
Summary of Outcomes Achieved

against the eight themes of the Commonwealth Decade of Landcare Plan

Program Theme 1: Coordination and Planning

Goal

Integrate and coordinate Commonwealth and State policies and programs for management of land and related water and forest resources.

Outcomes

The Commonwealth-State partnership arrangements established under the *Natural Resources Management (Financial Assistance) Act 1996* and the *Natural Heritage Trust of Australia Act 1997* integrate Commonwealth land, water and vegetation activities with those of the States and Territories.

The one-stop-shop integrated project application and assessment arrangements allow community representatives, State and Territory governments and Commonwealth agencies to directly advise Commonwealth ministers on project funding.

Regional initiatives address significant resource management issues by linking program inputs to regionally strategic outputs. They have provided a methodology for managing complex integrated projects involving State agencies, local government and the community. They established the arrangements necessary to achieve effective partnerships and resource management planning on a regional level.

The national policy making structures for agriculture, soil conservation and water have been integrated into the single Agriculture and Resource Management Council of Australia and New Zealand structure. The Council has established a framework and a baseline for measuring the sustainability of agriculture. These indicators and associated attributes are nominated in the Natural Heritage Trust Commonwealth-State partnership agreements as an important basis for assessing National Landcare Program outcomes. This public performance assessment and baseline study of the sustainability of Australia's major land use identifies policy and action priorities in a way which has never been available before.

Progress in involving local government in Landcare activity has depended on local conditions and initiatives, and can depend on external funding being available.

Program Theme 2: Landcare Group Development

Goal

Encourage cooperative action to address widespread land management problems by providing appropriate support to Landcare groups throughout Australia by, for example:

- stimulating the adoption of cost-effective practices based on appropriate technology,
- facilitating the effective sharing of information on current developments in technology and practices,
- identifying and removing barriers to the adoption of more effective land conservation practices, and
- developing community consultation processes for the formulation of Commonwealth policies affecting soil, water and vegetation resources.

Outcomes

The community group approach to natural resource management activity has been much more widely accepted and successful than was originally expected. The number of community based Landcare groups has increased from 200 in 1990 to 4200 in 1998. The original target was 1000 groups by 2000.

National Landcare Program funded employment 1997-98 (full-time employee equivalents).

Facilitators and coordinators	485
Technical and scientific	589
Education and extension	240
Administration	60
Other	792
Total full-time employee equivalents	2166

Landcare members have higher levels of awareness and knowledge of land degradation issues. Landcare participants are more likely to adopt best-bet management practices such as establishing perennial pastures, involvement with farm or property planning, tree planting, soil testing and applying lime.

To be effective Community Landcare's emphasis on changing individual behaviour needs to be matched with structural change to remove broader institutional barriers to sustainable resource management such as farm viability, land tenure systems, water allocations and vegetation clearing.

Landcare had been effective in obtaining outside resources and in creating conditions for people to solve resource management issues in a reasonable manner, but it is possible that more powerful individuals and communities accessed a greater share of community resources.

A wide range of best-bet practices have been developed as a result of activity directly funded by the National Landcare Program and has been published conventionally and on the world wide web.

Comparison of 1984 and 1996 Australian Bureau of Agricultural and Resource Economics data on land management perceptions and action (percentage of positive replies).

Question	1983-84	1995-96
Do you view your land degradation as a problem or as a potential problem?	37.4	83
Do you have a farm plan specifically designed to combat land degradation?	25.1	61
Have you undertaken management practices (e.g. crop rotation) specifically for combating soil erosion?	28.6	77
Have you undertake capital works specifically for combating land degradation?	28.6	75

About 34% of Australian broadacre and dairy farms now have a representative in a Landcare group. In the wheat-sheep zone and the pastoral zone, nearly 40% of all properties had at least one Landcare member in 1995-96. In some areas about 50% of farmers are members of Landcare groups.

There are more Landcare groups located in areas where there is a greater risk of land degradation.

The group activities Landcare members valued most highly are information exchange at field days and meetings, and tree and shrub establishment. Conservation activity, monitoring of local land and water quality and access to farm management information are also considered to be valuable aspects of Landcare.

Farmers in the Lachlan valley valued Landcare for some group activities with strong off-farm implications but they did not see those Landcare activities as relevant to land management issues which were internal to their farms.

Landcare membership is positively correlated with the adoption of monitoring watertables by mixed livestock and cropping enterprises and preservation of areas of conservation value as farm management practices. The adoption of other best farm management practices is correlated with participation in training.

The national proportion of those who had left a Landcare group has remained very low but there is some evidence that members become less active after four or five years in a group. In Western Australia where Landcare grew earlier than most other States the proportion of members who have left recently is 9%.

It may still be possible for the number of Landcare groups to grow if groups can be established to include the 20% of non-members who say they have no local group or no opportunity to join one.

