach.
- The Australian public to verify progress, and hence ensure greater accountability and informs community discussion and debate on the way forward.

Nested within the national target set should be agreed time bound targets for each level of governance – state/territory, regional/catchment and local. Current targets embodied in pre-NAP/NHT2 strategies and programmes should be reviewed for their achievability and the degree to which they bring the country closer to its ESD goals. However, as the House of Representatives Standing Committee on Environment & Heritage concluded, for targets to be an effective driver of reform they need to mandatory and not voluntary, albeit subject to thoughtful revision in the light of new information[20].

Recommendation 1

That the Australian Government:

- **Reviews the adequacy of targets and standards already set out in the various existing national natural resource & environmental strategies and programmes; and**
- **Develops and adopts a comprehensive set of time bound targets and standards to lead progress towards sustainable NRM across Australia.**

3.4 The Natural Resource Management Ministerial Council

As a result of a CoAG agreement to establish the NAP in 2000, a new Natural Resource Management Ministerial Council (NRMMC) was established, to address the 'NRM' functions of its predecessors - ANZECC, ARMCANZ and the Ministerial Council on Forestry, Fisheries and Aquaculture. To the degree that this amalgamation has improved integrated decision-making (in so far as it has environmental and primary industries ministers seated around the same table on a regular basis) it is a good step. ('Environmental protection' has been viewed as 'non-NRM' and hence a separate National Environment Protection Council has been established, as has a similar body devoted to primary industries.)

Any decision-making body of this kind faces the challenge of ensuring its participants demonstrate a commonality of purpose and a commitment to shared principles and objectives. Historically, while Ministerial Councils and meetings have achieved some good environmentally progressive outcomes, they have largely been ineffective at moving Australian NRM substantially forward and at ensuring

[20] HRSCEH (2000) *Ibid.* p101.

that, once made, governments undertake agreed actions[21]. The chief problem with any Ministerial Council, and perhaps the NRMMC in particular, is that it has to grapple with two areas of potential conflict: Inter-governmental as well as inter-departmental. Moreover, the NRMMC has no statutory basis, giving it a limited authority to act.

There is also concern that NRMMC's deliberations - and therefore the tone of national leadership on NRM more generally - are dominated by a production emphasis, rather than a broader sustainable landscapes approach. For instance, the Greenhouse, Agriculture and Natural Resource Management Committee is answerable to the federal Minister for Agriculture, Forestry and Fisheries, and hence the nature conservation dimensions of rural landscape management may not be being considered equally alongside primary industry issues.

3.5 The Bilateral Agreements

Implementation of the goals NAP/NHT2 is ostensibly through a series of Commonwealth-State/Territory Bilateral Agreements (based on the original NHT bilateral arrangements) that have no legislative backing, and hence are ultimately non-binding. To ACF's knowledge, no audit of party compliance with the Bilateral Agreements has yet been undertaken.

The NAP/NHT2 Bilateral Agreements are being put into practice by a plethora of state and federal agencies, often resulting in mixed messages to communities, and proving to be a source of frustration to many stakeholders. Governments are undoubtedly more or less cooperating in many areas of NRM as a result of the NAP/NHT2, but even so it seems that many stakeholders, including some government agency staff with whom ACF has consulted, are frustrated by the intergovernmental tensions that persist even now.

Governments' inability to commit funds as originally scheduled seems indicative of the degree of uncertainty generated by the bilateral negotiations process, together with catchment management reforms in New South Wales and an overly high level of expectation placed on regional communities to prepare NRM and investment plans for accreditation in the time allotted.

Later schedules for annual expenditure and accreditation of NRM plans seemed to reflect a realisation that the regionalisation process especially would take more time than first expected. At the time of the 2003 Federal Budget, the Australian Government extended the duration of the NAP by one year to 2007/08 (the NHT2 has now also been extended to 2007/08). ACF understands that this decision was made because of difficulty in getting bilateral agreements signed. While the programme's term has been extended, the total funding commitment through NAP has not changed.

At the time of writing, Western Australia has indicated its willingness to sign a NAP bilateral agreement with the Australian Government. Disagreement over the respective governments' share of responsibility remains, however, and is holding up funding to the state – three and a half years after CoAG's in-principle commitment. Additionally, regions in Queensland are still waiting for NHT2 funds to enable them to act on their plans. The Australian Government has withheld signing the Bilateral Agreement with Queensland, despite passage of legislation controlling land clearing in that state – the apparent hurdle to agreement.

3.6 Reforming National Governance of NRM

Australia is long overdue for a truly national approach to the management of its environment and natural resources. ACF believes that the Australian Government, through the Council of Australian Governments, could better lead the development of national project in sustainability.

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[21] Wells, K. (2003) *Greening the Australian Federation: A Proposal for National Institutional Reform to Promote Sustainability Across Australia*, a discussion paper prepared for the ACF.

It should be noted that effective decision-making in any inter-governmental body relies on a perennial demonstration of statesmanship, and not a withdrawal to self-interest. Nevertheless, most of CoAG's decisions to date, including those in the environmental arena, have made a lasting, if not always wholly desirable impact on Australian NRM. Decision-making by Australia's heads of government themselves engenders both a weightiness to the decision that a ministerial council cannot, and provides a more sound basis for a whole-of-government approach to ESD.

ACF believes that the Australian Government, through Council of Australian Governments, should:

- Lead national progress towards Australia's ESD goals;
- Facilitate inter-governmental co-operation to effect a continuously improving and better-integrated national response to land and water degradation, biodiversity loss and other major sustainability challenges;
- Ensure a whole-of-government approach to NRM and ESD;
- Reaching agreement on a set of nested national and state/territory targets and standards for NRM, that are articulated with targets for ESD across the board;
- Negotiate the replacement of the Bilateral Agreements with a new Intergovernmental Agreement for integrated and sustainable NRM, that sees complementary and consistent legislation introduced across all jurisdictions to enable a more effective national approach to NRM;
- Commission the development of a national NRM investment framework around the targets and standards; and
- Make major NRM investment decisions - employing ministerial councils and other relevant bodies to refine and develop its decisions.

A good model for this sort of approach already exists in the form of National Competition Policy (NCP) arrangements. In this case - by virtue of an Intergovernmental Agreement - a statutory, expertise-based National Competition Council (NCC) monitors all governments' performance against national standards of microeconomic reform and recommends federal funding on this basis.

The key statutory roles of the NCC include:
- Assess governments' progress in implementing the NCP reforms and recommendations on competition payments;
- Community education and communication covering both specific reform implementation matters and the NCP generally;
- Other specific projects requested by Australian governments[22].

This sort of 'carrot and stick' approach has worked well to drive reform in one sphere, and there is no reason why it should be any less applicable to natural resource and environmental management, via a broadly similar institutional architecture and a large measure of statesmanship on the part of our heads of government.

Recommendation 2

That the Australian Government, through CoAG, assumes the lead role for driving natural resource and environmental management across Australia towards national ESD goals, and commits to using its considerable powers to this effect.

[22] NCC (2004) *The Role of the National Competition Council* [Online] http://www.ncc.gov.au/articleZone.asp?articleZoneID=136

Recommendation 3

That the Australian Government establishes a statutory and expertise-based National Environmental Sustainability Council (NESC), with sound secretarial support, to:

- **Develop and make recommendations to the Council of Australian Governments (CoAG) on a comprehensive and progressive reform agenda to drive Australia's ecologically sustainable development across all sectors;**
- **Once an agenda is agreed by CoAG (in the form of one or more intergovernmental agreements), assess, at regular intervals, State/Territory progress in meeting the reform targets, and**
- **Contingent on these assessments, make recommendations to the Federal Treasurer on whether or not Australian Government funds should be made available to individual states and territories, with the final funding decisions being made by the Federal Treasurer.**

Recommendation 4

That the Australian Government funds the NESC, and that it reports to the Commonwealth Parliament at regular intervals.

Recommendation 5

That the Australian Government makes general-purpose grants available to the States and Territories, over a twenty-year period, contingent upon their satisfactorily implementing the national sustainability reform agenda, including targets and standards for legislative and institutional reform to drive sustainable NRM.

3.6 Two Programmes or One?

The National Action Plan on Salinity & Water Quality has served at least one useful purpose: To draw community focus on dryland salinity as a major challenge to Australia's industry and environment, and one requiring a national effort. The NAP has probably served this purpose reasonably well, but there no longer appears to be any substantive reason why the landscape management aspects (at least) of the NAPSWQ and NHT2 should remain separate.

The two programmes are already largely interdependent, rely on the same regional delivery model and are managed by the same joint federal joint NRM team. Indeed, senior government agency officers involved in managing NAP/NHT2 tend to refer to these programmes as 'two sides of the one coin.' The programmes' fusion would contribute to time and monetary cost-savings at all levels, including at the level of the regional natural resource manager who, at present, has to deal with two sets of paperwork.

Further, merging NAP and NHT2 would help to reduce confusion in the community, and further focus attention on a genuinely integrated approach to NRM to deliver good environmental and other public interest outcomes.

An additional problem with NRM programmes appears to be the uncertainty generated by their usually short time-frames, compounded by Australia's relatively short election cycle and the fact that federal election timing is subject to Government discretion. Both community goodwill and investment security can be compromised.

Short-term program funding will be turned on and off: that is a government's right. But groups need guaranteed financial and human resources and the status to know they will be still adapting a decade down the track, not wondering if they will get money next year[23].

By securing a seven year (initially) programme (the NAP), and later bringing the timing of both the NHT2 and the National Landcare Program into line with the NAP, the Australian Government has probably taken the edge of the problem. However, given the sorts of timeframes needed for many environmental investments to show real benefits, for research and adaptive management to yield results, as well as for diverse regional stakeholders to reach accord on NRM directions and decisions, government would do well to seriously consider a longer period again. Bipartisan agreement on programme duration and basic elements of design would also help to generate a sense of security for the community and industry.

Recommendation 6

The CoAG agrees to merge the National Action Plan on Salinity & Water Quality and the Natural Heritage Trust into a single strategic natural resources & environmental management programme to deliver whole-of-landscape sustainability outcomes.

Recommendation 7

That the Australian Government seeks a bipartisan commitment to the proposed new national NRM programme of ten years' duration. The programme should be independently reviewed mid and end of term against a national set of nested targets and performance indicators.

4. THE SCALE AND STRATEGY OF PUBLIC INVESTMENT

4.1 The Scale of Investment vs. the Scale of the Problems

National expenditure on NRM has increased over the last ten years, and it is heartening to see that the federal-state/territory cost-sharing arrangements for NAP/NHT2 reflect the fact that the federal and state/territory tiers share responsibility for NRM. That the NAP/NHT2 are funded from (Australian Government) core revenue and not from the sale of public assets is a further step in the right direction.

However, current expenditure through these programmes, welcome as it is, is, lacks a clear, transparent and strategic decision-making framework, and seems extremely unlikely to deliver on either programme's goals within the given time-frame.

The current combined federal-state/territory commitment to NRM through the NAP and NHT2 is approximately $1,400M and $1,000M respectively. The most recent Federal Budget added an extra $300M for the NHT2, to take the programme through until 2007/08 in line with the NAP. Therefore, total expenditure on these programmes (which represent the bulk of NRM expenditure at the national level, and include marine environmental investments) through until 2007/08, is $2,700M[24]. Presumably, the states/territories will match the Australian Government's additional NHT2 funds,

[23] Dovers, S. (2001) *Institutions for Sustainability*, Tela Paper 7, Jointly sponsored by the Australian Conservation Foundation, the Environment Institute of Australia and Land & Water Australia.

[24] On top of NAP/NHT2 programmes are commitments to the National Water Initiative, the National Landcare Program, the National Reserves System, the Snowy River Rescue Package, commitments in the Murray-Darling and Great Artesian Basins, together with a range of contributions to mixture of industry and other projects, some with environmental and natural resource benefits. Additionally, each state and territory maintains smaller NRM or NRM-related programmes outside of their commitment through NAP/NHT2. Local Governments also make a contribution to NRM to varying degrees, but their level of contribution to the NAP/NHT2 is difficult to gauge. These funds are certainly not inconsiderable, but a detailed analysis of them is not within the scope of this paper.

bringing the figure to $3,000M, or an average of $375M pa[25]. Half of this, or about $188M pa, is federal money. It is interesting to compare this figure to the total federal expenditure for 2004/05 of around $192,000M, which would make NRM roughly 0.1% of the federal budget[26].

Claims by the Australian Government that their commitment to 'Natural Heritage Trust' is $2,700M are rather disingenuous. There are fundamental differences between original (1996/97-2000/01) and the current NHT funding programme (2002/03-2007/08). Although an argument can be made that calling the new programme 'NHT' engenders a sense of continuity, NHT2 is not really an extension at all, but a new programme and should be regarded as such. As the Mid-Term Review of NHT1 found, while social capital was certainly built up, there is little hard information to suggest that expenditure to-date has brought about the kinds of strategic, tangible and large-scale changes required to address national environmental trends[27].

In 2000, the ACF/NFF *Repairing the Country* partnership, with assistance from Land and Water Australia, commissioned a study to estimate the level of funds required to meet the federal government's own national targets for NRM, together with a strategy for effective investment[28]. The estimate of national public investment in NRM required is in the order of $3,575M pa, or around ten times what is currently invested in the future productivity and health of our environment. The exact figure is less important than the scale and the strategy of national investment required to meet the challenge of landscape sustainability. As the 2000 NFF/ACF joint statement 'Repairing the Country' made clear:

> *In a way, the spending we propose represents a health insurance policy for the environment; a policy that will save money in the longer term. While the figures may be debated, clearly a great deal more public and private investment and action is required if we are to generate the changes required to make a real difference*[29].

Whilst the Australian Government's environmental and natural resource management expenditure may be 'unprecedented[30],' it still falls far short of what is needed:

In Western Australia alone, dryland salinity by itself threatens hundreds of native species and ecological communities; mostly wetland, riparian and riverine ecosystems in what is a globally recognised biodiversity hotspot[31]. The level of investment required for cost-effective direct conservation works to protect only a small fraction of these assets far outstrips the $316M that is WA's share of the NAP to 2007/08[32].

Further, Possingham and co-workers have estimated the size of investment packages required to reach many of the priority actions identified in the *National Objectives and Targets for Biodiversity*

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[25] Even if NHT1 is added to this and the timeframe is extended to include the years from 1996/97, this figure changes very little.

[26] Australian Government, 2004 Budget Overview, May 11th, 2004. http://www.budget.gov.au/2004-05/overview/download/budget_overview.pdf

[27] *Mid Term Review Final Reports - Final Reports* [Online] http://www.nht.gov.au/review/mtrfinrpt/index.html

[28] Madden, B., G. Hayes and K. Duggan (2000) *National Investment in Rural Landscapes,* A National Investment Scenario for the NFF and ACF, with assistance from LWRDC, The Virtual Consulting Group & Griffin NRM Pty Ltd http://www.acfonline.org.au/asp/pages/document.asp?IdDoc=270

[29] ACF & NFF (2000) *ibid.*

[30] Commonwealth of Australia (2004) *Rural and Regional Australia: Sustaining the Nation 2004-05,* Statement by The Hon Warren Truss, MP, The Hon. Ian MacDonald, MP, and Senator, The Hon Judith Troth. Canberra

[31] Keighey, G., Halse, S., McKenzie, N., Gibson, N., Burbudge, A. and Gomboso, J. (2000) *Salinity: Driving the catastrophic collapse of our ecosystems,* paper produced by the Western Australian Department of Conservation and Land Management, Science and Nature Conservation Divisions, Como, WA.

