



Evaluation Report on the Decade of Landcare Plan – National Overview

**Standing Committee
on Agriculture and
Resource Management**

**Agriculture and
Resource Management
Council of Australia
and New Zealand**



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Evaluation Report on the Decade of Landcare Plan: National Overview

Landcare Plan

Evaluation Report on the Decade of Landcare Plan - National Overview

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Glossary and abbreviations

ABARE	Australian Bureau of Agricultural and Resource Economics
ACLEP	Australian Collaborative Land Evaluation Program
ANCA	Australian Nature Conservation Agency
ANZECC	Australian and New Zealand Environment and Conservation Council
ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand
Catchment	As well as water courses and the riparian zone, all land and vegetation in a catchment are included in the NLP definition.
COAG	Council of Australian Governments
CRC	Cooperative Research Centre
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CYPLUS	Cape York Peninsula Land Use Study
DPIE	Department of Primary Industries and Energy - Federal agency that administers the NLP in partnership with the States, Territories and the Department of the Environment, Sport and Territories.
ERIN	Environmental Resources Information Network - environmental database.
ESD	Ecologically sustainable development
GIS	Geographic information system - a spatially based information system relating to land resources and geographic mapping.
Integrated State landcare council	Such councils integrate land and water resources.
LAL	Landcare Australia Limited
LRA	Land resource assessment
MDBC	Murray Darling Basin Commission
NLAC	National Landcare Advisory Committee - a committee comprised of community representatives to advise ministers for the environment and primary industry on matters relating to landcare.
NLP	National Landcare Program (see below)
NRIC	Natural Resources Information Centre - computer information network of geographic data.
OBT	One Billion Trees (program - see below)
One Stop Shop	Single administrative arrangement for receipt and assessment of applications for funding by DPIE, MDBC

	and ANCA under the community component of the NLP.
Partnership agreements	The Commonwealth Government has developed partnership agreements with the State and Territory governments defining strategic directions and agreed priorities for landcare funding.
PMP	Property management planning
R&D	Research and development
RAS	Rural Adjustment Scheme - administered by DPIE.
REEP	Regional Environment Employment Program
Regional and State assessment panels	Government, industry, community, Aboriginal and environmental representatives involved in assessing proposed NLP projects.
SCARM	Standing Committee on Agriculture and Resource Management
SRMC	Sustainable Resource Management Committee of SCARM
STB	Save The Bush (program - see below)

Government strategies and programs

Decade of Landcare Plan	The Decade Plan spans the 1990s. Initially suggested by the National Farmers' Federation and the Australian Conservation Foundation, it aims to increase awareness and participation among rural and urban communities to improve management of natural resources (see Box 1; page iv).
Murray Darling Basin National Resources Management Strategy	One element of the Murray Darling Basin Initiative, administered by the Murray Darling Basin Commission.
National Drought Policy	Identifies policy options and recommendations for the Commonwealth Government to assist primary producers adopt self-reliant approaches to the management of drought (Australian Government Publishing Service, 1990).
National Forests Policy Statement	Provides a framework to ensure that the Australian community derives optimal benefit from its forests and forest resources (Australian Government Publishing Service, 1992).
National Greenhouse Response Strategy	Strategy to contribute to management of greenhouse gases, improve understanding of the greenhouse effect and prepare for potential impacts of climate change in Australia (Australian Government Publishing Service, 1992).
National Landcare Program	Commonwealth program administered in partnership with the State/Territory governments and the community. It aims to promote the uptake of land and

	water management practices that are ecologically, economically and socially sustainable.
National Rangelands Strategy	This strategy is under development. It will aim to improve the economic and environmental management of rangelands.
National Strategy for Ecologically Sustainable Development	Strategy for a coordinated approach to ecologically sustainable development, including a compendium of recommendations for different industry sectors (Australian Government Publishing Service, 1992).
National Strategy for the Conservation of Australia's Biological Diversity	In development, this strategy aims to conserve Australia's biological diversity through action by governments, industry, non-government organisations and individuals (published by the Department of the Arts, Sport, the Environment and Territories, 1992).
National Water Quality Management Strategy	Strategy to achieve sustainable use of the nation's water resources by protecting and enhancing their quality while maintaining economic and social development (Australian Water and Wastewater Association, 1994).
National Weeds Strategy	In development - this draft strategy provides guidelines on the management of agricultural, forest and environmental weeds in the context of national ecologically sustainable development.
One Billion Trees	ANCA program providing grants to communities and local governments to conserve and re-establish native vegetation in rural and urban areas.
Ribbons of Blue	Western Australia's community-based water quality monitoring program.
Saltwatch	Community program monitoring salt levels in inland waterways, with particular involvement of school students.
Save The Bush	Program administered by ANCA which supports activities relating to the protection, management and study of remnant native vegetation.
State of the Environment Reporting System	A nation-wide State of the Environment report is due to be published in late 1995.
Waterwatch	ANCA program providing a focus for community groups monitoring water quality as a measure of land and water degradation and catalysing remedial actions.
Working Nation	White Paper on Employment and Growth presented by Prime Minister Keating in May 1994, describing policies to develop employment and economic and social strength (Australian Government Publishing Service, 1994).

Box 1: Decade of Landcare Plan

The national Decade of Landcare Plan comprises a series of documents:

- the National Overview;
- the Commonwealth Component Plan; and
- individual State and Territory component plans.

The National Overview was endorsed by the Australian Soil Conservation Council (ASCC) at its meeting in Adelaide in August 1992. Subtitled *Australia's Transition to Sustainable Land Use*, the National Overview outlines future challenges and the integrated, cooperative approaches required to meet these challenges.

The National Overview sets out five national goals for the Decade of Landcare Plan. These are to have:

- the whole community aware of the problem of land degradation and the benefits of sustainable land use;
- continuing development and implementation of sustainable land-use principles and practices;
- all public and private land users and managers understanding the principles of sustainable land use and applying them in their use and management decisions;
- all Australians working together in partnership for sustainable land use; and
- effective and appropriate economic, legislative and policy mechanisms in place to facilitate the achievement of sustainable land use.

The State and Territory component plans were prepared by agriculture and natural resource management agencies in each of the States and Territories. These plans, which were approved at local jurisdictional level, were developed in accord with the National Overview.

The Commonwealth Component Plan was prepared by the Department of Primary Industries and Energy (DPIE) and released in January 1992. This plan outlines the role of governments, the community and individuals in landcare and details the Commonwealth Government's approach, policies and programs in landcare-related areas. Program details were also developed in accord with the eight approaches set out in the National Overview.

1. Introduction

1.1 The Decade of Landcare

The Decade of Landcare initiative was launched in the 1989 *Statement on the Environment* by the then Prime Minister (Hawke 1989). The initiative had its origin in a joint National Farmers' Federation - Australian Conservation Foundation proposal to the Commonwealth Government for new momentum to action on land degradation. This approach emphasised the importance of a self-help approach, relying heavily on local community groups, within a framework that recognised the responsibilities of the Commonwealth, State and local governments.

