National Dryland Salinity Program Management Plan 1998–2003

The National Dryland Salinity Program is a national initiative jointly sponsored by the Commonwealth Government and the State Governments of Australia, and Australia's leading rural industries.

NATIONAL DRYLAND SALINITY PROGRAM

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Introduction

The National Dryland Salinity Program (NDSP) was established in July of 1993 as a means of improving the coordination of Australia's research, development and extension (R,D&E) effort directed towards better management of dryland salinity across rural Australia. The first phase of the program was completed in June 1998.

Since the establishment of the NDSP, the impacts of dryland salinity have become better appreciated. It has long been known that salinity threatens the viability of many Australian agricultural enterprises. However, it is only since the establishment of the NDSP that there is now also a better understanding of the extent to which rural infrastructure (roads, buildings and properties), environmental resources (native vegetation, wetlands, flora and fauna), and access to quality water supplies are threatened. The impact of salinity is felt hard by rural communities in many regions of Australia, and is being felt increasingly throughout urban Australia as well.

In response to the need to address more fully the issues of dryland salinity, and to hasten the communication and adoption of the lessons of the NDSP, a second phase of the program has been established. This phase will endeavor to support:

- a wide range of communication activities, with an initial focus on extending outputs from the first phase of the NDSP;
- research to better understand the complex interrelationship between managed ecosystems, rural landscapes and hydrogeological systems;
- research, development and extension to provide options for improved management of landscapes threatened by salinisation to maintain their potential for productive use and biodiversity conservation;
- research, development and extension to further develop understanding, and demonstrate principles and practices, that enable the beneficial use or rehabilitation of salinised landscape resources;
- research and development to provide options for creation of economic, social, institutional or legal incentives or mechanisms that encourage prevention of salinity and management of its impacts; and
- research, development and extension to improve understanding of principles, and demonstrate the practices, that address the causes, costs and consequences of salinity as it relates to industry, biodiversity, regional communities and governments.

The second phase of the NDSP remains an R,D&E program. The investment targets development of understanding and tools which will support on-ground works financed by other programs such as the Salinity Action Plan in WA, Salt Action in NSW and Victoria, and components of the Natural Heritage Trust such as Bushcare and Landcare. It will also target the adoption of best management practices by land managers. Partnerships with industry groups will provide opportunities to access important extension networks to communicate with farmers and other stakeholders.

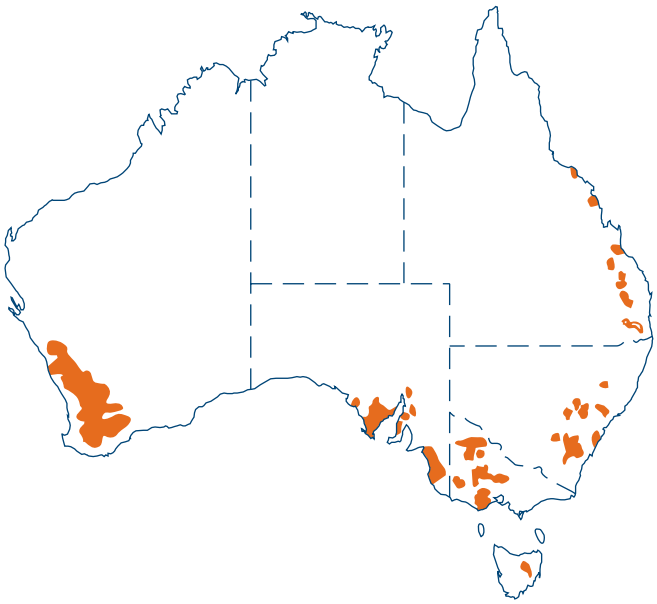
This Management Plan describes in general terms how the program will achieve its goal, provides detailed information about the program's objectives, strategies, management and operation as the basis for interaction with clients and stakeholders, and provides the means for assessing the program's progress towards achieving its aim and objectives.