[32] Richard George and Dave Pannell (separately), presentations to the Australian Landcare Council, Albany, WA. Tuesday, 11/5/04

Conservation 2001-2005. Even allowing for a healthy error margin, the total cost of these actions is several times the total expenditure through the NAP and NHT2[33].

Various estimates of the costs to primary industry, built infrastructure and water supplies from land and water degradation have been made; they range from the hundreds of millions (for dryland salinity alone) to billions of dollars annually, and rising[34]. Such calculations rarely include the additional costs to tourism and local communities from damage to protected areas and cultural heritage sites, the lost opportunity costs from the loss of biodiversity, or the costs to the public health budget from declining environmental quality. Clearly, public investment in natural resource management has not yet begun to match the actual costs generated by a long legacy of unsustainable landscape management.

This sentiment seems very widespread: It is not simply that people feel that governments are under-spending on NRM, but that governments consistently and *grossly* under-estimate costs associated with implementing, for instance, regional community consultation, as well as the adequacy of managing threatening processes like salinisation or weeds.

ACF does not argue that the issue is one of money alone. It is painfully obvious that many billions of taxpayer dollars can be spent through public programmes without solving the problems that are their focus. It is also equally clear, however, that insufficient funding continues to result in a failure to yield a clear and unambiguous turnaround in the prospects for Australia's natural heritage and resources.

Clearly a strategic approach to NRM delivery is required, and the NAP/NHT2 is something of an improvement over previous national NRM programmes in this regard. However, with a such limited funds as are available through the NAP/NHT2, these programmes are highly unlikely to make more than patchy progress at best towards their goals. The rate of landscape decline continues to outpace the tiny fraction of the available resources that governments choose to invest in NRM. The choice not to invest adequately in future generations is being made by governments on behalf of Australians, and yet it does not seem to match many Australians' desire to see stronger government action on environmental issues.

In view of increased spending on other areas in the national interest, such as drought relief, defence and sugar industry assistance, it is neither naïve nor unreasonable to expect governments to review the adequacy of their current investments in NRM.

Just as importantly, however, Australia governments must to learn to spend what limited public funds are available more strategically. Further, direct and indirect subsidies of environmental decline have been grossly under-examined in Australia, with the last such attempt to assess Australia's subsidies to the unsustainable use of natural resources commissioned by an Australian Government being 1996[35]. Governments that are serious about sustainability would first systematically scrutinise their current expenditure in all areas for its contribution to sustainable or unsustainable land and water management.

Recommendation 8

That the Australian Government establishes a minimum level of investment in NRM more adequate to the task of maintaining and repairing Australia's natural capital.

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[33] Possingham, H., Ryan, S., Baxter, J. & Morton, S, (2002) *Setting Biodiversity Priorities*, A paper prepared as part of the activities of the working group producing the report Sustaining our Natural Systems and Biodiversity for the Prime Minister's Science, Engineering and Innovation Council in 2002 [Online] http://www.dest.gov.au/science/pmseic/meetings/8thmeeting.htm

[34] See, for example: Commonwealth of Australia (2000) *Australian Dryland Salinity Assessment 2000*, National Land and Water Resources Audit, Turner, ACT and Madden, *et al.* (2000) *op. cit.*

[35] National Institute of Economic & Industry Research (1996) *Subsisides to the Use of Natural Resources*. Report prepared for the Department of Environment, Sport and Territories, Canberra.

Recommendation 9

That the proposed National Environmental Sustainability Council reviews all governments' expenditure to identify areas where public investments may be counter-productive to the national sustainability reform agenda, recommend to the Federal Treasurer options and targets for more appropriate expenditure, and publish these recommendations.

4.2 'Pork-barrelling' and Cost-shifting

There is little substantive evidence of manipulation of NAP/NHT2 funds for partisan political ends, although it is clear that the suspicions of many people in the NRM sector have been raised since charges of 'pork-barrelling' were first made against the original NHT[36].

All governments, and most especially the Australian Government, will have to continue to work hard to demonstrate that progress towards greater accountability has been made, and the involvement of regional communities, together with regional NRM targets and standards will help in this regard.

The view has been expressed to ACF, however, that the proximity of federal ministers to the development of the NAP/NHT2 leaves a great deal of room for political bias to influence public investments. Some states, such as Victoria, appear to be guarding against charges of ministerial control of funds distribution, by providing a degree of separation between the Minister and the funding decisions across the state. No such measures appear to have been enacted by the Australian Government.

ACF finds that cost-shifting is still widely perceived to be a significant issue, including within the Australian Government itself. Beyond simple community perception, palpable examples of cost-shifting have emerged of late. One standout example is the recent slashing of $30M funds to the NSW National Parks and Wildlife Service at the same time as the establishment of the state's new catchment management system[37].

4.3 Strategic Investment in NRM?

The new national approach to NRM emphasises regional community-coordinated planning and delivery of management actions - a definite and welcome shift away from the traditional *ad hoc* grants-based approach of the original NHT. Now, for the most part, block-funding is being distributed through state agencies and regional NRM bodies, based on broad national goals. Additionally, a pool of funds is set aside for national/state level projects. There is a noticeable if small shift away from the traditional 'vegemite' approach, where available funds were spread across the landscape, with little apparent regard to real environmental threats and risks. The Australian Government is now more conscious of the need to monitor the outcomes of public investments, and aims to deliver NRM more strategically than in the past[38].

However, there remains considerable concern amongst many of those with whom ACF has consulted that most governments have still not yet come to grips with what a strategic approach really means, and hence are not yet distributing funds cost-effectively. As UWA resource economist Dave Pannell argues in the case of dryland salinity management:

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[36]Senator Nick Bolkus (2001) Opposition Accuses Government Of Rorting Natural Heritage Trust, AM Archive - Saturday, 19 May, Australian Broadcasting Corporation [Online] *http://www.abc.net.au/am/s299390.htm*

[37] Nature Conservation Council of NSW & Total Environment Centre (2004) *Environment Budget Slashed*, Media Release, 6/4/04, http://nccnsw.org.au/parliament/news/media/20040406_budmr0404.html

[38] Environment Australia & Agriculture, Forestry and Fisheries Australia (2000) *Mid-Term review of the Natural Heritage Trust – The Response*, [Online] http://www.nht.gov.au/review/pubs/mtrbrf1sept.pdf

> *[W]e need to adopt a framework to assess and target salinity investments. We need to reverse the planning approach so that it is asset-based and not catchment-based. We need to prioritise at State and national scale, not only at catchment scale because some of the decisions about direct investment, industry development and technology development, need to be prioritised at a higher scale than the catchment scale. The corollary of that is quite a strong one. It means that we need to modify the current role and the intended role of catchment planning groups, such as catchment management authorities*[39].

While it is vital to build a strong and skilled constituency for sustainable NRM at the regional or catchment level, it is equally if not more important to ensure a national approach to certain problems, particularly large-scale or systemic issues (e.g. environmental flows, climate change, etc.).

To date, however, the process of prioritising and allocating national NRM investments appears, on the whole, to be obscure and rushed. Allocations of national funds seem to be made without recourse to a consistent cost-benefit decision-making framework. Evidently, there is no cohesive process at the national level for third-party scrutiny of national NRM investment decisions. The NHT Advisory Board and the Australian Landcare Council do not seem to have the capacity, or indeed the mandate, to properly advise regional, state or national levels investments made through NAP/NHT2 *as an integrated approach to NRM*.

Avenues for third-party scrutiny of state-wide project funding are similarly often inadequate in terms of time and contextual information to allow community stakeholders to have a meaningful say in the allocation of funds. As far as ACF can determine, only Western Australia has substantially engaged its communities, scientists, government officers and industries in open and informed dialogue about how best to invest very limited funds in the management of dryland salinity and its impacts. In so doing, the state has given thought to a decision-making methodology that seems reasonably robust, fair and transparent, albeit imperfectly informed and faced with a horribly inadequate pool of funds[40]. A steering group with strong leadership, reasonably good community engagement, adequate time and sound secretarial support has coordinated the development of the Western Australian Salinity Investment Framework. The process seems to have generated a high level of faith, improved understanding of both the 'big picture' and 'back paddock' challenges and opportunities in salinity management, and good working relations amongst stakeholders.

4.4 Strategic Investment at the Regional Level

Regional bodies often seem to lack the resources and indeed guidance to undertake a strategic assessment of the risks to and relative worth of the environmental and natural resource assets in their care.

External community groups rarely have the capacity or the opportunity to provide an independent assessment of the quality of regional investments, although – to their credit - some regional groups and catchment authorities do actively seek such input. Moreover, the short-term nature of government regional funding contracts, plus the seemingly *ad hoc* rounds of regional competitive bids, do not appear to be particularly conducive to the stability and robustness required of strategic institutions[41].

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[39] Pannell, D.J. (2002). 'Managing salinity with markets, plants and engineering: How do we move policy forward?' Transcript of presentation to Select Committee on Salinity Seminar: *Investing in Solutions to Salinity* at Parliament House, Sydney, Monday 8 April 2002, SEA Working Paper 02/01, School of Agricultural and Resource Economics, University of Western Australia. http://www.general.uwa.edu.au/u/dpannell/dpap0201.htm

[40] Western Australian Government (2003) *Salinity Investment Framework, Interim Report – Phase 1, SLUI 32*, Salinity and Land Use Impacts Series, Department of Environment, Resources Sciences Division, East Perth.

[41] Jennings, S.F. & Moore, S.A. (2000) 'The Rhetoric behind Regionalization in Australia Natural Resource Management: Myth, Reality and Moving Forward,' *J. Environ. Policy Plann*. 2:177-191

4.5 Developing a National Framework for Strategic Investment

ACF believes that a national framework for the strategic investment of public resources in natural resource and environmental management should be developed:

- Using an agreed and consistent methodology at all scales, based on the principles of decision theory and active adaptive management.
- Focusing on the delivery of cost-effective outcomes, especially demonstrable improvement in the condition of or prospects for priority biodiversity assets and natural systems (e.g. a river system or native species) and themes (e.g. an environmental pest); as well as the development of ecosystem management capacity, new policy instruments, sustainable industries, and key R&D products.
- Using the best ecological and other relevant information sets to systematically identify Australia's natural assets at risk of degradation, the nature and magnitude of the risks, the management needs of each asset, and the social, environmental and economic costs and benefits (including collateral benefits arising from the safeguarding or improvement of ecosystem services) of different management options.
- Based on sound cost-sharing and delivery arrangements between agencies, jurisdictions, and the public, community and private sectors.
- Via thorough engagement with stakeholders and authorities nationwide over a period of not less than eighteen months to allow for proper consultation, and preferably in good time for the next round of investment planning – with a thorough review every five years.
- Consistently with the set of national targets and standards already described in this paper.

Apart from the recent advent of an NHT2-funded *Biodiversity Hotspots* programme[42], there appears to be very little evidence of the development of the kind of strategic approach outlined here. Almost certainly, elements of the approach have been used in the development of the national/state NAP/NHT2 investments, but it is very difficult to tell how well and how consistently this has been done.

A national investment framework of the kind described could co-exist with a small grants programme that facilitates local community-initiated environmental works (see below), without a wholesale return to the *ad hocery* of the original NHT. It also implies that regional NRM organisations would receive levels of funding commensurate with their level of geographic priority determined by the investment framework process, as well as their capacity to help to deliver national environmental outcomes. As work is done, environmental outcomes secured, more funding becomes available, regional capacity is raised and priorities shift with more information, then more and more regional organisations could take on greater levels of responsibility for national programme delivery. The approach outlined further implies that the Commonwealth and the States assume (or re-assume) greater responsibility for programme delivery, at least in some priority areas.

Recommendation 10

That the Australian Government, in an open and consultative manner, develops a national framework for strategic investment in natural resource and environmental outcomes based on a thorough ecological, as well as social and economic cost-benefit analysis.

4.6 Envirofund

The shift away from a largely grants-based approach to NRM, with little or no strategic focus at the national level, has been a major step forward in NRM policy design and delivery. Nevertheless, the decision to maintain a relatively small pool of funds for community environmental grants in the NHT2

[42] See http://www.deh.gov.au/biodiversity/hotspots/index.html

is sensible, since it provides for some continuity in community-initiated environmental projects. Envirofund allows community groups to undertake environmental works complementary to, but not necessarily directly aligned with the regional delivery process. It provides for some measure of innovation, and means that not all of Australia's eggs are in the regional delivery basket, so to speak.

Envirofund needs to be more adaptable to allow community groups to undertake environmental works at different scales and longer time-horizons. Also, provision should be made to enable groups to undertake effective project management, including by using grants to contribute to temporary or part-time coordinator positions in certain circumstances – ensuring community groups have the capacity to deliver good environmental returns.

The need to ensure that the distribution of Envirofund grants is free from political influence cannot be over-emphasised.

Recommendation 11

The Envirofund be maintained specifically to encourage individuals and groups to undertake cost-effective works and initiatives alongside and complementary to regional NRM delivery. Provision should be made for differentiated grant classes to enable some applicants to establish larger projects with multi-year time horizons – particularly those with national significance - and to employ project coordinators and technical expertise where appropriate.

5. REGIONAL PLANNING & DELIVERY OF NRM

5.1 The opportunities and challenges of regional NRM delivery and the ecosystem approach

Perhaps the most substantial and significant change resulting from the advent of the NAP and NHT2 is a new, more or less national trend towards devolution of NRM to the regional level. This is an ambitious strategy that seeks to build on existing state regional and catchment arrangements. It also comes with its own set of challenges and opportunities, many of which are yet to be addressed or taken up.

In all, the boundaries of fifty-six NRM regions have been drawn up by agreement between the states/territories and the Commonwealth. NAP priority regions are those (originally) selected on the basis of the water quality and dryland salinity assessments produced by the National Land and Water Resources Audit. Regional boundaries are supposed to conform more or less to bioregional or water catchment boundaries, although this is greatly dependent on pre-existing state arrangements. In many NRM regions, integrated NRM planning is carried out by more than one regional body (i.e. catchment management authority, etc.); it is unclear to what extent sub-regional or catchment groups coordinate their planning and implementation of NRM across regions.

Globally, the ecosystem approach has in recent times become a natural resource and environmental management standard. Australia's integrated natural resource management planning at the regional or catchment level seems to be an attempt to implement the ecosystem management principles endorsed by the Conference of the Parties to the Convention on Biological Diversity (CBD)[43].

The international principles of ecosystem management have and are being tested across a diverse range of different environmental, economic and socio-cultural situations around the globe. There is now a wealth of experience and literature on the subject upon which Australia could be drawing better.