In most States, nearly 40 per cent of farmers say they do not have time to join a Landcare group.

Program Theme 3: Assistance for Individual Land Managers

Goals

Encourage landowners to accept principal responsibility for dealing with their land degradation problems by adopting preventive or corrective measures.

Encourage the adequate provision of opportunities and facilities for training farmers and farm workers in Landcare theory and practice, including through their access to skilled advisers and extension workers.

Outcomes

Farmers who are members of Landcare groups tend to operate larger farms, with less intensive cropping and more livestock compared to those who have not joined.

Landcare members have higher levels of farm cash income, farm debt and capital invested in their property plus a higher rate of return to farm business capital.

More Landcare members have a farm plan, do more training, use a wider range of farm management information sources and adopt a larger proportion of best farm management practices.

Fifty six per cent of broadacre and dairy farmers used Landcare groups as a source of farm management information. This is higher than the level of Landcare membership, indicating that non-members also use Landcare groups as a source of farm management information.

Eighty one per cent of Landcare members had participated in at least one training activity during the period 1993-94 to 1995-96 compared with 47% of non-members.

Fifty four per cent of farmer members of Landcare groups had a farm plan compared with 26% of non-members. 84% of all those with a plan use it to make development decisions.

At the property level, the property management planning (PMP) program had benefited almost all participants at both the personal and the management level, helping them develop an integrated planning approach to the operation of their property. At the community level, property management planning has developed a series of linkages which have increased cooperation between organisations serving producers and provided a network for information exchange.

To achieve the desired target of 50% producer involvement by 2001, property management planning needs to be marketed to the specific needs of producers, based on more precise definitions of target audiences, and property management planning processes or products adjusted to meet these needs.

In the wheat-sheep and high rainfall zones, Landcare members are more likely to adopt best farm management practices than are non-members. In the pastoral zone, although the adoption of specific best management practices appears to be higher, this difference is not statistically significant.

Adoption of conservation tillage practices:
percentage of 1995-96 crop sown using different practices.

	Non-Landcare	Landcare
Direct drilling	15	22
Minimum or reduced tillage	29	31
Traditional cultivation	57	46

The Australian Bureau of Agricultural and Resource Economics (Mues, Chapman and Van Hilst, 1998) concluded that there is a general association between participation in some Landcare related activities and programs, and the National Landcare Program's target outcomes, although it was not possible to identify a causal relationship between Landcare programs and the performance indicators for the National Landcare Program as a whole.

Eligible primary producers can claim either the tax deductions for Landcare or a tax rebate of 34 cents in the dollar that can be carried forward. The rebate is available to primary producers with taxable incomes of no more than \$20 700 a year, who can claim the rebate for expenditures of up to \$10 000 a year. About 70 per cent of primary producers are expected to be eligible for the rebate, which is available for expenditures made between 1 July 1997 and 30 June 2001.

In 1989-90 the National Soil Conservation Program was used to fund a review of the Commonwealth Drought Policy. As a result of this review the Commonwealth policy changed from one of funding drought relief as part of the Commonwealth-State natural disaster relief arrangements to a policy of ensuring that landholders managed drought as a normal operating risk.

The Drought Landcare Program (DLP) was a specific program established as part of the National Landcare Program in 1994-95 in response to severe drought conditions in eastern Australia. The Drought Landcare Program generally met its overall objectives of:

1. stimulating on-ground Landcare activity to protect the land, water, vegetation resource base and environmental and cultural heritage from the effects of drought, and
2. helping in the management of these resources during recovery from drought.

The Drought Landcare Program was judged to have added 8% to total capital expenditure on land and water management by participating landholders.

Program Theme 4: Public Land Program

Goal

Ensure that the activities of all Commonwealth agencies meet State, Territory and local government land management standards

- if there are highly specialised land uses the Commonwealth will develop and implement its own standards in liaison with State land management authorities.

Outcomes

Progress had been made in implementing the legal requirements for management plans although more remained to be done.

There was some evidence that the implementation of management strategies, e.g. by Defence, was producing some benefits in terms of rehabilitation of degraded resources. At the same time, aspects such as the coordination of management across public and private land needed further attention.

The performance across agencies was variable and continuing effort was needed to provide information and encouragement to improve performance.

Indigenous land management facilitators were appointed in 1998.

Program Theme 5: Legislative and Land Use Policy Review

Goals

Identify, in association with the States and Territories and other land managers, the constraints to sustainable land management and take appropriate steps to address those constraints.

Integrate and coordinate Commonwealth and State policies and programs for management of land and related water and forest resources:

- where appropriate through cooperation between Commonwealth, State and Territory ministerial councils responsible for agriculture soil water and forestry.