Above all, the Management Plan is intended to provide a framework for facilitating cooperation and collaboration between all groups and organisations involved in, or wishing to become involved in, the prevention and management of dryland salinity.

The challenge

Extent of dryland salinity in Australia

Dryland salinity is a major threat in many parts of Australia. It is estimated that about 2.5 million ha of land is affected and that there is a potential for this to increase to 12 million ha. This area represents approximately 4.5% of presently cultivated land and is costing in the vicinity of $130 million annually in lost agricultural production, $100 million annually in damage to infrastructure, and at least $40 million in loss of environmental assets.



Area of land reported to be affected by salinity in Australia

(Figures are best approximations due to limitations in some data)

State	Area salt-affected in 1996 (ha)	Potential salt-affected area at equilibrium (ha)*
WA	1,804,000	6,109,000
SA	402,000	600,000
VIC	120,000	Unknown
NSW	120,000	5,000,000
TAS	20,000	Unknown
QLD	10,000	74,000
NT	Minor	Unknown
Total	**2,476,000**	**>11,783,000**

* Revised by National Dryland Salinity Program State Representatives (WA, 1996)

In Western Australia the existing 1.8 million ha of salt-affected farmland could easily double in the next 20 years or so, and then double again before an equilibrium state is reached. Of the State's divertible water resources, 36 percent is brackish or saline and a further 16 percent is of marginal quality.

All principal agricultural districts in South Australia exhibit some degree of dryland salinity and at least 20 percent of the surface water resources are more saline than the recommended limits for human consumption.

The present estimates of dryland salinity in Victoria may well increase substantially as more detailed mapping is continued. In New South Wales as much as 5 million ha could be affected in the future as groundwaters rise in areas underlain by Ordovician meta-sediments with yellow and red texture contrast soils.

The Queensland estimate of 10,000 ha of salt affected land refers to severe salting. Dryland salinity is an emerging issue in both Queensland and Tasmania.

Impact of dryland salinity in Australia

Agricultural costs

Agricultural costs are frequently expressed in terms of the value of lost production, estimated to be at least $130 million annually, but a more fundamental concern is the cost of protecting land and surface waters from salinisation, something which has not been well valued. Many industries are impacted by dryland salinity, particularly the grains and grazing industries. In many instances, salinity may threaten entire farm enterprises. The nature of salinisation, however, means that industries must take whole-of-property and regional approaches to solutions.

In some cases, salinisation has reached thresholds where the only practical management of affected lands is to use them productively as a saline resource. In these cases, opportunities are presented for new industries that can profitably use saline resources while preventing further downstream degradation.

Stream salinity

Throughout the Murray–Darling Basin there is a rising trend of salt concentrations in many streams, particularly in the southern half of the Drainage Division.

Presently the Murray Drainage Basin exports 3 times the amount of salt that is input from the atmosphere whilst the Darling Basin is closer to a 1:1 ratio. The large imbalance between input and output of salt in the Basin is a direct reflection of increasing groundwater pressures in that area and the consequent increase in groundwater discharge to the soil surface and into streams. This situation has tremendous consequences for the water supply for downstream townships and cities.

Offsite effects

Very few sectors of Australian society are not affected by salinity at least indirectly. Offsite effects of salinity are usually encountered through water quality. Industries that may be affected include:

- Water and waste water (water supply and treatment)
- Information and education (dissemination of salinity information)
- Energy (coal mining, electricity generation)
- Communications (telephone cables)
- Supply infrastructure (gas pipelines)
- Science and technology (salinity research)
- Production economics (farm costs)
- Finance (banks)
- Infrastructure (Local Government)
- Housing (urban salinity)
- Transport (roads)
- Tourism (National Parks)
- Trade (marketing organisations)
- Government planning (regional and economic development)
- Heavy industry (steel, aluminium, paper)
- Cultural (including Aboriginal)

Local government, public utilities and government agencies

Councils and public works departments may find it difficult to separate out the proportion of their repair costs due to salinity as compared with 'normal' maintenance costs, but it is acknowledged that road and bridge damage caused by salinity is a major concern.