The *Statement on the Environment* identified only very general landcare objectives. Consequently, the Soil Conservation Advisory Committee recommended to the Minister for Primary Industries and Energy that landcare be given a strategic framework. There was considerable support for this proposal and the Australian Soil Conservation Council agreed to oversee the preparation of a Decade of Landcare Plan.

The result was the national Decade of Landcare Plan which comprises: a National Overview, agreed by the Commonwealth Government, the State and Territory governments and leading non-government organisations; and individual State, Territory and Commonwealth component plans (see Box 1).

1.2 Vision and goals

The overarching vision expressed in the National Overview is:

The development and implementation of systems of land use and management which will sustain individual and community benefits now and in the future.

The Overview outlines five general goals that encompass a series of broad national approaches to important issues central to improving land management (see Box 1). Implicit in the goals and broad approaches is a framework for action. The general thrust of the Decade of Landcare Plan is that individuals, community organisations and governments should work towards sustainable land use by understanding the nature of the problems involved; acquiring the necessary information, skills and resources to solve such problems; and developing and applying practical solutions on the ground.

The concept underlying the development of landcare is the partnership of government and community to become agents of change — addressing the causes of land degradation, not just the symptoms.

1.3 The evolving policy context

The strategic framework

Since the preparation of the Decade of Landcare Plan, there have been major policy developments which have implications for the management of land resources. The most important change has been the increasing integration of economic and ecological considerations. This was manifested in the adoption by the Commonwealth Government and all the State and Territory governments of the National Strategy for Ecologically Sustainable Development (ESD).

Although the finalisation of the ESD Strategy followed the completion of the Decade of Landcare Plan, work on each was undertaken concurrently and there were strong links between the two. Other related strategies which have a bearing on the operating environment for natural resource managers are:

- National Drought Policy;
- National Greenhouse Response Strategy;
- National Water Quality Management Strategy;
- National Forests Policy Statement;
- the draft National Strategy for the Conservation of Australia's Biological Diversity;
- the draft National Weeds Strategy; and
- the emerging strategy for rangelands management.

The National Landcare Program

The National Landcare Program (NLP) was established in 1992 following a review of the natural resource management programs in the Primary Industries and Energy portfolio. The review recommended a more explicit focus on the objectives of ecologically sustainable development, and improved resource management and efficiency. It also recommended that Commonwealth funding for the land and water programs should form part of comprehensive initiatives to address natural resource management problems by drawing on Commonwealth, State and private sector resources according to their degree of responsibility.

The NLP covers both natural resource management in catchments and community landcare action. Catchment management involves the community and government working together to develop and implement better strategies for the management of river catchments. It uses a strategic approach to planning and management of natural resource activities within a catchment. Community action through landcare groups has shown that land users are committed to taking responsibility for local resources, and are seeking to increase the awareness and implementation of sustainable land-management practices. Catchment management builds on the local action of landcare groups to coordinate activities across a whole catchment.

Legislation (the *Natural Resources Management (Financial Assistance) Act 1992*) was enacted to provide a statutory basis for involvement of the Commonwealth Department of Primary Industries and Energy (DPIE) in natural resource management, including the funding of programs carried out by the States and Territories. The *Act* also established a community consultation forum, the National Landcare Advisory Committee (NLAC), which reports to the Commonwealth Ministers for Primary Industries and Energy and the Environment, Sport and Territories.

At the same time, a number of other natural resource management programs were brought under the administrative umbrella of the NLP to simplify project

application and approval procedures - the so-called 'One Stop Shop' arrangements for landcare community group grants. These included the community elements of the former National Soil Conservation Program and the former Federal Water Resources Assistance Program together with:

- the Murray Darling Basin Natural Resources Management Strategy, administered by the Murray Darling Basin Commission; and
- the community group grants elements of the One Billion Trees Program (OBT) and the Save the Bush Program (STB), both of which are administered by the Department of the Environment, Sport and Territories, through the Australian Nature Conservation Agency (ANCA).

More recently, the NLP was broadened to encompass all aspects of OBT and STB, as well as Waterwatch, a community water quality monitoring program administered by ANCA, and also delivered through the One Stop Shop.

Through Commonwealth-State partnership agreements, the States and Territories are being encouraged to develop broad packages of measures designed to achieve sustainable management of land, water and related natural resources. The partnership framework includes provision for funding packages of measures, including complementary institutional and economic reforms, which are in the national interest. Local government, industry and the community have a role in developing and implementing agreed actions, in accordance with State and Territory strategies.

The operating environment

Resource-based industries, particularly agriculture, are subject to an operating environment that is constantly changing. Current pressures include:

- the need to maintain productivity gains in the face of a continuing cost-price squeeze for agriculture, emphasising the importance of research and development in providing information on resource-based systems and on technologies for sustainable development, and on the packaging of results to facilitate adoption;
- the importance of diversifying the enterprise mix to meet changing markets, including the requirements of new markets, e.g. in Asia;
- a continuing requirement to address resource management issues, with water quality and irrigation salinity major concerns;
- for farmers, the need to cope with an increasingly complex business environment, in which sound financial and risk management skills, and the ability to seek out information on profitable and sustainable farming practices are critical;
- structural change arising not only from changing commodity markets, but also from microeconomic reform associated with policies such as the Council of Australian Governments (COAG) water reform agenda;
- consumer concern about product quality, particularly pesticide residues ('clean green' produce); and
- increasing ownership of land and associated resources by indigenous peoples, and concomitant management responsibilities.

Regional approaches to landcare

The Commonwealth Government is moving to place greater emphasis on the development of regions to promote sustainable national growth. The White Paper *Working Nation*, released in May 1994, outlined specific regional development initiatives. In addition, DPIE is implementing a regional approach targeting portfolio responsibilities for the management of natural resources, agriculture and primary industries, particularly in regard to structural adjustment. Portfolio programs that are involved in this regional approach are the NLP, the Rural Adjustment Scheme (RAS), and agribusiness and rural community access programs.

The value of addressing natural resource management on a regional basis has also been recognised by State and Territory governments. This is demonstrated by the widespread introduction of total or integrated catchment management. In some sectors landcare groups have progressed from focusing on single issues and on small catchment/geographic area projects and are now developing a bigger picture with regional or catchment-wide plans. They are recognising the need to involve more fully the urban community, local government, rural industry bodies and public land managers as significant stakeholders in natural resource management.

Policy development in this area is occurring rapidly. The issues and range of activities necessary to achieve linkages are complex and involve many government agencies.