[43] Convention on Biological Diversity (2000) *Decisions Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Fifth Meeting: Ecosystem Approach*, Decision V/6, UNEP/CBD/COP/5/23, Nairobi, 15-26 May 2000.

The ecosystem approach calls for management of natural resources and environmental assets and issues as interrelated systems, *at the most appropriate scale* – which may or may not be that of the catchment. Ecosystem management stresses equitable and ecologically sustainable outcomes derived from deliberative and collaborative efforts, involving all stakeholders. Its goals of managing ecosystems within their limits in such a way that the costs and benefits are shared across different sectors of society and industry, often demands profound institutional and policy reform[44]. In short, the ecosystem approach is analogous to integrated NRM at the regional or catchment level. It is worth re-iterating the basic tenets of ecosystem management[45]:

- **Holistic, integrative science:** recognising that ecosystems are complex, interrelated and dynamic, and that the effects of one decision or activity may have profound impacts on another part of the system. To 'internalise' the consequences of all decisions (even where they are seemingly unrelated to the natural environment), high quality information systems are required, such that the best available science is used at every step of the management process. Researchers should view the ecosystem as a whole and assess cumulative impacts.
- **Adaptive management:** Ecological knowledge is likely to be more or less imperfect. The sparseness and complexity of ecosystems in flux demands a degree of flexibility in management. Moreover, the urgency of many environmental problems and the risks associated with waiting for more knowledge before we act, suggests that we should employ a 'learn by doing' or adaptive approach. Decisions are seen as works in progress, are based on benchmarks of starting condition, and are consciously integrated with sound monitoring and review processes, such that management always strive to reflect our best understanding of the system.
- **Collaborative decision-making:** Ecosystems include people, and the range of people's views and expertise – ecological, political, cultural and generational – should be involved in the decision-making process. Good collaborative decision-making that leads to sound, well-informed decisions, however, should not simply be a reflexion of the lowest common denominator view.
- **Socially-defined goals and objectives:** Management should be a reflexion of societal values and not simply narrow scientific or economic views focused on single issues. However, management goals and objectives must be tempered by respect for ecological limits. Ensuring the health and resilience of the ecosystem is of paramount importance.

The CBD has fleshed out and adopted these tenets at the fifth Conference of the Parties, so they are now something of a global standard.[46] A range of variations on the ecosystem approach are being played out around the world, including Australia. The World Conservation Union's Chief Scientist Jeff McNeely and agricultural and natural resource economist Sara Scherr suggest that the implications of a commitment to ecosystem management are far-reaching and not always appreciated:

> *Ecosystem management calls for the emergence of new types of land-use planning institutions and tools to coordinate public and private investment, regulate zoning, and monitor changes in the condition of biodiversity… while decision-making needs to draw on the expertise of technical and policy specialists to estimate the likely outcomes of different options, final policy design should reflect a negotiated outcome among different farmer groups, environmental organizations, and other resource-user groups. Planning on an ecosystem scale requires that interests of different stakeholders be understood and reconciled. This requires first that conflicts and commonalities of interest be clearly identified, a process that may take a few years*[47].

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[44] See, as a starting point, Norman, L., *et al*. (1996) 'The Report of the Ecological Society of America Committee on the Scientific Basis of Ecosystem Management,' *Ecological Applications*, 6:3, pp665-691.
[45] Cortner, H. & Moote, M. (1999) *The Politics of Ecosystem Based Management*, Island Press, Washington DC.
[46] See Appendix III
[47] McNeely, J. & S. Scherr (2003) *Ecoagriculture: Strategies to Feed the World and Save Wild Biodiversity*, Island Press, Washington DC, p232.

This description paints a picture of regional community-driven NRM in the context of a rich and enabling legislative, regulatory, economic and information framework. Importantly, it also highlights some of the social and political challenges associated with the effective and integrated management of natural systems and resources.

The sum of Australian and overseas experience of ecosystem management or regionalisation of NRM seems to point to a number of general opportunities[48]:

- Regionalisation *may* result in deliberative decision-making and a broad consensus amongst various stakeholder interests on the trajectory of regional development;
- Regionalisation *may* result in cost-effective whole-of-landscape thinking, planning and delivery of NRM;
- Regional organisations *can* prove to be effective financial managers;
- Regional organisations *can* serve to link local communities, private industry and governments;
- Regionalisation *may* empower at least some sections of the community through the facilitation of government-community partnerships;
- Regional organisations *can* help to ensure regional economic development and natural resource/environmental management work hand in hand; and
- Regional organisations *can* help to raise the level of ecological literacy.

However, those same experiences also raise a range of significant challenges to effective ecosystem management, including:

- Dealing with disparities in wealth and power both within and across regions;
- Managing volunteers and the limits to voluntarism;
- Ensuring adequate representation of stakeholder interests and democratic process;
- Reconciling conflict and trade-offs between divergent interests and objectives to progress sustainable regional development;
- Co-ordination with and amongst the various tiers and agencies of government;
- Engagement and communication with various community and private sector stakeholders;
- Ensuring private and public land use planning and management meets regional priorities;
- Reconciling management issues at varying scales of time and space;
- Using science and dealing with an imperfect information base;
- Ensuring decision-making is rigorous and leads to cost-effective outcomes;
- Putting adaptive management theory into practice;
- Dealing with vested political and financial interests that may be resistant to change;
- Developing meaningful and achievable, yet challenging targets for management actions and environmental condition;
- Developing the range of skills and qualifications required to manage a large-scale enterprise; and
- Dealing with limitations on and uncertainty around their role and responsibilities.

Australia's experience with ecosystem management to date generally shows that it can take years for trust to be earnt and capacity to be built up to a level that will effectively drive change - amongst various stakeholder representatives, and between communities and the regional group itself. Under the current NRM programmes, however, regional groups have been pressed to develop plans in a very short space of time, often with insufficient or unclear guidance from governments.

It seems that a number of communities have found the process for developing and accrediting regional NRM plans a confusing and frustrating one. The degree to which groups have had difficulty seems to

[48] See, for example, Lane, *et al.* (2004) *Ibid*.; Meffe, G.K., L.A. Nielsen, R.L. Knight & D.A. Schenborn, 2002. *Ecosystem Management: Adaptive Community-based Conservation*, Island Press; Jennings & Moore (2000) *Ibid*.; Lackey, R.T. (1998) Ecosystem management: paradigms and prattle, people and prizes, *Renewable Resources Journal*. 16(1):8-13; Robertson, A. & Pratley, J. (1998) 'From Farm Management to Ecosystem Management,' in Pratley, J. and Robertson, A. (eds), *Agriculture and the Environmental Imperative*, CSIRO Publishing, Collingwood, Vic., pp243-263.

reflect the level of organisational maturity of the NRM region, which in turn is a reflexion of the state or territory experience with integrated catchment management.

There remains a widespread lack of clarity on the roles and responsibilities of regional NRM organisations. Many appear to lack the wherewithal to effectively drive the kinds of changes in land and water management required. As matters stand, the more established regional bodies with the political clout and financial wherewithal - often in high-value irrigation districts - are better placed to take the lead, than those in low-rainfall country and marginal agricultural areas. It is also no surprise that Victoria, with its strong catchment management tradition, including statutory backing, has been the first to have integrated NRM plans nationally accredited. Anecdotal evidence suggests that those states that lack a strong catchment management tradition – such as Western Australia, South Australia, Tasmania and Queensland – are finding the regionalisation process comparatively difficult. Even within states, however, the preparedness of communities to engage in regional NRM delivery varies immensely.

In so far as there is a heavy emphasis on NRM delivery via regional communities with (mostly) voluntary boards, and a reliance on the voluntary uptake of regional plans, the NAP/NHT2 are still too reliant on voluntarism to generate landscape change. Voluntarism has natural limits – as evidenced in part by the level of burnout in the Landcare community – and voluntary environmental measures cannot be relied on to effect the kind of change needed. Australia is in danger of failing to learn from the lessons of the Decade of Landcare[49]. To the extent that the regional NRM model represents a 'retreat of government[50]' then it is unlikely to be successful. Governments are renowned for devolving responsibility to community-based bodies without arming them with the resources and authority required to live up to those responsibilities[51].

Australian social researchers have commented that regional/catchment boundaries are rarely chosen to coincide with social and cultural parameters[52]. In other words, those who fall within a regional boundary may not feel any affinity for the region, and hence question its relevance to their aspirations and their willingness to be involved. Moreover, the scale of Australia's NRM regions may, in some circumstances, not be the best scale at which to manage particular ecological issues, such as where the range of threatened species crosses several NRM regions.

Good ecosystem management takes account of the different scales at which different issues – ecological, social and economic – play out, and reconciles management planning and actions accordingly. It would be commonsense to periodically review the capacity of NRM regional bodies to undertake effective management with respect to different issues and varying scales. To begin with, ecosystem management in Australia would benefit from further debate and critical thinking, in the light of empirical evidence and case studies, including a sizable body of international literature[53].

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[49] Curtis, A. & Byron, I. (2002) *Managing burnout in Landcare*. Paper presented to the National Landcare Facilitator's Conference. November 25-28, Hahndorf, Mount Lofty Ranges, South Australia.
[50] See Figgis, P. (2004) *Conservation on Private Land: the Australian Experience*, IUCN, Gland, Switzerland & Cambridge, UK.
[51] Lane, M.B., G.T. MacDonald & T.H. Morrison (2004) 'Decentralisation and Environmental Management in Australia: a Comment on the Prescriptions of the Wentworth Group,' *Australian Geographical Studies*, 42(1): 103-115.
[52] Brunckhorst, D., P. Coop & I. Reeve (2002) *Designing 'Eco-civic' Regions for NRM*, Final Report on Land & Water Australia UNE 35: Ecological and Social Functions Influencing the Governance of Natural Resources, Institute for Rural Futures, University of New England, Armidale, NSW.
[53] See, for instance, the website of the World Conservation Union: www.iucn.org

Recommendation 12

That the NRMMC commissions an independent critical review of regional NRM delivery/catchment management across Australia with a view to:

- **Understanding the current and potential role, responsibilities and efficacy of NRM delivery via regional community organisations and catchment groups; and**
- **Identifying the policy, institutional and legislative reform imperatives for effective ecosystem management in Australia.**

Recommendation 13

That CoAG commits to a schedule for legislative and institutional reform to underpin more effective ecosystem management in all jurisdictions.

5.2 Third-party engagement for landscape change

As they stand, regional NRM organisations can only weakly influence the resource management decisions of private land managers – the decisions that are often crucial to effective ecosystem management. Many regional-catchment plans remain largely irrelevant to private land managers and key sections of community are often not engaged in critical decision-making. In NRM delivery, moreover, regional groups often lack the extension capacity to ensure private land managers understand the relevance of their property management decisions to their catchment, to help them interpret relevant NRM information packages, and develop property management plans that are aligned with regional priorities.

Given that the Australian Government appears to be enthusiastic about leveraging third-party investment from its investments in NRM, it is odd that the joint NRM team does not require or at least encourage regional bodies to report on such third-party contributions as they have been to attract to their investment plans. The capacity of regional bodies to attract and engage third-party investors should be also raised to a level where multi-million dollar proposals can be discussed and assessed on their potential to contribute to regional targets and standards. This capacity is grossly lacking at present.

However, regional organisations can play a key role in arresting ecosystem decline in a number of ways, including:

- Guiding and capitalising on the wide range of land use planning, fiscal and other powers of local governments to drive positive landscape change;
- Developing credible regional environmental performance standards for agriculture, urban development and other land uses;
- Developing credible regional eco-labels to reward businesses that meet with high standards of environmental performance (and not simply a process, such as an Environmental Management System);
- Identifying and accrediting proposals for commercially-viable and environmentally beneficial ventures, such as the delivery of ecosystem services through agro-forestry or revegetation, such that these projects receive preferential public and private investment; and
- Assuming a strong information brokerage role to attract and inform environmentally beneficial third-party investments, or accrediting local community groups – such as Greening Australia – to assume this role on the region's behalf.

Some not-for-profit groups have indicated that they face great difficulty in engaging many regional NRM organisations in investment proposals, even if the groups has been located in the regional community for some time and is familiar with the region's environmental priorities. A national fair tendering system that better recognises local knowledge, skills and networks – including local

Landcare groups - in the delivery of cost-effective environmental repair works would seem to be an appropriate measure.

At present, it seems that potential private and community sector investors are turning away from many regional NRM organisations because the latter are not yet sufficiently organisationally mature or equipped with the right skills to provide a sense of security or take up such opportunities.

Many if not most regional NRM bodies probably lack the wherewithal to take on these kinds of responsibilities at this stage, so several key capacity issues would need to be addressed as preconditions:

- The capacity of regional bodies to engage third-party interests, such as multi-million dollar agro-forestry investors or not-for-profit ecological restoration groups, would have to be raised substantially;
- Stringent nationally consistent tests of public interest and strong accountability measures are essential; and
- The incorporation of accounting for third-party investments into the reporting requirements of regional bodies should be standard.

Regional NRM Plans that identified opportunities for and better informed individual enterprises of their landscape responsibilities would be much more detailed than most of those currently in existence or under development.

Recommendation 14

That the NRMMC develops a national framework for and direct adequate resources to enabling suitably qualified regional NRM organisations to:

- **Develop regional environmental performance standards for agriculture, urban development and other land uses; and**
- **Successfully engage third party investors in commercial-environmental works.**

5.3 Regional Targets & Standards, and Monitoring & Evaluation

A recent report by the CSIRO and the Bureau of Meteorology[54] concluded that, while significant advances in our understanding of the state of the environment had been made as a result of national NRM programmes, regional NRM targets often lack a sound scientific basis. Moreover, the quality of monitoring systems to track progress towards targets, and feedback data to inform adaptive management – an internationally agreed principle of ecosystem management - appears to be highly variable. The view held by some who have been directly involved in the planning processes of a number of regional-catchment organisations is that scientific soundness is frequently sacrificed for consultation.

Many of the NRM issues confronting regional boards are complex, and the importance of allowing regional NRM decision-makers sufficient time and advice to come to terms with important ecosystem management concepts seems to have been poorly recognised by governments. The developing 'targeted' approach to NRM is a welcome change, but the absence of national-level targets to guide regional delivery is an outstanding flaw in national NRM governance.

A great deal of uncertainty, therefore, remains as to the quality of the regional target-setting process, to what extent targets are informed by science, to what degree key stakeholders in communities - and

[54] Chartres, *et al.* (2004) *Scientific Advice on Natural Resource Management*: A Report to the Natural Resource Management Ministerial Council, by the CSIRO and the Australian Bureau of Meteorology. [Online] http://www.nrm.gov.au/publications/sci-advice/#download

even regional-catchment boards themselves – understand what the targets imply in terms of landscape change, and whether regional bodies have anything more powerful than persuasion with which to change the way private land is managed. These conclusions have profound implications for the cost-effectiveness of current public investments through the NAP and NHT2.