In the south-western region of NSW alone, road damage due to high water tables is costing about $9 million per year. It is thought that approximately 34 per cent of state roads and 21 per cent of national highways are affected in this way.

The nature and extent of costs that salinity poses to local governments and public utilities across many parts of Australia are exemplified by the situation in Wagga Wagga, NSW:

Annual Recurring Costs of Salinity in Wagga Wagga

Item	Annual Costs (1994–95 $)
Roads	226,000
Footpaths	4,400
Parks	103,400
Sewage pipes	29,600
Housing—severely affected	22,500
Housing—minor to moderate	50,000
Industrial	6,000
TOTAL	$ 442,500

Declining incomes within regions affected by salinity also have significant social and economic consequences, which strain the services available to the rural population. A reduced ratings base can exacerbate problems faced, or being addressed, by shire councils.

Urban household costs

There are a considerable number of areas where saline water and high water tables could impact on urban households, for example:

- damage to septic tanks
- damage to hot water systems and other household appliances
- increased use of soaps, detergents and water softeners
- reduced life of clothing
- damage to vehicle radiators
- damage to buildings
- damage to water and gas supply pipes and fittings
- damage to gardens, lawns, pot plants etc.

Environmental costs

Salinity poses a major threat to many environmental assets, including:

- remnant vegetation
- fauna and flora diversity
- riparian vegetation
- wetlands
- fish, bird and animal habitats

Many of the costs associated with the environment are difficult to quantify, although novel benefit cost analyses undertaken in South Australia cost the loss of one particular wetland at $20 million.

Addressing the challenge

The NDSP was established in 1993 because a national problem, as presented by dryland salinity in Australia, demanded a national approach. Research and development (R&D) in the first phase has greatly expanded understanding of the processes of dryland salinity and of their management. Some of the key messages derived from outcomes of the first phase are presented on the inside back cover of this plan.

The second phase of the NDSP intends to build on the work undertaken in the first phase to address knowledge gaps in the use and rehabilitation of salinised land and water resources. The second phase also intends to facilitate action to prevent and manage dryland salinity. In planning for the second phase, it has been recognised that:

- there is great urgency in the need to address the impacts of dryland salinity on biodiversity, agricultural production, public and private infrastructure, and regional and rural communities;
- investors in on-ground works that manage dryland salinity need further R,D&E to improve the effectiveness of their work;
- communication and extension activities should facilitate transfer of lessons learnt from the focus catchments involved in phase one;
- the present operating environment does not adequately encourage adoption of best practice management for dryland salinity;
- some parts of the landscape are irreversibly affected by salinity, so new uses and management practices must be developed for these salinised resources; and
- there are still significant knowledge gaps in the complex interrelationship between managed ecosystems, rural landscapes and hydrogeological systems.

To address this challenge, a clear goal and commitment of the NSDP in its second phase is required:

NDSP goal

The National Dryland Salinity Program will research, develop and extend practical approaches to effectively manage dryland salinity across Australia.

Action statement

The NDSP is committed to the strategic investment of funds into dryland salinity research, development and extension (R,D&E) that will improve the management of landscapes by focusing on:

- causes, costs and solutions
- institutional arrangements
- management of saline landscapes
- landscape ecosystems and processes

and by ensuring that:

- there is a framework for stakeholders to invest collaboratively and efficiently in addressing dryland salinity
- the program takes a national leadership role that will ensure the investments address priority areas and issues
- investment targets the development of tools that facilitate the adoption of solutions via catchment-scale planning processes
- a clear communication and extension pathway exists for products and services arising from program activities
- linkages with other relevant initiatives and programs are facilitated.

Objectives, strategies and performance indicators

Objective 1: Institutional arrangements

To develop options for operating environments which encourage the prevention of dryland salinity and the appropriate management of its impacts.