1.4 Scope and methodology of the evaluation

Requirement to evaluate

The Decade of Landcare initiative has been in place since 1989 and the national Decade of Landcare Plan was negotiated during 1991 and finalised in 1992. It is timely to consider the impact of the activities undertaken under the auspices of the Plan and the continued relevance of the goals and the framework for action which underpin the Decade Plan.

The Commonwealth Government, State and Territory governments and the landcare community have allocated considerable resources to the Decade of Landcare Plan initiative and it is important that there be an assessment of the impact of that expenditure. At a meeting in August 1992 the Australian Soil Conservation Council accepted the need to review the Plan nationally no later than 1994, 1997 and 2000 to publicly assess progress in addressing land degradation.

Terms of reference

At the meeting of 7-8 April 1994, the Standing Committee of the Agricultural and Resource Management Council of Australia and New Zealand (SCARM) agreed that the national Decade of Landcare Plan should be evaluated in 1994 and, subject to the outcome of that review, revised in 1995. The terms of reference for the evaluation are shown in Appendix 1.

It was agreed that the Sustainable Resource Management Committee (SRMC) would oversee the evaluation. The evaluation would be based on consultations with key players, drawn from the evaluations of component State, Territory and Commonwealth plans and would report on outcomes achieved and barriers to desired change.

Approach taken in the evaluation

At the meeting of the Evaluation Working Group of SRMC on 22 July 1994, a process for the evaluation of the National Overview and a common format for evaluation of the component plans was agreed.

In the absence of clearly defined outcomes and performance indicators, data collection and analysis were linked to the goals and key issues. The evaluation drew upon a range of different sources and kinds of data and information, including surveys, case studies, research results and the National Landcare Facilitator's report. Commonwealth, State and Territory agencies' reports of their activities under the Decade of Landcare Plan were also taken into account.

The approach to evaluation of the component plans required assessment of whether the goals and objectives of the plan had been achieved. This entailed:

- assessment of the implementation of the strategies, initiatives and key actions identified in the plan;
- analysis of the impact of implementation; and
- in the light of that analysis, assessment of the overall framework or model outlined in the National Overview.

Evaluation of the individual component plans proceeded concurrently with the National Overview evaluation and the evaluation team was able to incorporate the results progressively.

Detailed assessments against national goals are shown in Chapter 2.

Consultations

Comment on issues relevant to the evaluation came through submissions by the public and by organisations including:

- the Australian Farm Management Society Conference (Canberra, April 1994);
- the Australian Landcare Conference (Hobart, September 1994); and
- the Review of Landcare Policies and Programs in Australia, by the Senate Standing Committee on Rural and Regional Affairs.

The Decade of Landcare Plan was also considered by the Standing Committee of the Australian and New Zealand Environment and Conservation Council, and specifically the Voluntary Nature Conservation on Private Lands Working Group.

The National Landcare Advisory Committee (NLAC) was the primary focus for consultations with key players. In addition to consideration at routine meetings, NLAC discussed the key issues in Canberra on 15 November 1994 at a workshop at which State and Territory Landcare Councils were represented.

The evaluation was considered and endorsed by both the Agriculture and Resource Management Council of Australia and New Zealand, and the Australian and New Zealand Environment and Conservation Council.

2 - National Goals - Assessment of Outcomes

2.1 Goal 1 - the whole community aware of the problem of land degradation and the benefits of sustainable land use

Mechanisms used to measure achievements were:

- awareness surveys;
- identification by land managers of degradation problems and threats to biological diversity;
- schools and tertiary institutions with landcare and environmental education in the curriculum/courses; and
- the extent of community environmental monitoring (Waterwatch, Ribbons of Blue, Saltwatch).

Key findings

- The Roy Morgan Research Centre surveys have found that awareness of landcare in Australia increased from 22% in 1991 to 66% in 1994 (LAL 1994). See Table 1.
- Results from the ABARE survey of landcare and land management practices show that in 1992-93 landcare membership was estimated to be 28% in broadacre industries and 19% in the dairy industry. This was slightly higher than membership in 1991-92 (ABARE 1994). See Table 2.
- ABARE found that around 40% of landcare members in broadacre and dairy industries participated in catchment/regional planning in 1992-93.
- By 1994, the number of landcare groups had reached 2200. The target set for the whole of the Decade was 2000.
- In the wheat/sheep belt, landholders' perceptions of water erosion problems correspond well to the area of water erosion hazard. There is a large area in western Queensland where farmers perceive they have a water erosion problem which is not apparent in the resource base data (East et al. 1994).
- A survey of schools in Western Australia showed that 30% of respondent schools were using landcare curriculum materials; 42% of all schools were involved in programs such as Ribbons of Blue and Greening Western Australia (WA pers. comm. 1994).
- In a review of courses on offer at universities and colleges of advanced education, McColl et al. (1991) identified 25 courses in natural resource management. Between 1986 and 1990 enrolments in such courses increased from 494 to 1112.
- An estimated 20 000 people, including primary and high school students, landholders and community groups, are now involved in regular monitoring of surface and groundwater (ANCA pers. comm. 1994).

Comment

There has been progress against this goal.

- Awareness of landcare within the community is high, and within the farm community awareness has been manifested in growing landcare group memberships.
- The school systems and tertiary institutions have significantly expanded their coverage of landcare matters, and strong linkages have been established between schools and community environmental monitoring.

Issues for the future

Discussion about the future directions of landcare has identified questions about the scope of the Decade Plan. The adoption of the ESD Strategy since the Decade of Landcare Plan was launched means that there is a need to increase awareness that landcare is about ecologically sustainable land use. This may require improved education and information dissemination on nature conservation principles and the role of the maintenance of biological diversity in the sustainable management of land and water resources.

There have been questions about whether awareness-raising should continue to have a central place in policies and programs to promote sustainable land use. One view that is strongly supported is that awareness-raising will continue to be important to groups that are still forming, particularly in areas where there are degradation problems, and for those parts of the community which are under-represented in landcare, such as Aboriginal people and Torres Strait Islanders and people of non-English-speaking background. This suggests that there is a need for targeting of awareness activities to ensure such groups are included. The amount of awareness-raising required in the urban community is under review.

More fundamental to future policies and programs are questions about whether awareness has resulted in understanding of the nature, extent and relative importance of land-use problems and whether that understanding has been translated into adoption of sustainable land-use practices. This is discussed further in the analysis of Goal 3.

Table 1

Percentage of Australians aware of landcare

Year	%
1991	22
1992	44
1993	53
1994	66

Source: LAL (1994)

Table 2

Percentage of broadacre farms where the operator or a family representative is a landcare member

State	%
New South Wales	24
Victoria	38
Queensland	20
South Australia	21
Western Australia	44
Tasmania	12
Northern Territory	47
Australia	28

Source: ABARE (1994)

Case study: - Concern for salinity in Victoria

Increased concern for salinity is strongly evident in Victoria. A three-phase monitoring study from 1988 to 1994 undertaken for the Victorian Salinity Program by Reark (1994) has revealed increased concern about salinity by Melbourne residents.