Recommendation 15

That, as a matter of priority, the proposed National Environmental Sustainability Council:

- **Reviews the adequacy of regional natural resource condition and management targets with respect to relevant and measurable data, achievability and environmental priorities;**
- **Reviews the adequacy of regional monitoring and adaptive management systems; and**
- **Ensures that all regional targets are articulated and aligned with a set of targets at national and state/territory levels.**

5.4 Skills and capacity for effective ecosystem management

The following skills would seem to be fundamental to the delivery of sustainable NRM at the regional level:

- Project management;
- Corporate governance;
- Communications and media management;
- Environmental law;
- People and leadership skills, including engagement with Indigenous interests;
- Conservation biology and landscape processes; and
- Management of trade-offs, decision theory and adaptive management.

Consultation with a variety of people involved in regional NRM delivery across Australia paints a picture of regional organisations generally lacking several or all of these skill sets. Regional bodies are often deprived of the information, tools and human resources required to properly carry out the tasks now expected of them by government. Those who serve on regional/catchment boards bring a wide range of experiences and skills to the table, but many, if not most, lack some of the essential competencies needed to accountably manage multi-million dollar enterprises on behalf of the public. In some cases, members of regional boards (paraphrasing one Western Australian regional board member) don't even know that they don't know what they need to know.

As studies carried out by the Bureau of Rural Sciences suggest[55], the design and delivery of training and education packages should be carried out in recognition of the fact that NRM necessarily involves and depends on a wide range of players and different types of knowledge and skill sets – including non-scientific and non-technical knowledge. Education and training needs to be tailored to meet the needs of regional communities, and appreciate the host of different perspectives people bring to the NRM table. Planning and capacity building also need to be thought of as cyclical and adaptive processes.

According to many attendees with whom ACF has consulted, the annual 'regional roundtables' or 'community forums' have so far proven inadequate in terms of facilitating the development of NRM governance skills or providing clear guidance through a complex new process. It certainly seems important to encourage regional organisation representatives from across the country to meet face-to-face periodically, and the fora may be important opportunities for the Australian and other governments to receive feedback on the roll-out of the NAP/NHT2 and other programmes. Given the

[55] Aslin, H. J., Mazur, N.A. & Curtis, A.L. 2002 *Identifying regional skill and training needs for integrated natural resource management planning.* Bureau of Rural Sciences, Canberra.

level of dissatisfaction ACF has detected, however, it is worth reviewing the roundtables' basis and structure, and even considering alternatives.

Sufficient funds should be made available to regional bodies to enable them to undertake training as required by their level of responsibility and the challenges they face. Additionally, regions should have access to multi-disciplinary NRM teams covering skills such as hydrology, soil science, sustainable farming systems, geology, conservation ecology and socio-economics according to their needs. Use should be made of local expertise where appropriate, and a measurable outcome of expert involvement in regional planning should be knowledge and technology transfer.

While much maligned as a frustrating, disempowering obstacle, bureaucracy – *i.e.* a workforce whose primary task it is to administrate the delivery of public policies and programmes - is an essential investment in a complex society attempting to deal with complex matters like environmental and natural resource management. Realistically, capacity building for effective decentralised NRM decision-making is highly unlikely to lead to a clearing away of 'unnecessary' bureaucracy. Rather, regional bodies will continue to require support from the public service, and will themselves acquire more and more staff as needs and means be. Successful regionalisation should not result in a slimmer public service, nor should it lead to the de-funding of other core areas of environmental and natural resource management.

The Australian Government needs to develop a genuine partnership approach to regional delivery, one that matches the responsibility for the deployment of national resources with the ability of the regional organisation (*i.e.* organisational maturity, skills, support, resources, etc.) to actually deliver cost-effective nationally (as well as locally) important outcomes. This 'differential accreditation' of regional NRM organisations should formally reflect capacity such that all stakeholders – external and internal – are clear on the organisation's responsibilities and role.

In those instances where the regional apparatus fails to deliver on issues of a high national priority, then governments must be prepared to take remedial action and take up the slack, temporarily at least. Governments must be mindful of the limits and needs of regional bodies, even if regions themselves are unaware of those limits and needs.

The recent recruitment of NRM Facilitators is a welcome sign that the Australian Government in some measure understands that effective regional NRM delivery requires both professional facilitation and a direct line of communication with the national administration. It is unfortunate that these facilitators were not in place much earlier in the life of the regionalisation process, and time will tell whether their presence is sufficient to make a significant difference to the quality of regional delivery.

For the most part, it is too early to say definitively whether the new regional arrangements are making any kind of difference to landscape degradation. Most regional groups have spent much of their time during the years since the NAP and NHT2 commenced negotiating their way through the new requirements for planning and investment, and discussing and drawing up plans for accreditation.

ACF does not believe that there is any reason for a wholesale abandonment of the regionalisation experiment, but there are good reasons to approach regional NRM delivery with caution. Regionalisation of NRM should be viewed as a 'work in progress,' and not as a panacea. If ecosystem management is to work in various Australian contexts, then governments, as well as regional communities themselves, will need to take stock of what is required to make it work, and the limitations of community-driven NRM. The future of the regional model hinges on how well its challenges are recognised and its opportunities developed via a tapestry of institutional changes and new policies, as well as sheer resourcing and specialist assistance.

Recommendation 16

That the Australian Government establishes a specialist Ecosystem Management Unit to:

- **Accredit regional NRM plans and investment strategies, assign funds and responsibility according to need and capacity, monitor performance, and take remedial action where necessary;**
- **More effectively assist regional NRM organisations to develop plans and strategies articulated with national priorities and programmes;**
- **Work with the Land & Water Resources Audit and other R&D bodies to produce ecosystem management tools tailored to managers' needs;**
- **Enter into 'partnership agreements' with programme providers (including government agencies, private firms and community groups) to ensure cost-effective delivery of NRM projects and outcomes at appropriate scales; and**
- **Report to and take advice from the proposed National Environmental Sustainability Council to ensure regional delivery on national priorities.**

Recommendation 17

That the NRMMC develops a framework for the differential accreditation of regional NRM organisations based on their level of readiness to deliver national programmes effectively.

Recommendation 18

That the NRMMC develops a nationally consistent approach to training and equipping regional NRM organisations with the full range of skills and tools needed for effective ecosystem management, and provide shared funding accordingly.

Recommendation 19

That the NRMMC immediately reviews the adequacy of regional fora/roundtables in meeting the actual needs of regional organisations to assist in the delivery of national NRM priorities.

6. BIODIVERSITY CONSERVATION

The conservation of Australia's biodiversity is a core and inseparable element of the concept of sustainability, sustainable NRM and ecosystem management. It follows that successful NRM – at all scales - demands that the resources of the public, private and community sectors are brought to bear to stem the current biodiversity haemorrhage.

The 2001 State of the Environment Report and the Australian Terrestrial Biodiversity Assessment paint a grim picture of the prospects of Australia's native biodiversity, both on and off-reserve. Unless threatening processes - principally land clearance and habitat fragmentation, secondary salinisation, pests and weeds, modification of river flows, and climate change - together with the underlying political, social, institutional and economic causes, are systematically addressed, Australia is unlikely to meet its obligation to conserve nature.

6.1 Integrating Biodiversity Conservation into Regional NRM Delivery

Biodiversity and conservation management are challenging and intangible concepts for many people, even experienced land managers. Anecdotal evidence from around Australia suggests that the integration of biodiversity conservation into regional NRM planning is of variable quality at best.

A 2003 study of biodiversity conservation in regional NRM planning[56] identified a number of areas where regions are compromised in their capacity to deliver conservation outcomes, including a limited understanding of values and threats, limited understanding of ecosystem management principles and practices, lack of professional support, and uncertainty as to the reliability of outcomes. (ACF notes the effort of the NRMMC to begin to improve the situation by virtue of this study.)

ACF finds that poor guidance at the national level (principally the framework documents) and a lack of practical tools for benchmarking and tracking changes in biodiversity value also seem to impede regional delivery of conservation outcomes.

From a national NGO perspective, it has proven extremely difficult to provide input into regional NRM planning. Many regional groups admit they have trouble grasping biodiversity conservation and habitat restoration in particular, and conservation interests are often poorly represented on regional boards. Without a continuous presence in many regions, civil society environmental organisations - whose advice and insight regional groups might otherwise find beneficial - often lack the capacity to critically review plans and priorities, or lend a hand through information and assistance in on-ground operations. To date, these sorts of 'extension' have been provided to some degree through an assortment of different providers of variable quality, and often not in an integrated fashion.

Additionally, community groups working with regional groups on 'cross-boundary' issues, such as management of a threatened bird species, or management of values and threats at the marine-terrestrial interface, have indicated that low regional recognition and acceptance of responsibility for these sorts of issues can be a hurdle to conservation.

It seems clear that the integration of biodiversity conservation into regional planning is largely inadequate at present. Remedying this problem should be a major priority for governments now entrusting an increasing level of responsibility for the conservation of Australia's natural heritage to regional communities.

The 2002 Australian Terrestrial Biodiversity Assessment recommended that regional NRM plans and investments should, for the most part, focus on dealing with priority threatening processes[57]. The Assessment's authors' further emphasised the need for governments to ensure a good return on regional NRM investment plans by using a mixture of regulatory, financial, planning and educative measures to back up regional delivery. In other words, regional NRM delivery is likely to be an ineffective conservation measure in the absence of a rich policy and institutional framework.

Recommendation 20

That, as a matter of priority, the Australian Government:

- **Reviews the adequacy of regional biodiversity conservation targets with respect to relevant and measurable data, achievability, and adequacy in terms of national and state/territory priorities; and**
- **Reviews the adequacy of regional conservation monitoring systems.**

[56] Read, V. & Bessen, B. (2003) *Mechanisms for Improved Integration of Biodiversity Conservation in Regional NRM Planning*, Report prepared for Environment Australia, Commonwealth of Australia: Canberra.
[57] Commonwealth of Australia (2002) *Australian Terrestrial Biodiversity Assessment 2002*, National Land and Water Resources Audit, Turner, ACT

Recommendation 21

That the NRMMC commits to improving the integration of biodiversity conservation into regional NRM delivery, including by:

- **The development of a regionally based national 'Landscape Literacy' initiative to raise community awareness and understanding of the relevance and importance of biodiversity conservation and natural systems;**
- **The development of an ecosystem management training package, including regional fora specifically for this purpose;**
- **The development of a set of biodiversity metrics to enable land managers to translate regional targets to the property/patch scale;**
- **Funding the National Land and Water Resources Audit to coordinate the development of a set of up-to-date regional biodiversity datasets across the country.**

Recommendation 22

That, where a conservation management issue, such as recovery of a threatened species or river protection, spans two or more regions, the NRMMC ensures that the regional NRM organisations concerned prepare complementary or shared management plans in conjunction with relevant conservation authorities.

Recommendation 23

That the NRMMC ensures that coastal regional NRM plans address relevant marine and coastal conservation issues, and are consistent with marine ecosystem management strategies.

6.2 Salinity, Water Quality and Biodiversity Conservation

The conservation of Australia's biodiversity is a goal both of the NHT2, as well as of the NAP with respect to deteriorating water quality and salinisation. However, ACF finds that the NAP is often seen as a distinctly non-biodiversity-oriented programme. Indeed, the community has received mixed messages from Australian Government's Joint NRM Team on this subject.

The attention to secondary salinisation, as a key threatening process[58] for many ecological communities and potentially several thousand native species, is welcome. It remains to be seen, however, how well the NAP deals with salinity's impacts on biodiversity assets. NAP projects seem to be generating a more detailed and larger database – including salinity hazard maps – that should facilitate better, more cost-effective asset protection. However, while our understanding of the impacts of secondary salinisation on different species of native plants and animals, and ecosystems, has improved markedly in recent years, land and water managers still lack the tools needed to inform investments in salinity management for conservation. Still, it seems that precious little attention is being paid to the need for information on salinity changes and nature conservation, let alone establishing adequate management responses in most cases.

Managing dryland salinity and its impacts on biodiversity assets requires, firstly, that profitable options for strategic and large-scale land use change be developed as soon as possible to hold groundwater movements in check, and, secondly, that strategic, cost-effective and specific interventions (including groundwater pumping) be used to protect assets at risk. At this stage, it does not appear as though the NAP is taking this kind of strategic approach, and hence the programme's capacity to protect high

[58] For an overview of the threat posed by salinity to Australia's natural heritage, see also ACF (2003) *Salt: Nature in the Balance*, A community information kit produced by the ACF-Southcorp Alliance, ACF: Carlton.

conservation value areas at risk of salinity damage would appear to be very low. At the very least, it would seem to be squarely in the public interest to ascertain the salinity management needs of Australian ecosystems to better secure a fair return on current investments through the NAP.

Likewise, regional targets for the conservation management of biodiversity dependent upon water quality (beyond salinisation) are unlikely to be achievable without large-scale action to restore environmental flows to stressed rivers like the Murray, together with other key actions, such as freshwater reserves and pest control.

The National Water Initiative championed by the Australian Government, and the recent CoAG agreement[59], lay the foundations for good water policy but provide no new funding and no timeline to achieve what leading river scientists agree is required to give the Murray River system a 'moderate' chance of recovery, namely an increase in average annual environmental flows of 1,500 GL within a decade[60]. While the 'first step' decision of CoAG to fund water-use efficiency and return around 500GL to the river system is worthwhile, and some state-level reforms (such as those of Victoria[61]) are very promising, unless it is quickly followed by a commitment to adequate action and investment, the Murray, and its floodplains, wetlands and native fish species are highly likely to continue to decline. This is in spite of NHT2, the NAP and numerous other smaller NRM investments.

In other words, there is a threshold of action and investment that is required to manage Australian landscapes in an ecologically sustainable manner. Unless the systemic causes of biodiversity loss are adequately addressed, many regional targets will prove unachievable, and the NAP/NHT2 wholly inadequate.

Recommendation 24

That CoAG, as matter of urgency, commits to addressing the systemic causes of water quality decline and:

- **Commit to increasing the average annual river flows in the Murray River system by 1,500GL by 2014, in order to protect the conservation values of the river system and give it a moderate chance of recovery. In addition to the $500m 'First Step', this will require an additional $1 billion in new public funds over the next decade, including a 50% funding commitment ($500m) from the Commonwealth;**
- **Provide an additional $500m to $1 billion in new funding under the National Water Initiative over the next decade to restore stressed rivers to health (i.e. other than the Murray river), and protect high conservation value river systems through a national system of aquatic reserves.**

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[59] CoAG Meeting, 25th of June, 2004, http://www.coag.gov.au/meetings/250604/index.htm
[60] *Leaked Report still holds water for the River Murray*, Media Release, CRC Freshwater Ecology, 29/09/03
[61] Victorian Government (2004) *Securing Our Water Future Together*, Victoria's Action Plan for a Secure Water Future, Department of Sustainability and Environment, Melbourne. [Online] www.dse.vic.gov.au

Recommendation 25

That the NRMMC commission an audit of the risks to Australia's native biodiversity, and costs of lost ecosystem services, arising from salinisation, together with proposals and priorities for cost-effective management actions.

6.3 Protected Areas and Regional NRM

Australia's dedicated public conservation estate – national parks and nature reserves - represents the geographic core of the nation's conservation strengths.