Develop and implement a national weeds strategy and a national feral animal control strategy which aims to bring these problems to a point where they can be managed properly.

Outcomes

The establishment of partnership agreements provided the opportunity for the Commonwealth to make National Landcare Program funding conditional on the States adopting an integrated regional approach to land and water management planning.

The Commonwealth insisted that regional projects contained a component addressing institutional constraints on achieving sustainable natural resource management.

This insistence has required the States to institute organisational and legislative frameworks which encourage the adoption of sustainable natural resource management. These changes have included reforms so that leasing and charging arrangements provide clearer signals on the consequences of bad management.

National Landcare Program funding for floodplain management activity concentrates on avoiding flood risks through improving floodplain management and improving community awareness and acceptance of locally appropriate risks. Responsibility for Commonwealth funding for flood mitigation work has been passed to the Regional Flood Mitigation Program within the Department of Transport and Regional Services

National Landcare Program assistance for floodplain management has encouraged the integration of floodplain management with catchment planning in Victoria and land use planning in New South Wales.

The National Landcare Program has worked with the Bureau of Meteorology to provide flood-warning services.

There are coherent national strategies now in place for the management of significant vertebrate pests based on thorough biological reviews and implemented with significant community involvement.

A major review of tree planting funded by the National Landcare Program indicated that tree planting efforts so far were on too small a scale to be effective on anything other than a local scale (a few to 100 ha). In southern Australia, many catchments would require tree cover of at least 30% to stabilise or ameliorate degradation. The health of Australia's catchments is proportional to area of the catchment under trees.

While the scale of replanting is daunting, there appear to be few other options at present. Control of salt load in southern Australian river systems may take hundreds of years and it is possible that the damage is so great that it is effectively irreversible.

Program Theme 6: Education and Awareness

Goals

Educate the community about the nature of ecologically sustainable development and sustainable land use so individual land users and the Australian community can assume their responsibilities for controlling land degradation.

Maintain Landcare as a public issue throughout the decade and attract individual, private sector and government support for individual and community based action.

In cooperation with the States and Territories develop and implement a national awareness campaign and training program on chemical use in agriculture.

Encourage the inclusion of Landcare and related subjects in the primary and secondary curriculums, together with suitable material for teaching these courses.

Outcomes

The success of most education and training projects, the changes toward more education on sustainable management of natural resources, the observed relationship between training and sustainable farm practice, all suggest that the National Soil Conservation Program and the National Landcare Program had progressed education and training toward supporting the overall goal that land and water resources be managed in a sustainable manner.

The relative concern of the general population about damage to soil dropped in priority between 1988 and 1995 with the relative concern about protecting rare plants and animals increasing between 1988 and 1995.

In 1995 farmers and those living in non-metropolitan areas were more likely to express concern for damage to soil and land degradation than their city counterparts.

Nearly two thirds (63%) of respondents to the 1995 survey had observed damage to soil resources in Australia as against 57% in 1988.

The 1995 survey indicated that almost all the population was aware of specific types of soil degradation with 94% having heard of soil erosion and 80% having heard of soil salinity. Comparison with the 1988 survey showed an increase of about 10% in awareness of damage to soils and resources.

Farmers were slightly less aware of a few types of resource degradation such as tree and vegetation loss and chemical build up in soils than other occupations such as managers and clerical workers.

Forty-three per cent of farmers hold that in rural areas, landowners should be mainly responsible for managing their natural resources. People in non-farm occupational groups, including 38% of those in profession and management occupations, are more likely to say that the Federal Government should be mainly responsible for control of damage to natural resources in rural areas.

Perceptions of the effectiveness of natural resource management methods as being very or somewhat effective.

Source: AGB McNair 1996

	Farmers	Rest of the population
Promoting sustainable agriculture	91%	76%
Financial incentives to farmers	88%	72%
Better land use planning	87%	81%
More education in towns and cities	86%	80%
Implementing catchment management	84%	72%
More research	83%	76%
More advice to farmers and graziers	71%	74%
More legislation	45%	55%

Sixty four per cent of people think that local government should be responsible for controlling damage to natural resources in urban areas, 28% think landowners should have this role.

The proportion of the population, which agreed that landowners were primarily responsible for managing their own land sustainably, had fallen between 1988 and 1995 from 36% to 23%. The proportion that believed that the Commonwealth government should be responsible increased from 19% to 31%.

Overall 77% of respondents in the 1995 survey had heard of Landcare. People from country areas (91%) were more likely to have heard of Landcare than those from metropolitan areas (68%). People from Sydney, Melbourne and Perth were least likely to have heard of Landcare.

Awareness of Landcare was significantly higher in the Northern Territory, Tasmania and the Australian Capital Territory, than in New South Wales, Victoria and Queensland.