This is markedly different from concern nationally about water and wind erosion, which fell during the recent recession. This trend was identified in monitoring work by Frank Small and Associates (1994) between 1989 and 1994.

The concern about salinity in Victoria is driven by an increase in activities that raise awareness of salinity. During the first of the surveys, Melbourne residents were not highly aware of salinity and thus had little concern about the problem. Awareness has continued to grow, resulting in a sustained increase in community concern, against the trend of concern for other degradation issues.

Source: Barr and Brown (1994)

2.2 Goal 2 - continuing development and implementation of sustainable land-use principles and practices

Mechanisms used to measure achievement of this goal were:

- the extent of collaborative and integrated research and development addressing major sustainable land-management principles and practices;
- the extent to which the long-term commercial benefit of sustainable natural resource management is demonstrated;
- the effectiveness of information transfers from researchers to land managers;
- the availability of information-transfer methods which address barriers to desired change; and
- the transfer of information between land managers.

Key findings

- The way that research and development is undertaken in Australia has changed significantly to focus on sustainable use of Australia's natural resources. For example, the Land and Water Resources Research and Development Corporation has spent around \$40 million on research and development since its establishment in 1990 and around \$3 million on awareness and adoption. Other Research and Development Corporations also contribute to sustainable land-use projects.
- ABARE survey results show that farmers who are members of landcare groups have a high appreciation of the value of information dissemination activities. In 1992-93, information exchange at meetings was rated most highly by 34% of members (ABARE 1994).
- Over 80% of landcare members in the broadacre and dairy industries participated in field days or demonstrations (1991-92) and the information exchange at these activities was seen to be the most valued aspect of landcare groups.
- In the Johnstone Centre study in Victoria (Curtis and De Lacy 1994), 80% of landcare participants, 39% of non-landcare respondents in landcare areas, and 37% of respondents in non-landcare areas indicated that landcare groups were an important/very important influence on their level of knowledge of resource management topics.
- The establishment of the National Landcare Program as an integrated funding scheme that seeks to combine nature, soil and water conservation in landcare, is a significant achievement in the development and implementation of sustainable land-use principles and practices.
- Land degradation is primarily a social, rather than a technical, problem because solutions to land degradation exist but are not adopted by land managers for a wide variety of social, economic, cultural, perceptual and situational reasons (Vanclay 1992).

Comment

There has been progress against this goal.

- Research organisations have increasingly required integrated research programs in consultation with key stakeholders.
- The establishment of cooperative research centres and the development of multi-divisional programs in CSIRO reflect the trend towards multi-disciplinary research effort.

- Some progress is being made in communicating the results of research and development to landholders and in involving landholders in research activities.
- Some catchment management committees are actively determining priorities and directing government research, development and extension activities in their catchments.

Issues for the future

It is crucial that future research, development and extension are relevant, particularly in the interaction of the social, environmental and economic considerations in sustainable land management. A range of ways of facilitating this process has been suggested, including empowering groups to commission research and involving the landcare community in setting research priorities and allocating research funds.

There is a clear need to demonstrate the commercial benefits of sustainable land management, and to investigate alternative practices and products drawing on native flora and fauna. There is a call for landcare advisers to be trained in the multi-disciplinary approach of integrating nature, soil and water conservation principles and production farm business management.

Also important for the future is the recognition that research is not confined to research organisations. Land managers and community groups have a wealth of experience and knowledge in natural resource management, which should be captured in the research, development and extension system. The landcare community is anxious to share the results of their trials, and consequently networks between groups could be further developed. The extension of information technology into the landcare community would help in this regard.

Case study: Conservation farming in cereal growing areas

Medium to long-term trials investigating conservation-farming techniques have been established in South Australia over the past 15 years. Treatments have included:

- a range of tillage systems (direct drill, minimum tillage and conventional tillage);
- crop rotations;
- varying levels of crop stubble retained; and
- a range of fertiliser rates.

A fertility index has been developed, based on soil carbon and nitrogen levels.

With no added nitrogen, the only rotation that has proven sustainable is cereal/sown pasture. With heavy rates of nitrogen even the continuous wheat treatment has maintained or slightly increased the fertility index, although grain protein values show signs of a future decrease.

Overall treatment responses and their interrelationships are very complex, requiring careful interpretation and extrapolation of results to other cereal growing areas. The adoption of conservation farming requires the close collaboration of researchers, extension personnel and end-users.

Source: Department of Primary Industries, South Australia

2.3 Goal 3 - all public and private land users and managers understanding the principles of sustainable land use and applying them in their use and management decisions

The following indicators were used to measure achievement of this goal:

- extent of land manager skills development and participation in property management planning;
- extent of education and training to assist land managers to understand and implement sustainable land, water and vegetation management practices;
- extent that understanding sustainable land-use principles will influence the application of such principles;
- level of adoption of sustainable land, water and vegetation management practices; and
- degree of monitoring of land, water and vegetation management activities.

Key findings

- Landcare farmers spent an average of \$2500 on landcare activities during 1992-93 and farmers are aware of the value of property management plans (50% of broadacre farmers and 61% of dairy farmers perceived them to have good value) (ABARE 1994).
- ABARE's study of property management plans (ABARE 1994) found that over half (66%) contained information on soils/land capability, and about half included records of crop/livestock paddock performance (47%), and a farm operating budget (59%). This study also found that the use of minimum or reduced tillage (68%) or direct drilling (37%) was widespread in broadacre cropping industries. A conservative stocking rate was listed as normal farm practice by around three-quarters of farmers in the broadacre and dairy industries.
- Studies by Curtis and De Lacy (1994) and ABARE (1994) showed that landcare members had significantly higher levels of adoption of best bet practices than non-members.
- Research has affirmed the desirability of changes in awareness and attitude as prerequisites for change. However, economic factors and technical feasibility are central considerations in the adoption of sustainable land management practices (Barr et al. 1993; Harvey and Hurley 1990; Sinden and King 1990; and Vanclay 1992).
- Research has found that attitudes are not generally predictive of behaviour (Vanclay 1992) and experience can shape attitudes which in turn shape subsequent behaviour, pending new experience (Mackay 1994).
- There is a strong association between areas of high livestock density and adoption of best bet pasture management practices (East et al. 1994).
- A study by Fievez et al. (1994) indicated perceptions among farmers were that profitability and sustainability are different concepts.
- Public lands are increasingly covered by management plans. For example, the Department of Defence has plans in place for 14 of its 36 army training areas.
- Minimum or reduced tillage practices were used to establish 52% of the cereal and grain legume crops in Western Australia in 1993 (ABS 1993). The level of herbicide usage in 1994 indicated that crop establishment using minimum tillage had risen to about 60%.
- Water-use efficiency of field crops is being widely monitored in Western Australia and Victoria (using Meycheck and other crop monitoring processes).