Less than ten percent of the continent is classed as a protected area for its natural and/or cultural heritage. Many parks and reserves sit in a highly fragmented landscape, often surrounded by other land uses, including agriculture. Protected area establishment and good management are one of the most cost-effective public policy tools for the conservation of Australia's native biodiversity. The Prime Minister's Science, Engineering and Innovation Council estimated that an investment of $300-400M would achieve 80% protection of the full range of regional ecosystems (an established national target), save 14,700 native species and result in collateral benefits of $2,000M[62].

In 2002-03, the Australian Government National Reserve System Program (NRSP) funding only totalled $11.45M while funding for the Indigenous Protected Areas Program totalled $1.99M[63]. This is less than half of the $23.6m spent in 2001-02. There is recent information that suggests that the funding for the current year has fallen dramatically to a mere $2.33M[64]. Current NRS funding is therefore completely inadequate given the scale and importance of the task.

Further, Australia's major national parks constitute a key attraction of our multi-billion dollar tourism industry, and their actual and potential value to regional economies (including non-monetary values and the delivery of ecosystem services) should not be under-estimated.

Australia's protected areas are and should remain a distinct class of land-use for their natural and cultural heritage values, but the viability of Australia's National Reserve System (NRS) will depend not only on adequate selection, design and management effectiveness, but the sympathetic management of public and private adjacent lands.

ACF finds that opportunities to use regional NRM planning to strengthen the management of Australia's parks and reserves do not appear to have been taken up, by-and-large. Sufficient resources need to be made available to enable regional NRM organisations to engage with protected area managers, Indigenous groups, private sector interests and community groups to carry out these tasks.

Recommendation 26

That CoAG commit $360M over six years to the National Reserve System - to maintain and upgrade terrestrial protected areas, and acquire priority freshwater systems - on a 2:1 cost-sharing arrangement between the federal and state/territory governments.

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[62] Possingham, H., Ryan, S., Baxter, J. & Morton, S. 2002. *Setting Biodiversity Priorities*. A paper prepared as part of the activities of the working group producing the report Sustaining our Natural Systems and Biodiversity for the Prime Minister's Science, Engineering and Innovation Council in 2002. DEST, Canberra. p9.

[63] Department of the Environment and Heritage (DEH). 2003. *Department of the Environment and Heritage Annual Report 02-03*. DEH: Canberra; DEH 2002. *Department of the Environment and Heritage Annual Report 01-02*. DEH: Canberra.

[64] Senator Andrew Bartlett, Media release, 26/3/2004

Recommendation 27

That the National Reserves System be co-developed with the national approach to ecosystem management, in order to strengthen the protection of natural areas' ecological and cultural values.

6.4 Invasive Species and Biodiversity Conservation

Bioinvasion – the impact of exotic weeds, pests and diseases on Australian ecosystems – is one of the greatest threats to the ecological health of Australian landscapes.

Management of mainly agricultural weeds and pests is often high on the list of priorities of private land managers, and groups like Landcare are often closest to the threats and impacts of weeds and pests. Therefore, voluntary uptake of management actions by landholders and regional community support for a strong, nationally consistent response to invasive species are likely to be high.

ACF acknowledges and applauds the work undertaken by the Australian Government through the National Weeds and Feral Animal Control Programs, the appointment of a National Weeds Management Facilitator, and the focus on strategic weed management in NHT2.

Despite these developments, ACF finds that the current national response to bioinvasions is weak[65]. Further, regional targets for pest and weed control are unlikely to be effective without concerted national action on what is one of Australia's top threatening processes, including:

- A framework of national targets and standards for biosecurity and invasive species management, including a schedule for the implementation of a set of statutory controls on invasive species;
- A strategic focus on, along with adequate investment in the control of invasive species with respect to Australia's biodiversity assets of high conservation value;
- A national community-based biosecurity network to effect early warnings of and rapid responses to invasive species;
- Increased funding to regional NRM organisations, protected area managers, and private landholder groups to enable them implement adequate prevention, control and monitoring of environmental as well as agricultural pests and weeds;
- Systematic scrutiny of all government and industry programmes, including agronomic R&D, trade agreements, and so on, for their biosecurity risk; and
- Codes of practice, backed up by strong regulatory enforcement, for all industries with the potential to introduce and spread invasive species.

The risk of bioinvasion grows as Australia becomes more and more a part of an interconnected world. Australia's first and best policy response to the environmental and economic risks associated with bioinvasive species is to prevent them from entering the country and to ensure a rapid response to invaders when they do arrive.

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[65] For a comprehensive overview of the bioinvasive threat to biodiversity, and an overview of current weaknesses Australia's response, see also WWF Australia (2003) *Weeds and Pests: eradicating the invasive threat*, Position Paper 03/01 WWF Australia: Sydney.

Recommendation 28

That CoAG commits to strengthening and developing a nationally consistent approach to preventing and managing environmental pests and weeds, including by:

- **Undertaking a biosecurity risk assessment of relevant industries, government programmes, R&D, and trade agreements;**
- **Setting national targets and standards for environmental pest and weed management, backed up by industry codes of practice and strong regulation;**
- **Strengthening the capacity of regional NRM organisations and other responsible managers to prevent and control environmental as well as agricultural pests & weeds; and**
- **Funding a community-based biosecurity network to help effect early warnings and rapid responses to invasive species.**

6.5 Climate Change, Biodiversity Conservation and Sustainable Production

The human-induced climate change that is already occurring represents an emerging and potentially extremely dangerous threat to Australia. In the decades to come, this process is likely to overshadow every NRM decision. Natural resource and environmental management, primary industries, and climate change are intertwined with one another. Yet, with few exceptions, ACF finds that, to date, integration of climate change mitigation and adaptation into NRM is generally lacking or very weak at best.

Australia has the unenviable reputation of having one of the highest *per capita* rates of greenhouse gas emissions in the world[66], and there is now evidence that the most recent drought, one of the worst on record, is partly as a result of rising greenhouse pollution[67]. The fact that gross average farm production fell by about a fifth[68] and farm employment by a quarter[69] (about 100,000 jobs in 2002/03) should be sufficient to convince most stakeholders of the potential for substantial disruption to farming communities and businesses. Indeed, the National Farmers Federation recently highlighted climate change as "possibly the biggest risk facing Australian farmers in the coming century…"[70] The inevitable financial consequences of climate change are likely to reduce land managers' capacity to undertake effective biodiversity conservation and sustainable natural resource management practices.

> *Global warming is occurring at a rate that will clearly affect biological systems in Australia. The net effect for the majority of Australian agricultural sectors will be significantly negative*[71].

According to the Australian Greenhouse Office, agriculture is responsible for a third of Australia's greenhouse gas emissions – a higher proportion than any other OECD country bar New Zealand[72]. Climate change is a serious threat to agriculture, food security and rural communities worldwide, and the food and fibre industries need to come to terms with their responsibility to cut their greenhouse gas emissions.

CSIRO projections for climate change in Australia indicate, on current trends, an increase in average annual temperatures by 0.4-2.0°C by 2030, with further rises of 1.0-6.0°C anticipated by 2070. Australia, its biodiversity, and its people have certainly faced climate shifts before, but nothing like

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[66] International Energy Agency (IEA) (1998) *Energy Balances of OECD Countries*, 1995-96, OECD.
[67] Karoly, D., J. Risbey & A. Reynolds (2003) *Global Warming Contributes to Australia's Worst Drought*, World-Wide Fund for Nature, Australia, Sydney.
[68] Passey (2003), *ibid*..
[69] Doyle, J. (2004) *Drought has dramatic impact on rural jobs*, SA Country Hour Summary March 23rd, 2004, ABC Online, http://www.abc.net.au/rural/sa/stories/s1093618.htm
[70] Corish, P. (2004) *A 21st Century Vision for Modern Australian Agriculture*, Telstra Address by NFF President, Canberra, August 4th.
[71] Passey, R. (2003) *Uncertain Harvest: The predicted impacts of global warming on Australian agriculture*, A Report for the Australian Wind Energy Association and the Climate Action Network Australia, AusWEA & CANA, Melbourne.
[72] AGO, 'Greenhouse and Agriculture', http://www.greenhouse.gov.au/agriculture/index.html

these projected global changes has occurred since the beginning of the current interglacial period[73]. Given the numerous human pressures and impacts on Australian ecosystems, however, rapid climate change probably could not happen at a worse time in history[74].

The biodiversity impacts of abrupt climate change are uncertain, although we can expect at least a similar magnitude and rapidity of biodiversity loss as occurred to the emergence of the planet from the last Ice Age, at which time species loss and ecosystem dysfunction would have been substantial. This and previous climatic shifts, including that at the end of the Pleistocene 1.8 MYA, are known to have led to major shifts in species ranges and marked re-distribution of ecosystems and biomes – all in an environment that was not as fragmented or stressed as it is today, and with little or no pressures from human activities. Habitat fragmentation has confined many species to relatively small areas within their previous ranges, with reduced genetic variability. Globally, then, the loss of wild biodiversity associated with anthropogenic climate change is likely to be severe:

> *For a given ecosystem, functionally diverse communities are more likely to adapt to climate change and climate variability than impoverished ones. In addition, high genetic diversity within species appears to increase their long-term persistence. It must be stressed, however, that the effect of the nature and magnitude of genetic and species diversity on certain ecosystem processes is still poorly known. The ability of ecosystems to either resist or return to their former state following disturbance may also depend on given levels of functional diversity. This can have important implications for the design of activities aimed at mitigating and adapting to climate change. Therefore, conservation of genotypes, species and functional types, along with the reduction of habitat loss, fragmentation and degradation, may promote the long-term persistence of ecosystems and the provision of ecosystem goods and services*[75].

Australia certainly needs to develop adaptive conservation strategies, and it is good to see nationally co-ordinated government action in this regard. However, the absence of an adequate national commitment to restoring environmental flows in rivers like the Murray, to maintaining and expanding the National Reserves System, or to strategically restoring ecological function in degraded landscapes – all measures that would seem to be the essential underpinnings of an adaptive management strategy - is strikingly at odds with the Australian Government's focus on adaptation to climate change.

Australia and the world's first and best defence against the worst climate change scenarios lies in mitigation – progressively and substantially reducing greenhouse gas emissions domestically, and leading the global community in doing likewise. Adaptation to climate change – including good ecosystem management, restoring river health and active habitat restoration – must be combined with serious efforts to reduce Australia's greenhouse signature. The first steps towards a strong and sensible climate change action plan are ratification of the Kyoto Protocol and the 'environmental modernisation' of industry, including farming, via a mix of education and policy drivers. ACF recognises that, in themselves, the greenhouse gas reduction targets set under the Protocol are insufficient to ameliorate the threat of global climate change. Nevertheless, the Protocol is a necessary first step without which further international efforts against climate change will prove extremely difficult.

The Intergovernmental Panel on Climate Change (IPCC) in its Third Assessment Report (2001) states that carbon dioxide levels must drop by 60% to 80% below 1990 levels within the next few decades if

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[73] Haberle, S. (2003) 'Palaeoecological perspectives on climate change and its impact on biodiversity,' In: Howden, M., L. Huges, M. Dunlop & I. Zethoven (Eds) *Climate change impacts on biodiversity in Australia*, Outcomes of a workshop sponsored by the Biological Diversity Advisory Committee, 1-2 October, 2002, Commonwealth of Australia, Canberra, pp43-5

[74] Soulé, M. E. (1992). 'Foreword: The Wrong Time for Climate Change' *in* Peters, R.L., and T. E. Lovejoy, eds. *Global Warming and Biological Diversity*. Yale University Press, New Haven, Conneticut.

[75] Convention on Biological Diversity (2003) *Climate Change and Biodiversity*, Executive Summary of the report on Interlinkages Between Biological Diversity and Climate Change, CBD Technical Series no. 10 [2003] http://www.biodiv.org/programmes/cross-cutting/climate/interlinkages.asp

we are to avert a catastrophic warming of atmospheric temperatures. Legislation recently enacted by Queensland and New South Wales should further help reduce our emissions signature by controlling much land clearing, but further steps are urgently needed.

Recent scientific work on the likely impacts of climate change on the planet's natural environment have highlighted the importance of emissions reduction strategies to limit the damage:

> *Reducing the concentrations of greenhouse gases — and reducing them soon — could minimize [global] warming and hence the number of extinctions. The threat to life on Earth is not just a problem for the future. It is part of the here and now*[76].

ACF believes that it is vital that Australia sets long-term targets for progressively reducing our greenhouse pollution levels because:

- Australia, our ecosystems and our rural industries are highly vulnerable to climate change, and hence minimising climate change is in the national interest;
- A 2°C increase in global average temperatures above pre-industrial levels constitutes an unacceptably high risk to the biosphere, based on best available science[77];
- Major reductions in greenhouse pollution are required in the short and long-term if we are stabilise the global climate;
- Ratifying the Kyoto Protocol, and setting and implementing short and long-term targets places Australia in a position to influence the international community, including developing countries;
- Acting now and setting national targets creates a greater sense of certainty for business, helps avoid costly and disruptive action later, and positions Australia to meet significant emissions reduction commitments in the post-Kyoto period;
- Strong emission reduction targets – backed up by strong regulation, R&D and economic signalling – are both necessary and achievable[78]; and
- Strong and targeted national action to deal with climate change empowers regional communities to make a contribution to both our preventative and adaptive efforts.

The Australian and other governments' attempts to develop an adaptive strategy to climate change are welcome, but are utterly insufficient. The Australian Government's intransigence on this critical issue may well be filtering down the regional level: There appear to be only a few instances where regional or catchment groups have actively sought to incorporate climate change scenarios into their planning[79], or indeed to engage industry in regional mitigation strategies.

Recommendation 29

That, in order to better protect Australian ecosystems and rural communities from dangerous climate change, the Australian Government should:

- **Ratify the Kyoto Protocol;**
- **Set a national target and roadmap to reduce greenhouse pollution by at least 60% below 1990 levels by 2050 with a 20% target by 2020;**
- **Amend the Environmental Protection and Biodiversity Conservation Act to include a greenhouse pollution 'trigger' to allow the Federal Environment Minister to prevent major polluting projects;**

[76] Pounds, J. A. & R. Puschendorf (2004) 'Clouded Futures,' *Nature* 427(8): 107-9

[77] See, for example: Hansen, J. (2003) Can we defuse the global warming time bomb? *Natural Science* [Online] http://pubs.giss.nasa.gov/abstracts/2003/Hansen.html; Hare, W. (2003) *Assessment of Knowledge and Impacts of Climate Change* – Contribution to Specification of Art.2 of the UNFCCC. Special Report prepared for WGBU, Potsdam, Berlin. [Online] http://www.wgbu.de/wgbu_sn2003_ex01.pdf

[78] Saddler, H, Diesendorf, M. & Denniss, R. (2004) *A Clean Energy Future for Australia*, WWF Australia, Sydney. [Online] http://www.wwf.org.au

[79] ACF understands that the Victorian Government is working with its catchment management authorities to develop adaptive strategies to climate change.