Specific challenge

The NDSP recognises the importance of the operating environment in determining how quickly land and water resource managers change the way they do things to address salinity and its impacts. The operating environment includes the ways government agencies and local government are organised and communicate between themselves; the way catchment groups operate; the regulations, incentives and market mechanisms which influence decision making by resource managers; and the relationship between investors, researchers, and communities who live and work in catchments at risk from salinity and its impacts. This objective addresses tradeoffs between best practice management and doing nothing. It recognises the urgency of the salinity problem in Australia and aims to provide understanding and tools which help catchment groups, landholders, resource managers and those with an interest in natural resource management choose the best balance between competing resource use interests to minimise the cost of salinity and its impacts.

Strategies

Strategy 1.1 Develop understanding of institutional, social and economic processes which determine resource management behavior affecting dryland salinity and its off-site and on-site impacts in selected landscapes under typical land uses.

Strategy 1.2 Identify and develop new institutional arrangements and economic instruments that enable management of dryland salinity and its impacts.

Strategy 1.3 Develop principles and practices that help catchment communities become more self reliant in design and implementation of salinity management plans.

Strategy 1.4 Communicate institutional, economic and policy instruments that improve the operating environment for management of dryland salinity and its impacts.

Strategy 1.5 Increase understanding of the causes and extent of dryland salinity, and options for its prevention and management, amongst regional and national decision makers, elected leaders and opinion shapers to improve investment in natural resource management.

Strategy 1.6 Improve the extension systems that deliver knowledge through a mix of public and private service providers.

Performance indicators

1. Catchment communities are more self-reliant.
2. Salinity management is a recognised component of catchment management strategies.
3. Stakeholders better understand options and practices available for implementation.
4. New institutional arrangements and economic instruments are developed and promoted.
5. Salinity management investments are coordinated.
6. Local government actively manages dryland salinity and its impacts.
7. Community leaders better understand causes and extent of dryland salinity, and options for its management.

Objective 2: Causes, costs and consequences

To develop understanding and demonstrate principles and practices to address the causes, costs and consequences of dryland salinity.

Specific challenge

This objective addresses the causes and symptoms of dryland salinity including off-site impacts such as salinisation of habitat, streams and waterways. The focus is on management of recharge and salinisation processes to reduce the costs and consequences of salinity to the environment, to primary producers and to regional communities. Strategies and actions under this objective build on the work of the first phase and emphasise extension and participatory R&D activities.

Strategies

Strategy 2.1 Review and communicate the lessons learned from the Focus Catchments of phase one, and other knowledge, which reduce the costs and consequences of salinity.

Strategy 2.2 Develop, research, trial and demonstrate practices to prevent and improve management of dryland salinity and its impacts.

Strategy 2.3 Trial and further research and develop practices to monitor change in the costs and consequences of dryland salinity.

Strategy 2.4 Develop and promote understanding of the costs and consequences of salinity on land and water resource management.

Strategy 2.5 Use trials, demonstrations, and training manuals of best management practice to support activities managing the costs and consequences of dryland salinity.

Performance indicators

1. Options for prevention and management of dryland salinity are incorporated into catchment and property management plans.
2. Practices to improve management of salinity are available for implementation.
3. Networks of extension providers support understanding and implementation of salinity management.
4. Practices to monitor change in salinity are available for implementation.
5. Resource managers understand the costs and consequences of dryland salinity.
6. Benefits from prevention and management of dryland salinity are understood by resource managers, local government and decision-makers.
7. Information is transferred from NDSP projects to wider community stakeholders.

Objective 3: Management of saline resources

To develop an understanding, and demonstrate principles and practices, which enable the beneficial use or rehabilitation of landscape resources impacted by dryland salinity.

Specific challenge

This objective recognises that some parts of the landscape are, or will become, salinised beyond repair and that they are a new resource that we should understand and use for the benefit of the community. Strategies and actions under this objective deal with existing uses such as saltland agronomy, aquaculture and biodiversity conservation, and allow for identification and development of new enterprises which might have biodiversity conservation, export or other economic value. Collaborative R&D with industry groups will be important components of actions under this objective.

Strategies

Strategy 3.1 Review Australian and international knowledge relating to beneficial use and rehabilitation of salinised resources.