Comment

There is progress against this goal.

- Participation in property management planning is an indicator of the adoption of sustainable land-management practices.
- Landcare group development has had major impact on adoption of sustainable land-management practices and landcare group membership continues to rise.
- At this stage of the evaluation, however, there is a lack of information on the extent to which changed management practices have had an impact on the natural resource base.

Issues for the future

The key issue for the future under this goal is how to encourage more land managers to adopt ecologically sustainable natural resource management practices. For example, this could be the adoption of products and processes based on native flora and fauna that are compatible with long-term use.

There is a need to further encourage land managers and financial institutions to develop and implement property management plans and to include biodiversity considerations and nature conservation principles in those plans. As more people take up the landcare initiative, catchment management should play an important role in putting the priorities for landcare action into the catchment context. An important next step in landcare could be the linking of property management plans to regional catchment plans, and the integration of private and public management plans and their coordinated implementation at the regional/catchment level.

Also crucial for the future of landcare is the promotion of the link between commercial viability and sustainability, and emphasis on the benefits of nature conservation on private land to sustainable agriculture. The management of farm risk is important to financial viability and needs to be linked to property management planning.

It has become apparent that there is a need for clearly defined, simple, and integrated performance indicators, able to be collected and used locally, but robustly applicable across Australia. This will rely, in part, on the development of methodologies and national procedures for community environmental monitoring, and ensuring that communities have sufficient skills and resources.

Case study:

The Peel-Harvey system in Western Australia

The Peel-Harvey waterway is currently suffering from algal and weed problems because of inappropriate land use in the catchment. This has been damaging for the fishing and tourism industries; it is a health hazard and is environmentally destructive. Scientists have identified the causes of the problem and have proposed solutions.

Fifteen catchment groups are involved in the community's response, which comprises:

- establishment of a catchment centre to integrate the activities of relevant

agencies, to generate awareness and to provide a focal point for the community;

- identification of all significant point sources of phosphorus and the introduction of management plans, with an estimated reduction in 1994 of 34 tonnes;
- the development of codes of practice for horticulture;
- 51 km of fencing and revegetation along drains and rivers; and
- the preparation of five rural planning strategies incorporating nutrient considerations.

Source: Department of Agriculture, Western Australia

2.4 Goal 4 - all Australians working together in partnership for sustainable land use

The mechanisms used to measure achievement of this goal were:

- levels of support for achieving landcare goals;
- level of participation of the wider community in landcare;
- support for cooperative, integrated action at the catchment or regional level; and
- the level of community consultation on the development of landcare policy directions.

Key findings

- In 1991-92, a survey of Victorian landcare group activities (Curtis et al. 1993) revealed that 24% of groups reported receiving non-government funding. This was a slight increase (up 2%) on an earlier survey. Western Australian land conservation district committees were considerably more successful at attracting non-government funding at a level of 41% of government funding (Curtis et al. 1994).
- Corporate support for Landcare Australia Ltd increased from \$2.6 million in 1990-91 to \$4.5 million in 1993-94 with sponsorship since the campaign began totaling \$12.5 million (LAL 1994). See Table 3.
- Funding from the Commonwealth increased from \$73.1 million in 1989-90 to \$115.4 million in 1993-94.
- An increase in the number of successful applications by Aboriginal and Torres Strait Islander peoples under the National Landcare Program.
- The Land and Water Resources Research and Development Corporation's program approach to supporting research and development activities has significantly increased collaboration between community members, researchers and resource managers, and regulators and policy makers.
- The Commonwealth and all States and Territories have a peak coordinating committee or a community consultative mechanism.

Comment

There has been progress against this goal.

- At the national level, corporate support for landcare is still increasing.
- Government support for landcare has increased since 1989-90.
- There is increasing non-government and local government support for landcare groups in Victoria.

Issues for the future

Though landcare has been very successful, there are still land managers outside landcare. Consideration should be given to how these land managers can be encouraged and equipped to implement sustainable land-management practices. Another area for action is developing a more targeted approach that will increase the involvement of those groups currently under-represented in landcare, including Aboriginal people and Torres Strait Islanders, people from non-English speaking backgrounds, 'hobby farmers', women and children. Further consideration needs to be given to the involvement of the urban community in the landcare movement.

Continuing issues are ensuring the support of the wider Australian community for priority to be given to landcare, and increasing the participation by industry, business and the financial sector.

The regional dimension has become increasingly important for landcare. One outcome which is sought is that truly cooperative, integrated approaches are put in place at the regional/catchment level, supported by regional visions, adequate skills bases and appropriate markets. This would require increased community involvement at the regional/catchment level, enhanced partnerships between landcare groups at the sub-regional level, and the coordination and targeting of government programs.

Although the government/community partnership has advanced significantly in the Decade to date, further development of that partnership is essential. It is also imperative that local government be included.

Table 3:

Corporate support for Landcare Australia Limited

Year	\$ million
1991-92	2.9
1992-93	3.6
1993-94	4.5

Source: LAL (1993)

Case study:

Highlands Irrigation Area in South Australia

The Commonwealth Government, the State and local governments, irrigators and the local community are working in partnership to support the refurbishment and rehabilitation of the Highlands Irrigation Area in South Australia.

Identifiable national benefits which will flow from the package of works and related measures include:

- reduced river salinity;
- amelioration of the degraded environment surrounding the irrigation areas and reduced groundwater accessions;
- on-farm adjustment leading to more viable irrigated agriculture; and
- more efficient resource use and demonstration of benefits of microeconomic reform.

In addition there will be economic benefits from improved productivity.

Source: Commonwealth Department of Primary Industries and Energy

2.5 Goal 5 - effective and appropriate economic, legislative and policy mechanisms in place to facilitate the achievement of sustainable land use

The mechanisms used to measure achievement were:

- the extent of legislative reviews involving community participation;
- effective natural resource and environmental assessment information for planning and monitoring;
- degree of inter-agency cooperation; and
- extent of efficient resource pricing policies.

Key findings

- The Commonwealth Government and the State and Territory governments have introduced or are reviewing legislation, involving widespread community consultation, to provide a framework for more integrated approaches to land and water management.
- A more user-oriented approach to land resource assessment has been developed which has clear links to resource management and a stronger emphasis on information products. Consistency and standards are being improved through the Australian Collaborative Land Evaluation Program.
- Integrated State and Territory landcare councils (Victoria, Tasmania, Queensland, the Northern Territory and Western Australia) have coordinated community involvement in natural resource management.
- Improved environmental monitoring and natural resource information have been achieved through the Environmental Resources Information Network (ERIN) and the National Resources Information Centre (NRIC).
- Establishment of the State of the Environment reporting framework with the first report due in 1995.
- The National Landcare Program 'One Stop Shop', integrated State assessment panels and the development of Commonwealth-State partnership agreements have resulted in better coordinated administration of natural resource management policies and programs.
- Agreement by the Council of Australian Governments in February 1994 on water reforms was a significant step. Some States have already moved in this direction; for example, trading arrangements for water entitlements (South Australia and Victoria) and revised pricing arrangements (the Australian Capital Territory) have facilitated sustainable land use.
- Most States and Territories have in place policies or legislation relating to vegetation clearing, and it is now general practice for land managers who wish to clear to obtain a clearing permit in advance. However, there is widespread variation in the effectiveness of these policies. Legislative clearing controls in South Australia have had considerable impact on the retention of native vegetation, and similar procedures have been introduced in Victoria. Western Australia also has legislated to control land clearing.