- **Ensure adequate signalling to industry to reduce its greenhouse pollution and boost investment in clean energy alternatives, including by introducing a revenue neutral carbon tax and raising the Mandatory Renewable Energy Target to 10% by 2010;**
- **Develop partnership agreements with rural industries to reduce their greenhouse pollution in line with national targets and standards; and**
- **Strengthen regional NRM organisations' capacity to contribute to Australia's mitigation of and adaptation to climate change.**

7. COMMUNITY ENGAGEMENT

7.1 Working with the Landcare Movement

The meteoric rise of Australia's diverse Landcare movement has been an incredible social phenomenon. The development of Landcare has seen the emergence of several thousand local networks of private landholders and others with an interest in more sustainable land and water management – the so-called 'Landcare Ethic.' These community networks are linked regionally, on a state or territory basis, as well as nationally, via small social gatherings, larger conferences, magazines and now the Internet. They are further connected to government officers, environment groups, industries, corporations, scientists and educators. Around forty percent of private land managers are involved in a Landcare group[80], and the evidence suggests that Landcare networks have been instrumental in disseminating NRM information and the uptake of more sustainable land management practices.

While the movement may not have proven capable of turning around Australia's land and water crisis[81] – and should never have been relied upon to do so alone – it has almost certainly raised community awareness significantly, which in turn may have helped to foster programmes like NAP. Landcare represents an impressive pool of social capital that, unfortunately, is being squandered in the transition to regional delivery.

There appears to have been a profound lack of proper programme succession planning, change management and effective communication during the transition to the new NRM programmes, resulting in widespread unease amongst the Landcare community. While interim funding was eventually made available to maintain Landcare field staff, the uncertainty and anxiety created during the changeover period has now been compounded by a sense that the regional NRM processes are largely bypassing Landcare and other community networks. The sense in Landcare circles is that, if this is the case, Landcare has no option but to 'go its own way;' regardless of the directions and priorities of the regional bodies. What is striking is that this view seems to be shared even by many of those Landcarers on regional and catchment boards, and others in the movement, most of whom seem to see the potential in the regional model.

Clearly, local and national Landcare networks are a valuable vehicle for effective NRM planning and delivery. It makes sense to utilise the experience of people in Landcare and other like-minded community groups, while not relying on a voluntary community movement to deliver strategic environmental outcomes in the landscape. ACF believes that, notwithstanding the need to ensure good return on public NRM investments, government should invest in helping to maintain Australian Landcare, and should encourage regional groups to find ways of making the best use of their local Landcare networks.

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[80] Reeve, I. (2001) *Australian Farmers' Attitudes to Rural Environmental Issues: 1991-2001*. Final report to Land and Water Australia. Institute for Rural Futures Report 01/01

[81] When seen from a national vantage point the *strategic* environmental benefits of the Decade of Landcare are patchy, but this should not detract from a great many successful examples of community-driven environmental works at the local level, and environmental leadership nationally.

Much greater attention needs to be given managing the process of community transition to a regional delivery model, including through better communication between governments and regional communities.

Recommendation 30

That the Australian Government undertakes measures to maintain and develop Landcare and other valuable community networks throughout the transition to regional NRM delivery.

Recommendation 31

That the National Landcare Program be more closely articulated with the proposed integrated national natural resource & environmental programme, with a view to strengthening and ensuring cost-effective delivery of NRM through local and national Landcare networks.

7.2 Working with Indigenous Communities

A number of Indigenous communities appear to have chosen to work outside of the mainstream regional process, and have successfully developed strategies for the management of their lands. Regional bodies' engagement with the land's traditional owners is highly variable, and feedback to ACF from Indigenous leaders in the NRM sector suggests that it has been poor for the most part.

There are good examples to be found of understanding and cooperation between Aboriginal and non-Aboriginal communities in tackling NRM challenges. A number of Indigenous groups have taken the opportunity to use the Landcare movement as a vehicle for community empowerment and maintenance of culture and country, yet indigenous involvement in the regional process is often lacking. It seems that regional NRM organisations, as well as agricultural and conservation interests, frequently lack a good working understanding and knowledge of the rights, culture and aspirations of Indigenous Peoples. Many regional organisations seem to lack the skills to successfully communicate and engage Indigenous communities. It has been put to ACF by Indigenous NRM participants that a fear of engagement with Indigenous interests is systemic, and that a misunderstanding of the implications of Native Title, together with a sense that of the unknown associated with Indigenous liaison, are major contributing factors.

Opportunities for dialogue and reconciliation between Indigenous and non-Indigenous Australians seem to have been lost in the regionalisation process. ACF believes that here are several key actions that would help to improve the situation, namely:

- A commitment on the part of governments to improving public understanding of Indigenous Peoples' aspirations for country and their involvement in NRM;
- Supporting Indigenous communities in recognising and asserting their rights to land, community wellbeing and self-determination through NRM, including by looking after country, developing new commercial-environmental ventures, and participation in Landcare;
- Developing learning partnerships between regional bodies and Indigenous interests, and otherwise meeting the training, skills and other resource needs of regional groups with respect to working with Indigenous Peoples in NRM planning and delivery;
- Recognising traditional governance structures and systems within Indigenous communities; and
- Assisting communities to develop case studies of successful engagement and co-operation between Indigenous Australians and other groups in society for sustainability outcomes.

Recommendation 32

That the NRMMC reviews Indigenous communities' role and participation in ecosystem management and NRM generally, with a view to:

- **Strengthening and supporting Indigenous Peoples' rights in the management of land and water ecosystems - on their own or in partnership with the rest of the community;**
- **Improving the broader community's understanding of Indigenous People's aspirations for their country; and**
- **Developing opportunities for sustainable economic self-determination and encouraging people back onto country.**

8. LOCAL GOVERNMENT ENGAGEMENT IN NRM

The role of local municipalities in producing good NRM outcomes is frequently overlooked - a fact that advocates of local government are often at pains to remind other tiers of government. While the assertion that local governments are always 'closest to the people' is debatable, it is difficult to conceive of regional NRM delivery working effectively in the absence of local government support.

8.1 Local Government's NRM Potential

Moreover, local government offers a range of policy tools that can assist sustainable landscape management[82]:

- Land-use planning
- Development approvals
- Public land management
- Infrastructure management
- Financial incentives
- Management agreements
- Revolving funds
- Joint NRM Authorities
- Environmental levies
- Financial management assistance
- Community capacity building and networks
- Direction and leadership

The Ministerial Council's support for local governments on regional bodies, local government involvement in NRM planning and increasing reference to regional objectives in municipal planning are all welcome advances, but fall short of making the most of this tier of government in NRM. According to a recent survey, about half of local councils have a poor grasp of regional NRM issues, and the majority do not consider regional plans in local planning schemes[83].

8.2 Local Government Support for Regional NRM Delivery

To its credit, the Australian Local Government Association (ALGA) successfully lobbied for its inclusion as an observer on the NRMMC, yet in the three-and-a-half years since the inception of the NAP there appears to have been little concerted action to employ local government powers and capacity for sustainable landscape management. The exceptions to this general observation seem to stem largely from the initiative of some regional bodies and local council officers, rather than a

[82] Binning, C.E., Young, M.D. & Cripps, E. (1999) *Beyond Roads, Rates and Rubbish: Opportunities for local government to conserve native vegetation*, National R&D Program on Rehabilitation, Management and Conservation of Remnant Vegetation, Environment Australia, Canberra.

[83] Truss, W., I. MacDonald, and S. Robertson (2004) *$875,000 to engage Queensland local councils in natural resource management*, Joint Media Release, June 1st, 2004.

strategic national push. ALGA itself continues to advocate for greater resourcing of local-level NRM[84], but seems to make less effort to ensure its members play their part in effective delivery of NRM and sustainable land-use planning.

It is promising to see state and territory local government associations making a range of efforts to engage local governments in regional/catchment planning processes, and encouraging their member councils to adopt some NRM-supportive policies and practices. This is being done through the provision of resources, including information, as well as research initiatives, such as the Municipal Association of Victoria's *Integrating Local Land Use Planning & Regional Catchment Planning Project.* The federal Department of Environment and Heritage's new biodiversity 'toolbox' for local governments is another welcome initiative. Altogether, however, local government support for regional NRM delivery is poor.

Local government support for sustainable land use still seems largely contingent on local political will, local resources and initiative, as well as persuasion from and good working relations with regional bodies. Despite ALGA's position on the Ministerial Council, and some measure of information provision, direction, resources and incentives from the national level for proactive NRM are not evident. The potential NRM capacity of local municipalities remains grossly untapped, and the linkages between regional NRM and investment plans appear to be weak for the most part. ACF's consultations with representatives of several regional NRM organisations reveal a high level of frustration with local government involvement (or lack thereof) in the regional planning process is very common. At best, local government support for integrated catchment management and sustainable land use is variable; at worst local government obstinacy and ignorance of the principles of Integrated Catchment Management can make the efforts of regional-catchment planners a waste of time.

ACF does not believe that devolving NRM to the local level will necessarily produce better environmental outcomes. In order to make the regionalisation process effective, however, ACF believes that the Commonwealth and State/Territory Governments take the lead in working with local government organisations for far more effective coordination and cooperation with regional NRM planning and delivery.

Recommendation 33

That CoAG agrees to a schedule for reform of local government legislation, such that all local municipalities are obliged to align their decision-making with the principles and priorities of ecosystem management.

Recommendation 34

That appropriately accredited regional NRM bodies be granted referral powers on local government land-use planning decisions, and be resourced appropriately to ensure that local government decisions match regional NRM standards.

Recommendation 35

That the NRMMC agrees to trial a number of combined municipal-catchment planning schemes, and the outcomes be used to support the development of a schedule for enabling legislation in each jurisdiction.

[84] ALGA Environment Policy and Resources, *Natural Resource Management*, http://www.alga.asn.au/policy/environment/index.php?id=62d50c3b6308807d081f73b490028af2

Recommendation 36

That the Australian Government agrees to establish a pool of special grants, to be made available to local governments based on their willingness to use the considerable powers available to them promote effective ecosystem management.

9. DEVELOPMENT OF SUSTAINABLE FARMING SYSTEMS AND LAND USES

9.1 Australian Agriculture and Biodiversity Conservation

The impacts of unsustainable farming systems are often felt well beyond the boundary fence. Ecologically sustainable landscape management means much more than simply fine-tuning agriculture. In some cases, farming as we have known may no longer be a viable or sustainable option for landholders, but our modified land and water systems will still need to be managed by someone. It makes sense to research and develop alternative commercial land-use systems that compatible with ecosystem management goals.

ACF believes that the following principles should guide the development of ecologically sustainable farming systems in the Australian context[85]:

- A mixture of regulation, education, incentives packages and other tools should prevent further native habitat destruction and degradation, including the continent's last wild rivers and largely intact ecosystems in the tropical north.
- Native habitat values & ecological connectivity should be strategically restored to provide the best cost-benefit outcome given that our landscapes face a largely uncertain future.
- Agricultural pollution, including effluent, agri-chemical run-off/drift and the spread of weeds and pests, must be avoided or at least minimised to avoid deleterious impacts on human populations and ecological communities.
- Soil & water management should continue to be made more efficient through a variety of conservation measures, as well as attention to the capacity of the land type to support particular developments in the first instance.
- Farming systems and land-uses that mimic natural systems, especially the functional and structural properties that characterise much of Australia's native vegetation.
- Community development & income generation/diversification initiatives based on biodiversity conservation and the valuation of ecosystem services should be advanced across the landscape.

The conservation of Australia's biodiversity – a goal of the NAP/NHT2 - rests in large part on whether we can protect and regenerate habitat values and ecosystem services in production landscapes. Australian agriculture itself is reliant on the services – such as nutrient cycling, erosion control, natural pest controls and groundwater management – provided by natural systems. The CSIRO estimates that the average annual dollar contribution of Australia's biodiversity to agriculture is about $1,327 billion[86].

State governments are, to a greater or lesser extent, putting some effort into developing and promoting ecologically sustainable farming systems, environmental management systems and best environmental management practices, as well as alternative land-uses that may provide a financial return together with environmental benefits. However, it is not clear from government communications to what degree this work is supported by the NAP/NHT2.

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[85] Adapted from McNeely, J. & Scherr, S. (2003) *Ecoagriculture: Strategies to Feed the World and Save Wild Biodiversity*, Island Press, Washington DC.
[86] Quoted by Crass, K and Jones, Australian Museum, http://www.austmus.gov.au/biodiversity/factsheets/fs_ecosy.html

There has certainly been an upswing in R&D of new perennial land-uses to help combat the threat of dryland salinity commensurate with the development of the NAP. The CRC for Plant-Based Management of Dryland Salinity is steadily taking on a leadership role in this regard. The fate of a great many biodiversity assets, both on and off-reserve, in many parts of the country depends on the development of profitable option for deep-rooted perennial crops and pastures, as well as conservation plantings.

Increasingly, the Australian Government is focusing on 'sustainable production' (taken to mean more resource-efficient production) apparently premised on the belief that private land managers find 'biodiversity' a difficult concept to work with. ACF agrees that improving resource-efficiency is vital to sustaining Australia's food and fibre production, and reducing agriculture's impact on natural systems. Yet it seems that the Department of Agriculture, Forestry and Fisheries devotes little effort to developing the practical tools that might boost land managers' conservation capacity[87]; this is seen as the environment department's role. By contrast, some state primary industry departments, notably in Victoria, have begun to see that they have an active role to play in biodiversity conservation on farms, and have started to work jointly with conservation agencies. (It is, however, likely that this initiative would have come about without NAP/NHT2.)

In sum, it is very difficult to see how and how much the NAP/NHT2 are developing and promoting biodiversity conservation in agricultural industries in anything other than an opportunistic way, and therefore to what extent they will reach their biodiversity goals. The programmes' impact on the national effort to research, develop and promote farming systems that protect, enhance and restore native biodiversity appears to be mixed at best.

Recommendation 37

That the NRMMC commits to establishing a network of policy officers within all governments' lead agencies to identify and negotiate required changes in public programmes and policy to promote the conservation of biodiversity across the primary industries.

9.2 Environmental Management Systems in Agriculture

It is apparently in an effort to substantiate Australian farmers' improving environmental management skills - especially in the global trade arena - that the State and Australian Governments have launched a national campaign to promote the uptake of environmental management systems (EMS) in the rural sector as an NRM strategy. This and a programme of EMS 'regional pilots' are welcome initiatives, but it remains to be seen to what extent they will deliver meaningful progress towards a sustainable Australia, and to what extent governments and industry are prepared to lead with a suite of complementary policies to get the best from EMS – for the environment, farmers and the nation as a whole.

Despite a note of caution in the *National Strategy for EMS in Australian Agriculture* that EMS is no 'silver bullet,' in terms of either environmental benefits or market access and penetration, it seems that there is a widespread expectation on the part of both government and industry that EMS will go a long way to substantiating our 'clean and green' image.

Alone, an EMS approach is no guarantee of improved environmental performance[88]. EMS certification itself provides absolutely no information to enable consumers or society-at-large to differentiate

[87] The National Landcare Program, which is beyond the scope of this study, does fund producer-initiated biodiversity conservation work, and has without doubt contributed to better conservation on farms and community networks to promote conservation activities. The NLP is, however, reliant on voluntarism, with all the strengths and weaknesses such reliance implies, and is increasingly being steered towards 'sustainable production' – the meaning of which remains unclear.