Farmers had the highest awareness of Landcare (96%). Eighty four per cent of students had heard of Landcare with all other occupations' awareness below 80%.

Figures collected for Landcare Australia Limited indicate that the percentage of the population which had heard of Landcare had risen from 22% in 1991 to 69.3% in 1997. In rural Australia 39.6% had heard of Landcare in 1991 rising to 79.6% in 1997.

Training in chemical usage has been addressed by programs other than the National Landcare Program.

The Commonwealth had encouraged the inclusion of Landcare topics in school education by supporting production of teaching materials, training teachers in their use and supporting officers involved in designing curriculums. Changes in the education system since the Commonwealth began encouraging Landcare education in the mid 1980s have produced opportunities for most school students to receive instruction in Landcare related topics. Evaluations of State Decade of Landcare Plans indicate that primary, secondary, and technical and further education (TAFE) sectors were delivering Landcare education.

Program Theme 7: Resource Assessment

Goals

Promote the use of land resource data through encouraging the development and use of information technology to facilitate communication between land managers, Landcare groups, governments and other organisations.

Contribute to national land resource assessment by encouraging the development and use of agreed data standards and by ensuring that relevant information is readily available to users.

Outcomes

Commonwealth funding has contributed to improvements in State capacity and coverage. It has established arrangements which have improved the availability and quality of natural resources data, through funding the Australian Collaborative Land Evaluation Program (ACLEP) and the Land and Water Resources Research and Development Corporation (LWRRDC). The Bureau of Resource Sciences (BRS), National Resources Information Centre (NRIC), Environmental Resources Information Network (ERIN) and Murray-Darling Basin Commission (MDBC) have all improved the quality and availability of data at the national level.

The Australian Collaborative Land Evaluation Program has made substantial progress with the development of standards and standard approaches in land resource assessment and in fostering communication within the land resource assessment community and, to a lesser extent communication about land resource assessment and its applications outside the traditional groups. Weaknesses included halting progress towards the soil reference sites and the lack of a clear vision about encouraging research into new methods of land resource assessments.

The second phase of the Australian Collaborative Land Evaluation Program should give priority to upgrading the documentation of land resource assessment methods and developing guidelines and criteria for land evaluation. Further research and development into methods of land resource assessment which improve both the objectivity and predictability of assessments and the predictability of the impacts of use are required.

The environments most frequently monitored by community groups were (in descending order): rivers and streams, remnant vegetation, parks, reserves and roadsides, farmlands, wetlands, cities and towns, lakes and ponds, sea estuary and shore, grasslands, groundwater.

Community groups most often used their results for education followed by local planning, recommendations, shared in a network, habitat restoration, research, as a performance indicator, catchment plans, filed only.

Organisations using the data collected by community groups were (most to least frequently): community groups, State government, local government, catchment groups, universities, Federal Government.

Group members and donations provided 33% of group funds, State governments provided 25%, the Federal Government provided 24%, corporates provided 9%, local government provided 8% and philanthropic trusts provided 1% of funding for the monitoring activities of community groups.

The majority of groups felt they were achieving their goals.

Program Theme 8: Research and Development

Goals

Promote a nationally integrated research and development program covering scientific, technical, economic and social aspects to support sustainable land use.

Ensure that Landcare policies and programs take account of likely effects of climate change.

Outcomes

The combined total of research funds provided to the Land and Water Resources Research and Development Corporation and to Commonwealth research agencies from the National Landcare Program over the period 1990-91 to 1996-97 was \$74.9 million.

The Land and Water Resources Research and Development Corporation provides a structure which enables the identification of national research and development priorities, and encourages integrated research into natural resource management issues through arrangements which bring together funding and expertise from a variety of Commonwealth, industry, State resource agency and university sources to address issues of mutual concern.

Performance evaluations reported in the 1997-98 annual report indicate the Land and Water Resources Research and Development Corporation's research projects are achieving favourable benefit cost ratios of 12.4:1

A 1998 survey of stakeholders indicates that the Land and Water Resources Research and Development Corporation is 'pleasing all of its stakeholders most of the time'.

The Commonwealth's Agriculture Fisheries and Forestry portfolio has also maintained its own research effort through the Australian Bureau of Agricultural and Resource Economics, the Australian Geological Survey Organisation and the Bureau of Resource Sciences. The National Landcare Program funded activity by those organisations which was used to develop Landcare policy, or to provide management tools or information on program outcomes or resource status.

The Commonwealth Scientific and Industrial Research Organisation (CSIRO) has maintained its funding from budget appropriations for its environmental activities at about 22% of total

appropriations from 1993 to 1997. Its current strategic plan envisages this proportion dropping to 19% over the 1998-2000 period. Benefit cost ratios of the Organisation's research projects typically range from 4:1 to 8:1.

There was no material available which showed how Landcare policies and programs take account of climate change.