Comment

There has been progress towards achieving this goal.

Issues for the future

There has been wide support for the proposition that all levels of government continue their support for landcare. Continued support for community landcare groups and landcare coordinators is generally considered essential.

There is also strong support for the barriers to ecologically sustainable natural resource management to be identified and addressed through incentives, disincentives, national leadership and a more targeted National Landcare Program. It has been argued that the program should concentrate more on implementation by providing funding for on-ground works which have clear community benefits and which are part of a regional/catchment plan. There is a view that this could be achieved through the devolution of funding allocations to regional panels, although there are issues of inter-regional equity and accountability which would have a major influence on any such proposal.

There are two issues associated with regional and catchment management. One is the emerging need to coordinate the management of land, water and vegetation resources at the regional level across areas of both public and private land. The other relates to the role of landcare and landcare-related programs in achieving wider regional development objectives. Both are linked; the former addresses a specific issue of coordination of public and private resources management, while the latter is of significance given the focus of government policies on regional development.

While landcare has provided a mechanism for encouraging the adoption of sustainable management practices by private landholders, less has been done to encourage sustainable land management on public land. It is incumbent upon governments to allocate resources to the management of public lands, consistent with commitments made in the Decade of Landcare Plan.

In urban, peri-urban, coastal and rural areas it is important that land-use planners integrate economic, environmental and social considerations, and that the links between bioregional/catchment divisions and regional economic development be strengthened.

The preparation and operation of the Decade of Landcare Plan have significantly affected the way agencies deal with one another. There is, however, potential for stronger links on the ground between key agencies and between all levels of government, across natural resource management and nature conservation, and across and between regions.

Strong support has become apparent for improved mechanisms to encourage retention of remnant native vegetation on private lands through actions including:

- establishment of covenant schemes;
- other economic incentives such as rate relief and fencing assistance; and
- tighter controls on the clearing of native vegetation.

State governments have significantly adjusted land-management legislation in recent years. Some States still do not have a comprehensive legal framework for action and this should be addressed. In other States/Territories there is an opportunity to review and adjust relevant legislation to better meet the needs of the changing attitudes of land managers.

ABARE has been commissioned under the NLP to assess the effectiveness of taxation incentives, including sections 75B and 75D of the *Australian Income Tax Assessment Act 1936*. This will provide input to the comprehensive review being conducted by DPIE of tax concessions for landcare-related works.

3 - The Way Forward

3.1 Key findings and conclusions

The Evaluation Working Group has concluded that there has been progress against all of the goals identified in the National Overview.

Awareness of landcare within the farming and wider community is high. This has been demonstrated by the growth in the landcare movement and widespread involvement in community environmental monitoring.

One area for further work is encouraging development of landcare groups in priority areas where groups have not yet formed or are under-represented. Also at issue is the extent to which promoting awareness should remain a central objective of policies and programs to achieve sustainable land use. This will be a key question when considering the future direction of the Decade Plan.

The way that research and development is undertaken in Australia has changed significantly to focus on the sustainable management of natural resources. Progress is being made in communicating the results of research and development to landholders, and with involving landholders in research activities.

Further work may need to be done to involve land managers more in setting research priorities and allocating research funds. The further extension of information technology into the landcare community needs to be addressed.

Surveys and case studies show that, while landcare members had significantly higher levels of adoption of best bet practices, such practices were also being taken up more widely in the farming sector. Best bet practices were defined as the best options for sustainable agriculture given current knowledge. The adoption of the relevant sustainable management practices is an important pointer to whether there is improvement in resource condition. Such practices included:

- management of stocking rates;
- use of perennial pasture species;
- minimum and reduced tillage;
- more efficient irrigation practices;
- direct drilling;
- spring and bare fallow cultivation; and
- tree and shrub planting.

An issue for the future is how to encourage land managers who are not part of the landcare movement to adopt sustainable land-management practices. More effective promotion of the link between profitability and sustainability is important here. Part of the answer may lie in land managers measuring the impact of their land-management decisions on profitability and condition of the resource. It is essential that they have access to cost-effective approaches to monitoring the on and off-site effects of implementing sustainable land-management practices over time. The Property Management Planning Campaign has been an effective means of introducing non-landcare farmers to sustainable land-management practices, and demonstrating strong links between sustainability and farm profitability.

More and more Australians are working together in partnership for sustainable natural resource management. This is shown by the expansion of the landcare movement, the increasing level of corporate support for landcare activity at the national and State level, and increased collaboration between community

members, advisors, researchers and resource managers, and regulators and policy makers.

Further work will be required to increase the involvement in landcare of Aboriginal and Torres Strait Islander peoples and people from non-English speaking backgrounds. Determining meaningful ways for including the urban community, extending landcare to the regional or catchment level, and raising the level of industry and local government involvement in landcare are issues for consideration.

The urgent need for a more comprehensive approach to the integrated management of soil, water and biological resources is receiving more attention. This needs to occur in a strategic framework to ensure multiple objectives and a coordinated approach at all levels of planning and operation. Catchment management planning provides a focus for integrated resource management at the catchment level, and the setting and implementation of priorities where there is a need for government and community action. It is important that landcare and total catchment management/integrated catchment management work with other regional development initiatives, processes and funds to ensure that development is consistent with the principles of ESD at all planning and management scales.

Revised legislative and policy mechanisms for sustainable natural resource management are being put in place in most jurisdictions and are effecting institutional change.

For the future, there is a need for a greater focus on economic instruments to encourage sustainable natural resource management and the development of stronger links on the ground between key agencies. Improved mechanisms for encouraging retention of remnant native vegetation on private land need to be addressed.

It is clear from the work to date that a major recommendation of the evaluation should be that any future plan should define the outcomes more clearly. Also crucial will be the establishment of credible performance indicators that will facilitate future evaluations. Other factors influencing the vision and goals are the increasing shift of the landcare philosophy towards an approach which encompasses soil, water and vegetation, the adoption of the National Strategy for Ecologically Sustainable Development, and a national focus on regional development.