[88] Anderson, Sarah, Kim Lowe, Kathy Preece and Alan Crouch (2001). *Incorporating biodiversity into environmental management systems for Victorian agriculture. A discussion paper on developing a methodology for linking performance*

between the environmental integrity of various farm products. EMS will not deliver change on anywhere near the scale that is needed if we are to manage the landscape crisis. Clearly, EMS is a tool for managing information and risks, and for communicating progress in environmental management, and is best suited to these tasks.

There is a high risk that a failure to demonstrate real environmental benefits from the use of EMS in agriculture will trigger a crisis of faith on the part of farmers and consumers. Farmers who spend their time and money to develop an EMS believing it will ensure access to markets and ensure community approval of their enterprise, are likely to find that a paper trail is not enough and may be put off doing anything more to integrate conservation and production. Consumers and the wider community, already sceptical of governments' and business' environmental claims, with minimal understanding of what an EMS and what it does, and who are expecting an 'environmental' tag to represent something of substance, will be sorely disappointed should it become clear that a particular EMS scheme is not delivering good environmental outcomes.

Understandably, most private land manager actions focus on natural resource management issues of direct and obvious relevance to production within the context of a traditional business cycle, such as conserving soil moisture or stock shelter. Most initiatives are dependent on the good will and ecological literacy of the producer, as well as their access to sound environmental information or the odd government grant. Seldom do these actions go 'beyond the farm gate' to address catchment-scale challenges; and seldom do catchment 'big picture' plans translate to management or land use changes in the 'back paddock.'

ACF regards the use of EMS as a public policy instrument to drive better environmental performance in agriculture with cautious optimism. EMS can make a difference to the natural environment of a farm property, and it can be a good entry point into a catchment-linked outcomes-based approach, but it greatly depends on in whose hands it is, their capacity to add value to a simple process tool, the resource savailable – time, money and information – as well as a favourable policy environment. EMS may aid in the kind of positive broadscale change needed to turn around landscape decline (e.g. salinity), but will not effect that change.

Governments need to encourage the development of environmental performance standards in agriculture at least as much as they do environmental management systems. Financial support for the development of environmental assurance schemes should be weighted to those enterprises and industry groups that can demonstrate real and significant improvements in environmental performance, not just management processes. Governments should emphasise and encourage the development of farming and agro-forestry systems that protect, enhance and restore habitat values, on and off-farm.

Recommendation 38

That the NRMMC establishes a national ecologically sustainable agriculture programme to promote interdisciplinary R&D and generate practical tools to strengthen biodiversity conservation across Australia's primary industries.

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standards and management systems. Published by the Parks, Flora and Fauna Division of the State of Victoria, Department of Natural Resources and Environment. Available at www.dse.vic.gov.au/Conservation and Environment.

Recommendation 39

That CoAG commits to a national target for more sustainable agriculture & land management, namely that 20% of enterprises within each region should, by 2010, have put in place credible outcomes-based integrated environmental management plans. Enterprise plans should be linked to regional standards and targets, with performance audited by independent third parties.

Recommendation 40

That the Australian Government develops a comprehensive duty-of-care, reward and financial assistance framework to encourage industry uptake of outcomes-based environmental assurance schemes.

10. PRIVATE SECTOR INVESTMENT & MARKET-BASED INSTRUMENTS FOR NRM

The NRM practices of private landholders are of fundamental importance to sustainable development in Australia. With more than 60% of the continent managed primarily for production, it is imperative that governments develop catalysts for large-scale private sector investment in enterprises that meet both commerciality and sustainability criteria, and find more efficient ways to engage private landholders in environmental repair.

In short, the national policy and institutional environment is badly in need of reform to enable firms, communities and landholders to see the financial benefit in doing the right thing by the natural environment.

10.1 The Market-Based Instruments Programme

Unlike other areas of public policy, such as health and education, precious little effort has been made mobilising and motivating the private sector to deliver environmental benefits. The absence of an institutional framework for leveraging large-scale private investment in commercially viable and environmentally beneficial ventures remains a gaping hole in the national NRM programmes.

Although some NAP/NHT2 projects have undoubtedly resulted in business investment in NRM-related activities, and a few regional communities have been successful in raising philanthropic funds for environmental works, these have been opportunistic rather than strategic, and generally small-scale. Furthermore, the vast bulk of private investment in rural Australia is aimed at more or less traditional agricultural and infrastructure developments. Arguably, most of these have at least as many, if not more, environmental costs as benefits, and substantially fail to address problems like dryland salinity, river system decline and biodiversity loss. Most public investments in agriculture give little more than lip-service to sustainability.

The $10M Market-Based Instruments (MBI) Pilots Program established under the NAP is a good, albeit tentative first step towards understanding and developing the role of such policy tools in NRM. ACF applauds the NRMMC decision to trial a range of different MBIs, but believes that, at least along two particular lines of private sector engagement, there are good arguments to move beyond the trial stage to the next step.

10.2 Markets for Ecosystem Services

There is scope to establish a relatively small, but highly efficient national scheme to motivate private land managers to carry out environmental repair works at minimal cost to the public. Victoria's *Bush Tender Trial* has demonstrated that it is possible to create reasonably efficient markets for ecosystem

services that enable governments to purchase conservation management outcomes from private landholders in a highly cost-effective way. Results of this trial suggest that reasonably secure conservation outcomes can be sourced for around *one-seventh* the cost of a traditional government grant[89]. The core appeal to private landholders from such a scheme lies in the freedom granted them to make a competitive bid for their services. It is also a way of enabling the community to pay private landholders for 'beyond compliance' environmental benefits in a highly efficient way. The Victorian scheme has been made more effective by the use of biodiversity metrics that give landholders and conservation scientists a common currency, and underscores the importance of sound bioregional mapping to enable strategic decision-making in the landscape.

WWF-Australia is now trialling a similar scheme in Western Australia, demonstrating the potential for the community sector to take up proven MBIs, and work with regional communities and private landholders directly – cutting government's administration costs and building community capacity. Such schemes have the added and important social and scientific benefit of providing an incentive to private landholders to identify and reveal the biodiversity assets on their property.

Based on the costs of Victorian trial, ACF believes that a national environmental tender programme could see cost-effective long-term conservation management agreements being signed on several thousand properties at a cost of around $20-30M*pa*. The programme should have scope for experimentation with different designs, but ensure the best long-term environmental value for money by promoting private landholder environmental performance commitments above and beyond legal compliance.

Recommendation 41

That the Australian Government funds a national 'Bush Tender' style programme to enable accredited groups to create markets for the provision of ecosystem services on private land.

10.3 Leveraging Private Investment in Sustainable Land Use

More broadly, there is an urgent need for a national policy framework that drives large-scale private investment in a wide variety of sustainable and profitable NRM ventures. Such a framework should aim to take account of the three broad layers in the investment chain: capital, land, and technical expertise. It could do so by providing a mixture of measures concentrating on closing information gaps, funding high-priority activities, and providing incentives for commercial investments that deliver environmental gains. It should serve to build the capacity of private land managers and investors to explore and identify new commercial opportunities that offer multiple environmental benefits. Governments should provide incentives for private land managers to disclose detailed information about environmental conditions on their property and their plans for managing emerging threats.

Ideally, the framework should employ policy instruments and investment vehicles that governments and investors are familiar with and have been tried and tested in other policy areas. Such instruments and vehicles have already been put to good use augmenting public investments in the business innovation, health care, built infrastructure and other spheres.

To be strategic, the framework would have to ensure that only those private ventures investments that were aligned with national priorities, and regional NRM targets and standards would receive concessions and incentives. In this way only ventures that successfully aligned private interests with the public good would receive public assistance. However, as currently sub-commercial industries -

[89] Gary Stoneham, *Personal Communication*. See also: http://www.dse.vic.gov.au/dse/nrence.nsf/LinkView/15F9D8C40FE51BE64A256A72007E12DC8062D358172E420C4A256DEA0012F71C

such as low-rainfall agroforestry – grew to an economy-of-scale, they would eventually become self-sustaining, and hence would attract still further investment with environmental benefits.

Importantly, these schemes would add a powerful new tool to the kit of regional communities, and enable NRM groups to steer private land management towards their targets for salinity mitigation, biodiversity conservation, water quality improvement and other crucial aspects of ecosystem management.

One of the greatest obstacles to this kind of investment is ignorance, and there is an important role here for experienced community groups to act as brokers between potential investors with limited knowledge and understanding of environmental issues and project ideas. Greening Australia's proposal for a 'Green Bank' to attract private sector funds for investment in revegetation ventures with multiple environmental and economic benefits is a good example.

The Allen Consulting Group[90] has conservatively estimated that such a policy framework could leverage around $3.50 for every one taxpayer-dollar. Considerably greater value for money could leveraged with the added impetus for industry innovation and new employment opportunities in rural and regional Australia. Most of the public investment in this new framework would be in tax revenue foregone.

Recommendation 42

That CoAG establishes a national policy package to leverage large-scale private sector investment in new, more sustainable and profitable land-uses and farming systems, specifically by:

- **The establishment of statutory investment companies as tax-preferred investment vehicles to raise access to private capital for accredited commercial-environmental ventures;**
- **An integrated package of taxation offsets and concessions tailored to make environmental investments more attractive, with the aim of revenue neutrality;**
- **Nationally agreed accreditation criteria of plans for commercial-environmental ventures to ensure consistency with national and regional NRM priorities;**
- **Seed funding to be made available for innovative commercial ventures that yield verifiable environmental benefits;**
- **An Environmental Enterprise Fund to administer these programmes and concessions.**

11. RESEARCH & DEVELOPMENT

11.1 Directions in R&D for Sustainable NRM

It seems reasonable to conclude that the NAP/NHT2 have generated new and much need research and development towards the sustainable management of Australia's natural resources and environment. However, several important R&D initiatives – such as the Reef and Rainforest Co-operative Research Centres, and the National Dryland Salinity Program - have had their federal government funding discontinued, seemingly at odds with the NRM objectives of the NAP/NHT2.

A higher and more sustained level of public investment in scientific research and technological development is needed to underpin a rapid transition to land-uses and farming systems that conserve native biodiversity, help restore landscape health and sustain human needs in Australia. Governments need to maintain a strong interest in public interest research to better understand and quantify the processes and effects of degrading trends, like salinisation and climate change, and to ensure that

[90] Allen Consulting Group (2001) *Repairing the Country: Leveraging Private Investment*, ACG [Online] http://www.acfonline.org.au/docs/publications/rpt0006.pdf

national and regional NRM policy, planning and investments are consistent with the best available science and based on the precautionary principle.

Public investments in salinity management, for example, are unlikely to achieve more than small-scale impacts unless backed up by R&D for new tools, including new profitable land uses. Likewise, whilst Australian governments are investing in world-class science for better NRM, they are frequently inconsistent about following up that science with concerted and timely action, e.g. investing to restore adequate environmental flows to the River Murray, or ensuring species recovery plans are well-funded.

The closure of the Australian Government's chief integrative body for salinity management R&D – the National Dryland Salinity Program (NDSP) – leaves a hole in the Australian Government's NRM programmes. The country is now left without an institution with a proven track record to minimise competition between agencies and to effect good collaborative work, tailored to meet the needs of different users at different scales. As yet, there is no indication of what, if any, institution will replace the NDSP. ACF's preference is for a national body, with a focus on integrated and ecologically sustainable landscape management, to take on this role. The role might also be shared between suitable organisations, such as ACF's proposed Ecosystem Management Unit, together with the National Land and Water Resources Audit and Land and Water Australia.

If regional NRM delivery is to become effective, it must be supported by a strong research platform, with the development of information systems tailored to the knowledge needs of different ecosystem managers. Crucially, if the plans and investment decisions of regional NRM organisations are to prove their worth on the ground, then ways and means of linking the decisions of individual private land mangers to landscape-level priorities have to be devised, and applied in such a way as to maximise adoption[91].

Recommendation 43

That the Australian Government dedicates and funds a new or appropriate existing agency to co-ordinate public interest R&D for effective ecosystem management. This should include a strong focus on informing the knowledge needs of regional NRM planning and delivery, and linking property-scale management to landscape-scale environmental outcomes.

11.2 The National Land & Water Resources Audit

The National Land and Water Resources Audit, originally funded under NHT1, and now housed in the federal Department of Agriculture, Forestry and Fisheries, has proven to be an excellent investment in sustainable NRM. The various national assessment documents (on salinity, water, terrestrial biodiversity, etc.) produced by the Audit have provided a much needed impetus to national policy development and delivery.

These products, together with the on-line National Land and Water Atlas, constitute the backbone of national and regional NRM planning and investment decisions. The Audit's work sets the benchmark of land and water condition for future state of the environment reporting, and by which to judge the success or failure of NRM programmes.

The Audit's work to date has been performed independently of jurisdictional or political bias, has incorporated the research work of some of the country's leading research agencies and scientists in the field, and has spurred further important work in areas like salinity hazard mapping and water quality assessment, and in the development of consistent environmental assessment methodologies.

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[91] Watts, C. (2003) *Farms to Landscapes*, The Report of a Seminar Exploring the Opportunities for Linking Farm Practices to Landscape Outcomes, Hosted by the ACF-Southcorp Alliance at the 60L Green Building, Carlton, Victoria, February 25th.

ACF believes that the Audit should be funded its work indefinitely, as an independent body with the capacity to carry out its own research work as needed, and to inform regular state of the environment reporting. Importantly, the Audit will need to prepare a second round of land and water assessments to compare with the first, and hence ascertain the degree to which NAP/NHT2 have made a difference to the condition of Australia's natural resources and environment. It would be best if the Audit were not tied to the federal primary industries, or indeed any government department, so as to avoid bias or at least the perception of bias.

The Audit's future work should be scrutinised and informed by a community advisory committee, to ensure that it:

- Collects and analyses relevant natural resources, environmental and socio-economic data and information on an on-going basis;
- Establishes a clearinghouse of easily accessible and free information tailored to meet the NRM needs of different communities;
- Determines gaps in the NRM knowledge base and fund such research as is required; and
- Informs regular State of the Environment reporting

Recommendation 44

That the Australian Government establishes the National Land & Water Resources Audit as an independent statutory authority with funding to improve Australian NRM information systems on an on-going basis, and to contribute to regular state of the environment reporting.

11.3 Institutional and Policy Learning

In the absence of mechanisms for institutional and policy learning, Australia is perennially re-inventing the policy wheel and, just as importantly, we are unable to gauge the real success of our policy prescriptions. Work by Land and Water Australia's Social and Institutional Research Program[92] is particularly important in this regard, yet it is unclear to what extent lead agency policy makers and politicians are learning from past and indeed current experiences:

> *[T]here have been very few unambiguous successes in reversing adverse environmental trends… mixed results are to be expected. What should not, however, be tolerated is the failure to learn from these experiences to increase Australia's institutional capacity to deal with its institutional problems and subsequently help build an ecologically sustainable society. This is largely what has happened… It is very important to keep a sharp focus at all times on the ultimate test of any policy initiative – whether or not it has brought about a reversal of an adverse environmental trend. Yet these are not the only successes that we can learn from. We are not starting from scratch. Building on successes on any kind should remain a kernel of future environmental policy*[93].