3.2 - Recommendations

It is recommended that the vision and goals in the National Overview be revised and that specific performance indicators and milestones be established for the remainder of the Decade of Landcare, using, where possible, the work on indicators of sustainable agriculture and national State of the Environment reporting.

It is proposed that the *vision* of the Decade of Landcare Plan be:

Development and implementation of natural resource management practices which enhance our soil, water and biological resources and sustain individual and community benefits now and in the future.

The *goals* of the Decade of Landcare Plan would be to have:

- the whole community aware of the problem of the degradation of soil, water and biological resources and the economic, social and physical costs and benefits of sustainable natural resource management;
- research, development and information exchange relating to the principles and practices of sustainable natural resource management;
- all public and private land-users understanding and adopting the principles and practices of sustainable natural resource management;
- all Australians working together in partnership for sustainable natural resource management; and
- effective and appropriate economic, legislative and policy mechanisms in place to facilitate the achievement of sustainable natural resource management.

It is also proposed that the vision and goals be augmented by measurable performance indicators which establish specific targets, such as:

- awareness levels (differentiate general public from rural);
- numbers/proportions in catchment groups;
- number of land managers implementing property management plans;
- adoption of new, sustainable practices (e.g. conservation tillage);
- change in rangeland condition; or
- area of remnant vegetation protected by stock exclusion (typically fencing) and preferably under agreement.

Specific performance indicators tailored to the national, State and regional level will need to be developed during the next phase of establishing strategies and activities. All stakeholders should be encouraged to identify performance indicators and targets to guide their progress over the remainder of the Decade of Landcare. Baseline data should be established on the condition of the natural resource base, using, where possible, the work on indicators of sustainable agriculture and State of the Environment reporting.

It is clear that the framework for action outlined in the National Overview continues to be appropriate in general terms, although refinements to the strategies and action plans may be necessary.

It is recommended that strategies be developed to address the following issues.

Awareness-raising, capacity building and implementation

Maintaining the landcare momentum and the effectiveness of National Landcare Program expenditure will need to be addressed. The existing approach concentrates on promoting long-term change by increasing land managers' knowledge and skills, facilitating planning and providing associated support services. That focus should remain, although awareness campaigns need to target those groups under-represented in the landcare community. These include Aboriginal and Torres Strait Islander peoples, people of non-English speaking background, and urban Australians.

Any new approach should recognise that many landcare groups have matured and are seeking new directions, including access to sound technical information and the implementation of resource management plans. There is potential to fine-tune the current approach to address the need for support for community works which meet certain criteria and are consistent with a regional or catchment plan.

The level of public and private benefits will need to be taken into account when determining cost sharing of the sustainable farming practice.

Economic viability and sustainability

Government action alone will not achieve the necessary response in moving to more sustainable natural resource management.

Real results will be achieved only when sustainable practices are regarded as essential to farm business and these practices are shown to be profitable. The evaluation has indicated that this link has not yet been effectively demonstrated and promoted.

This will require further research and development on sustainable farming systems. Additionally, it is important that the results of existing knowledge be applied to practical situations in a local area. A related factor is the need for further development and encouragement of improved farm management skills that address sustainability as an integral part of the whole farm business.

A regional framework for landcare

In some sectors landcare has progressed from focusing on single issues and on small catchments/geographic area projects and many groups are now developing a bigger picture with catchment-wide plans. They are recognising the need to involve more fully the urban community, rural industry bodies, local government and public land managers as significant stakeholders in sustainable natural resource management. This does not detract from the fact that the success of landcare has been the local ownership and commitment to change issues of importance by small groups of individuals, and on-farm implementation.

The urgent need for a more comprehensive approach to the integrated management of soil, water and biological resources, as well as links with industry and regional development, is receiving more attention. This needs to occur in a strategic framework to ensure multiple objectives and a coordinated approach at all levels of planning and operation.

There are four levels of strategic planning, namely:

- individual property;
- landcare community group or subcatchment;
- catchment or regional level; and
- State, national or major river basin.

There is a program for funding community landcare and the major regional land and water programs are managed through the partnership agreements. There is increasing need for communities to come together across a subcatchment/district and region/catchment to plan their outcomes. The National Landcare Program and other relevant programs will need to adjust to recognise this and take advantage of the strategic nature of the planning, monitoring, research, and implementation that could take place.

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Appendix 1 - Terms of reference

Evaluation of National Decade of Landcare Plan

'Standing Committee:

(a) NOTED the current Commonwealth Senate Inquiry into Landcare and other relevant work which is in progress;

(b) REQUESTED the Sustainable Resource Management Committee to oversight an evaluation of the Decade of Landcare Plan in 1994:

(i) based on consultations with key parties such as National Landcare Advisory Committee, State Landcare Councils, industry and other NGOs, community groups and ANZECC;

(ii) compiled from evaluations of component State, Territory and Commonwealth Plans undertaken according to an agreed nationally consistent approach;

(iii) to consider whether the strategies and programs developed are achieving the goals; and

(iv) to report on outcomes achieved and barriers to desired change; and

(c) REQUESTED SRMC to recommend on any changes necessary to the National Overview of the Decade Plan in 1995 based on (a) and (b) ...'.

SCARM resolution 11, meeting no 3, 7-8 April 1994.

Appendix 2: Assessment of approaches taken by the Commonwealth, States and Territories to improving land management

The Commonwealth Government and the State and Territory governments have undertaken a range of activities to advance the goals agreed in the National Overview. Relevant agencies have prepared detailed reports on those activities. The evaluation team has summarised the contents of those reports in the following table.

Planning and coordination approaches

Aims	Actions
<ul style="list-style-type: none">• Better align administration and implementation of funding for all landcare-related programs through a collaborative approach by all levels of government.	<ul style="list-style-type: none">• Partnership agreements.• NLP One Stop Shop.• Landcare Liaison Group.• Appointment of local government landcare facilitator.• Commonwealth encouraging environmental projects through Regional Environment Employment Program (REEP).
<ul style="list-style-type: none">• Support community groups through coordinated and collaborative interagency programs.	<ul style="list-style-type: none">• All State/Territory Governments and the Commonwealth Government either have peak coordinating committee or consultative mechanism.• Community-based regional and State assessment processes (all States).
<ul style="list-style-type: none">• Develop regional landcare strategies and mechanism for coordinating landcare activities.	<ul style="list-style-type: none">• Catchment management focus consistent across all States/Territories and the Commonwealth.• NLP supported catchment–planning projects in all States and Territories.
<ul style="list-style-type: none">• Encourage landcare groups to define major problems and issues and determine regional priorities in consultative manner.	<ul style="list-style-type: none">• Regional assessment panels in all States and Territories.• RAS and NLP have regional initiatives.• Some moves towards regional planning and priority setting at varying stages across nation.• Regional planning aspects of REEP.

Issues

- **Involvement of local government not clear.**
- **On ground interaction between agencies needs further development.**

Group development and action approaches

Aims

- Maintain landcare groups as the focus for individual and community involvement in improving land management.
- Encourage groups to set their own goals, objectives and develop strategic approaches to planning and implementing sustainable land use in their local areas.
- Stimulate the formation of groups where dividends for the community are maximised.
- Encourage and support groups by government agencies and other funding bodies providing technical and administrative information and training in technical, scientific, promotional, group management and community development skills through their establishment phase.
- Encourage regional networks of groups and the integrity and independence of groups.

Actions

- States/Territories and the Commonwealth should encourage landcare group development.
- Appointment of a National Landcare Facilitator.
- States/Territories and the Commonwealth should implement programs aimed at enhancing group performance skills.
- Landcare groups have continued to form.
- Varying levels of support from a range of agencies.
- Generally no formal processes in place but considerable networks are developing.
- All States and the ACT held a landcare conference.

Issues

- **Broadening the focus of community groups beyond natural resource management.**
- **Aboriginal landcare.**
- **Availability of government resources to meet the increasing demand from this process.**
- **Alternative sources of support/funding.**
- **Motives for group formation.**
- **Need for ongoing support.**
- **Need for broader evaluation of how funding and technical support is provided.**

On-farm improvement and land management programs

Aims

- Increase adoption of sustainable land-use practices.
- Encourage all individual land managers to adequately incorporate all relevant economic and ecological factors into their individual land-use decisions.
- Promote an integrated approach to land management planning.
- Encourage development of advisory and extension services which accelerate the transfer of information and technology from researchers to and between land-users.

Actions

- All cropping areas have conservation–farming research and extension programs.
- Increasing number of decision support and risk management packages available.
- Nationally adopted property management planning (PMP) campaign.
- Property management planning campaign designed to incorporate economic, business planning and ecological factors
- See above on property management planning campaign.
- National Rangelands Strategy, Decade of Landcare Plan, risk management strategies, e.g. for drought.
- South Australia has co-located teaching, research and development, and extension groups at Waite Campus.
- Formation of appropriate Cooperative Research Centre.
- Queensland has adopted a three-level extension strategy:
 - development,
 - information and delivery, and
 - landcare facilitators and Save the Bush coordinators.

Issues

- Understanding how different practices are incorporated into sustainable systems, e.g. revegetation.
- Define links between adoption of management practices and outcomes in relation to sustainable products and addressing existing systems.
- Need to define the role of nature conservation on rural land.
- Need for regional level goals and performance indicators.
- Provision of nature conservation information to land managers.
- Local government planning consistent with the objectives of sustainable natural resource management and enhancing the adoption of sustainable practices by landholders.
- Need formal evaluation of investment in PMP and catchment planning.
- Encourage research organisations to use landcare groups as part of extension process.

Public land management programs

Aims

- Stimulate continuing assessment of policies and procedures for public land management.
- Encourage the development and implementation of strategies for sustainable management for all public land.
- Encourage close coordination of all actions on all private and public land.

Actions

- Ongoing process of developing management plans for public land, e.g. national parks, Defence land.
- Most States/Territories have carried out or are in the process of legislative and policy review.
- Increasing community desire to be involved in management of public land.
- Aboriginal land management issues being addressed, where appropriate.

Issues

- **Use and management options for leasehold land.**
- **Aboriginal landcare and traditional use.**
- **Training programs for local government in sustainable management of natural resources.**
- **Some States have developed community consultation mechanisms.**
- **Further development of processes and procedures needed.**

Review of legislation and land-use policy

Aims

- Encourage development of organisational frameworks and, where practicable, markets, to provide incentives for the adoption of sustainable land use.
- Provide policy directions and establish adequate legislation, regulations and land-use planning procedures that encourage sustainable land use.

Actions

- COAG reforms and development of national competition policy.
- Formation of ARMCANZ, SCARM and SRMC.
- All States/Territories undertaking or have completed legislative and policy review.
- All States, Territories and the Commonwealth adopting framework for integrated approach to land and water management.
- Development of national strategies, e.g. ESD, National Greenhouse Response Strategy, biodiversity, endangered species, rangelands and regional strategies e.g. CYPLUS.

Issues

- **Develop framework for market incentives for sustainable land use.**
- **Need for communication of complexity of managing natural resources across all levels of government and wider community.**

Community education and awareness

Aims

- Change attitudes, knowledge and behaviour so all Australians can contribute to achieving sustainable management of land resources.
- Raise community awareness and understanding of the need for sustainable land use and of the consequences of alternative land-management approaches.
- Achieve long-term changes so attitudes and behaviour of individuals and the community favour sustainable land use.
- Encourage State-based landcare education programs which cooperate to share resources nationally.
- Integrate landcare principles into curricula at all levels.

Actions

- All States, Territories and the Commonwealth have established some form of awareness program and community consultative mechanism.
- NLAC is the national consultative mechanism.
- All States, Territories and the Commonwealth have developed education and curriculum support material.
- All States, Territories and the Commonwealth recognise need for teacher training.
- LAL sponsorship and marketing activities.
- Networks established for development and sharing of education source materials.

Issues

- **Link nationally many of the organisations dealing with landcare.**
- **Develop competency standards for education in landcare activities.**
- **Resources for in-service training for teachers.**
- **Community acceptance of the allocation of resources for sponsorship and marketing.**

Resource assessment programs

Aims

- Stimulate and support the collection of consistent and comparable data that are accessible to users to help address priority issues and problems.
- Coordinate resource assessment programs to promote inter-agency standardisation and public access to information
- Encourage local organisations to undertake local resource assessment and monitoring and form links with other groups undertaking similar work.

Actions

- LRA Review and ACLEP.
- State of the Environment reporting.
- All States, Territories and the Commonwealth adopting GIS technology.
- Evaluation of community environmental monitoring.
- Most States and Territories have land information coordinating committees (or equivalent).
- Development of various 'watch' programs, e.g. Saltwatch, Pasturewatch and Waterwatch.
- New South Wales has encouraged landcare groups to become involved in land-based catchment data capture and management activities.
- Soil pit field days used to increase landholder understanding of soil features.

Issues

- **Information coordination and linkages.**

Research and development activities

Aims

- Direct, integrate and focus the research and development effort to improve the long-term productive capacity and sustainable use of land resources.
- Ensure that adequate research and development activity occurs in areas where there are clear benefits for society as a whole and it is in the national interest.
- Improve the transfer of research and development information to land managers.

Actions

- Formation of Land and Water Resources Research and Development Corporation.
- Various States, Territories and the Commonwealth have integrated land and water programs and coordinated research.
- Linkage of research and landcare groups.
- Linkage between research corporations and providers to identify and develop sustainable farming systems.

Issues

- **How to involve community landcare groups in setting research priorities.**
- **Improving the linkages between research providers and land managers.**