It is probably fair to say that Australia is learning how to do NRM 'on the job,' and this is especially true in this transition period to a new regional model of environmental and natural resource management. In all likelihood, we will still be learning ten or twenty years from now, although we can legitimately expect governments to be purposeful about learning from our experiences and actions today. It would be prudent, therefore, to imbed public policy researchers in the 'field' at all levels, and in as wide a selection of jurisdictions as possible, to observe and analyse the NAP/NHT2 in action at all levels. There is an opportunity to study the development of NRM through the NAP/NHT2, to facilitate improved policy design and delivery.

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[92] Land and Water Australia is the only non-commodity based or funded public R&D corporations, and as such is free of the commercial bias that encumbers many other R&D bodies. LWA's role in generating research products that inform public good outcomes is irreplaceable. It is telling of government priorities, however, that LWA's funding is consistently lower than its commodity-based cousins – presumably because it seldom produces material of direct commercial benefit.

[93] Yencken & Wilkinson (2000) *Op cit.* pp314-6

Recommendation 45

That the Australian Government commit to improving and institutionalising policy learning in NRM by:

- **Encouraging an ongoing, open and broadly-based discourse;**
- **A commitment to long-term ecological monitoring, and concerted data collection and analysis to underpin adaptive management; and**
- **A critical and independent assessment of current institutional arrangements in government agencies.**

12. CONCLUSIONS

Despite an initial show of national leadership, and some notable albeit minimal reforms, together with a large dose of rhetoric[94], governments collectively, and the Australian Government in particular, are yet to make many of the environmental in-roads needed to drive the ecologically sustainable management of Australia's rural landscapes.

While a welcome initiative, Australia's flagship NRM programmes – the NAP and NHT2 - are not properly equipped to tackle the challenge of landscape decline without a major refit and a lot more horsepower. In the three and a half years since the NAP commenced, there have been some welcome environmental advances and outcomes. Overwhelmingly, however, progress has been slow and piecemeal, and the major sustainability challenges facing the future of our rural landscapes remain unresolved:

- **Communities are still being asked to do too much with too little:** More than ever, regional communities are being relied on to deliver environmental outcomes, often without clear guidance on their roles and responsibilities, and without properly equipping them with the tools to do the job - especially in the field of nature conservation. The goodwill of the Landcare movement is apparently being squandered in the rush to regional NRM delivery. Regional NRM delivery holds promise for better ecosystem management in many parts of Australia. Regionalisation of NRM is not a panacea to Australia's NRM problems, and it will only prove its real worth with a commitment to ensuring the foundations of effective ecosystem management.

- **Government action to prevent landscape decline is still weak:** The fundamental reasons for the loss our natural heritage and resources – greenhouse pollution, stressed rivers, the spread of salinity, pests and weeds, and poor bushland protection – are still not being dealt with. In fact, in some respects Australia is going backwards, with subsidies to heavy polluters, new developments threatening northern Australia, and only minimal measures to restore our rivers to health. Australia's landscape knowledge base has steadily improved in recent years. In some cases – such as the Murray River system - the threshold management actions that would prevent more irreversible loss are well established. Even so, government commitments to sustainable NRM are frequently lagging behind the best available science.

- **Investment is still unrealistically low:** Current NAP and NHT2 funding is only about 0.1% of the federal budget which is far from enough to address more than a small fraction Australia's environmental needs. There has been little effort to tap the potential of the private sector to make a big difference to rural communities.

- **Investment is still not strategic enough:** Crucially, it is not at all clear that we are wisely investing what limited funds are available to get the best environmental outcomes. Nationally,

[94] Australian Government (2004) *Giving our land a hand*, Commonwealth of Australia, Canberra.

there are only a few timebound targets for environmental progress, and no way of ensuring that progress.

- **National leadership is still largely absent:** The federal government is still not putting its considerable environmental powers to work to ensure that the nation as a whole makes real progress.

Some of the policy lessons of the past have been learnt and are embodied in the twin national NRM flagships, but serious flaws remain and it is not at all clear that Australia's rural landscapes are on track to sustainability as a result of the NAP/NHT2.

The sad story is that much of Australia's landscape is in bad shape and managing it back to a better state of health is not easy. The sorts of big catchment-scale changes that are needed to overcome problems like spreading salinity, stressed river systems and wildlife habitat decline won't happen overnight. The complexities and uncertainties of landscape management only underscore the need for ample resourcing, good policy design and delivery, and strong national leadership to guide, support and enable all sectors of society to make a difference.

ACF welcomes discussion and debate on the issues, problems and proposed solutions outlined in this paper.

APPENDICES

Appendix I: Pre-Draft Discussion Paper Questionnaire

The following questions were put to a range of different people involved in NRM around Australia from late 2003 to mid 2004. Responses to these and similar questions in telephone and in-person interviews were used to inform the drafting of the discussion paper. This was not intended to be quantitative survey, and ACF acknowledges the limitations inherent in such an approach.

- Briefly describe your engagement with the NAP and/or NHT so far. What is your general impression of the programme(s)? Has engagement been easy or difficult or some mixture of these?

- To what extent do the NAP and NHT ensure effective delivery of integrated NRM and achieve better environmental outcomes through the regional approach?

- To what extent do the regional bodies have the capacity (ie. money, knowledge, information, skills and information systems) to undertake effective integrated environmental and NRM planning and delivery? What else could be done to improve their capacity?

- What are the barriers to getting the best environmental and NRM outcomes from the regional delivery model? How effective have the Commonwealth, States & Territories been in overcoming these?

- What are the barriers to getting the best environmental and NRM outcomes from the regional delivery model? How effective have the Commonwealth, States & Territories been in overcoming these?

- To what extent is the process of accreditation of integrated regional NRM planning and investments adequate and accountable? How could it be improved?

- How effective is the process for setting regional targets following the *National Framework for Natural Resource Management Standards and Targets?* To what extent will the Framework result in targets that are adequate, time bound, measurable, achievable and nationally consistent?

- Have the NAP and NHT been effective in identifying and prioritising biodiversity values? If not, why not, and how could this be improved?

- How likely is it that the integrated regional delivery model under the NAP and NHT will lead to better biodiversity conservation outcomes? How can this be improved?

- How effective have the NAP and NHT been in augmenting existing biodiversity conservation programmes?

- How effective have the NAP and NHT been (or are likely to be) in promoting the development and uptake of ecologically sustainable land uses and farming systems? How could this be improved?

- Are the NAP and NHT an adequate response to the major degrading trends (eg. dryland salinity, biodiversity loss, pests and weeds, etc.) evident in Australia's farming landscapes? Why or why not?

- How effective and timely has the process of bilateral negotiations and agreements between the Commonwealth and State/Territory Governments been? What alternatives (if any) to bilateral agreements would prove more effective?

- Have the States and Territories refrained, or been successfully prevented by Commonwealth efforts, from shifting the cost of pre-existing environmental and NRM programmes to NAP and NHT programme funding? Is this an area for improvement? If so, how?

- To what extent have the States and Territories undertaken policy and institutional reforms that augment, complement or at least are compliant with the NAP and NHT programmes? Are there any significant examples of current policies that negate the goals of the NAP and NHT programmes?

- Have the NAP and NHT programmes been integrated effectively and efficiently with each other and with other Commonwealth environmental and NRM programmes (eg. greenhouse)? Would a single national NRM programme be better? Why or why not?

- To what extent has the *National Framework for Natural Resource Management Standards and Targets* been effective in achieving the goals of the NAP and NHT programmes of improved NRM and environmental outcomes? How can the Framework be improved (eg. Is it sufficient for the Framework to only set down 'matters for targets' or should it more prescriptive and/or set binding national targets?)?

- What are the key national governance and institutional reforms (eg. establishing a national catchment management authority?), if any, needed to ensure delivery of optimal environmental and natural resource management?

- Have the NAP and NHT generated sufficient R&D activity to enable them to meet their objectives? Is their adequate investment in R&D? Is current R&D focused on the right areas? If not, how should R&D be focused?

- Is NAP and NHT-related R&D engaging and reaching the relevant stakeholders? How can this be improved?

- To what extent have the NAP and NHT progressed and developed adaptive management? If necessary, how can this be improved?

- To what extent do the NAP and NHT currently rely on voluntarism? Is this an appropriate level of reliance? What is needed to better support volunteers working in environmental and natural resource management?

- To what extent have the NAP and NHT taken into account the projected changes in rural and regional demographics that may affect environmental and natural resource management? How important is this and how can it be improved?

- How have the regional delivery arrangements for NAP and NHT affected the social capital built up by previous programmes (eg. Landcare groups, facilitators and co-ordinators)? How important is this social capital? How can it best be maintained and invested?

- Do the NAP and NHT sufficiently engage the private sector to deliver publicly beneficial environmental and NRM outcomes? How important is this?

- What are the barriers to greater private sector investment in more sustainable environmental and natural resource management? Have governments made sufficient efforts or in-roads towards overcoming these barriers through the NAP and NHT? How should they?

- Is the current investment in NAP and NHT by the Commonwealth, States and Territories adequate for achieving the programmes' environmental and NRM goals?

- To what extent are NAP and NHT programme investments cost-effective and strategic? Are accountability mechanisms adequate? How can the administration of investments be improved?

- Is the *National Natural Resource Management Monitoring and Evaluation Framework* and its adaptation to regional planning and delivery of NAP and NHT programmes adequate? How can this be improved?

- To what degree and in what ways do the NAP and NHT programmes constitute a show of leadership by the Commonwealth and/or States and Territories? How important is this? What would be a good show of leadership?

- To what extent have lessons learnt from the first phase of the NHT (as well as other earlier government programmes) been incorporated into the Commonwealth's current environmental and NRM programmes? How can lessons learnt to date be applied to the ongoing development of Commonwealth environmental and NRM policy?

- Are there any points or questions - not covered in this questionnaire - which you feel ACF ought to address in its review of the NAP and NHT? If so, what are they?

Appendix II: Principles of Decision Theory and Adaptive Management

The basic elements of decision theory and adaptive management[95] that should be institutionalised into investment and management decisions for NRM at all levels are:

1. Evaluation of the ecological, economic and socio-cultural values of the system (inc. ecosystem services and collateral values);
2. Description of the nature and magnitude of the risk(s) to the system;
3. Specification of the management objective and indicators of performance;
4. Listing of all management options;
5. Specification of the system properties and condition;
6. Development of a conceptual model of the dynamics of the system under management;
7. Specification of constraints to the management options;
8. Acknowledgment of unknowns and uncertainties;
9. Development of best-best/no-regrets solutions to the problem(s);
10. Management of the system with a plan for learning from the consequences of management actions; and
11. Evaluation of the results of management and use of the information so generated to refine and guide future decisions.

Appendix III: The Ecosystem Approach and the Convention on Biological Diversity[96]

The ecosystem approach is an integrated management strategy applying to land, water, and living resources, which regulates preservation and sustainable utilisation in an equitable manner. The approach is to be put into action through practical activities[97] at the national level, focusing on those levels of biological organisation at which the most important structures, processes, functions and relations between organisms and their environment are to be found. The ecosystem approach acknowledges that humankind, with all its cultural diversity, is an integral part of ecosystems (Recommendation SBSTTA, UNEP/ CBD/SBSTTA/5/L.11, 3. Feb. 2000, para. 1 and 2 Annexe).

Principles of the ecosystem-approach

The ecosystem approach is based upon twelve principles, which facilitate decision-making on issues concerning biological diversity, and related sectors and branches of the economy. The principles are interrelated, which means that all have to be equally considered, balanced, and applied to NRM-related decisions. In their entirety, the principles help to structure decision-making processes, provide a basic rationale, and help ensure that all factors and stakeholders that are relevant to the ecosystem are duly considered.

The *twelve principles* were formally adopted at the fifth Conference of the Parties to the CBD in May 2000 in Nairobi, along with five operational guidelines. They read:

1. The objectives of management of land, water and living resources are a matter of societal choices.

2. Management should be decentralised to the lowest *appropriate*[98] level.

3. Ecosystem managers should consider the effects (actual or potential) of their activities on adjacent and other ecosystems.

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[95] After Possingham, H. (2001) *The Business of Biodiversity: Applying decision theory principles to nature conservation*, ACF Tela Paper, jointly sponsored by the Australian Conservation Foundation & the Earthwatch Institute, http://www.acfonline.org.au/docs/publications/tp009.pdf

[96] Transcribed from http://www.bmz.de/en/media/concepts/sustainable_development_of_forests/053.html

[97] Further information can be obtained from www.biodiv.org

[98] Author's emphasis added.

4. Recognising potential gains from management, there is usually a need to understand and manage the ecosystem in an economic context. Any such ecosystem-management programme should:
    i. Reduce those market distortions that adversely affect biological diversity;
    ii. Align incentives to promote biodiversity conservation and sustainable use; and
    iii. Internalise costs and benefits in the given ecosystem to the extent feasible.

5. Conservation of ecosystem structure and functioning, in order to maintain ecosystem services, should be a priority target of the ecosystem approach.

6. Ecosystems must be managed within the limits of their functioning.

7. The ecosystem approach should be undertaken at the appropriate spatial and temporal scales.

8. Recognising the varying temporal scales and lag-effects that characterise ecosystem processes, objectives for ecosystem management should be set for the long term.

9. Management must recognise the change is inevitable.

10. *The ecosystem approach should seek the appropriate balance between, and integration of, conservation and use of biological diversity*[99].

11. The ecosystem approach should consider all forms of relevant information, including scientific and indigenous and local knowledge, innovations and practices.

12. The ecosystem approach should involve all relevant sectors of society and scientific disciplines.

13. The five operational guidelines are as follows:
    i. Focus on the functional relationships and processes within ecosystems.
    ii. Enhance benefit-sharing.
    iii. Use adaptive management practices.
    iv. Carry out management actions at the scale appropriate for the issue being addressed, with decentralisation to lowest level, *as appropriate*[100].
    v. Ensure inter-sectoral co-operation.

CBD/COP-5/Decision 6 (excerpt):

> *"The Conference of the Parties … Calls upon Parties, other Governments, and international organizations to apply, as appropriate, the ecosystem approach, giving consideration to the principles and guidance contained in the annex to the present decision, and to* ***develop practical expressions of the approach for national policies and legislation and for appropriate implementation activities****, with adaptation to local, national, and, as appropriate, regional conditions, in particular in the context of activities developed within the thematic areas of the Convention;*
>
> *"Invites Parties, other Governments and relevant bodies to* ***identify case-studies and implement pilot projects****, and to organize, as appropriate, regional, national and local workshops, and consultations aiming to enhance awareness, share experiences, including through the clearing-house mechanism, and strengthen regional, national and local capacities on the ecosystem approach."*

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[99] Author's emphasis added.
[100] Author's emphasis added.