Strategy 3.2 Develop, research, trial and demonstrate best management practices for use or rehabilitation of salinised resources with new and existing industries.

Strategy 3.3 Develop, trial and demonstrate beneficial use and rehabilitation of salinised resources for biodiversity conservation.

Strategy 3.4 Develop and trial practices to rehabilitate and manage infrastructure threatened by salinity and its impacts.

Strategy 3.5 Use trials, demonstrations, and training manuals of best management practice to support beneficial use or rehabilitation of salinised resources in rainfed areas.

Performance Indicators

1. Resource managers make beneficial use of salinised landscape resources.
2. Knowledge on beneficial use of salinised landscape resources is available.
3. Best management practices for use of salinised landscape resources are used by resource managers.
4. Some salinised landscape resources are used for biodiversity conservation.
5. Practices to manage infrastructure threatened by salinity are used by infrastructure owners and managers.

Objective 4: Landscape processes

To develop an understanding of landscape processes and ecosystem functions in areas affected by, or at risk from, high watertables and salinity.

Specific challenge

This objective addresses principles and scientific knowledge which underpins national frameworks for investment in management of dryland salinity. Strategies and activities under this objective deal with both recharge and discharge areas, and specifically look at the linkages between biodiversity conservation, use of land and water resources for primary production, and amenity values from resources threatened by salinisation.

Strategies

Strategy 4.1 Investigate the landscape processes and ecosystem functions, which determine water use and movement in selected landscapes under typical land uses.

Strategy 4.2 Use understanding of landscape processes and ecosystem functions to predict the impact of doing nothing and of different resource management options on land, water and biodiversity resources.

Strategy 4.3 Trial and further develop tools for assessing watertable salinity risks.

Strategy 4.4 Develop watertable salinity management components in quality assurance (QA) pathways for rainfed production systems.

Performance Indicators

1. Landscape processes and ecosystem functions which determine water use and movement are understood.
2. The impact of doing nothing is quantified for regions at risk from salinity.
3. The impact of best management practices to prevent and manage dryland salinity are quantified and understood by stakeholders.
4. Tools for assessing salinity risks are widely used by resource managers.
5. QA pathways for rainfed production systems include components for prevention and management of salinity.

Themes addressed by the NDSP

In addressing the objectives and strategies set out above, a number of themes emerge which address the specific concerns of certain stakeholder groups or which have particular coordination needs. In some cases these themes are directly aligned to program objectives, while in other cases they cut across several objectives and strategies. The themes will be used for reporting purposes and they will provide a framework that special interest stakeholders can use to target their investments.

Theme One — Audit and monitoring

The extent and rate of change in dryland salinity and its impacts at regional and national scales is needed to support decision making and priority setting. Several NDSP activities aim to complement the National Land and Water Resources Audit dryland salinity work plan.

Theme Two — Policy and operating environment

Many activities aim to contribute biophysical, economic, and social knowledge to support better policies, institutional structures and incentives that will encourage appropriate management of dryland salinity and its impacts at local, regional, state and national scales.

Theme Three — Grain and related industries

Of all industries impacted by dryland salinity, the grains industries are most under threat. At the same time, these industries are in a position to contribute significantly to the management of salinity for both industry profit and regional benefit. The Grains R&D Corporation will address industry issues under the framework of the NDSP.

Theme Four — New, emerging and other industries that use saline resources productively

In some parts of Australia, the productive use of saline lands is the only economically feasible option available. The NDSP provides a framework to foster support for new and emerging industries, or novel farming systems, which profitably use, or preferably assist the rehabilitation of salinised resources.

Theme Five — Environmental protection and rehabilitation

Many program activities aim to support the protection and management of biodiversity, habitat and landscape amenity values threatened by salinity and its impacts.

Theme Six — Infrastructure management

Program activities intend to support investigation into the effects of salinity on local government infrastructure and road, communications and water supply infrastructure.

Theme Seven — State, regional and community initiatives

As significant investors in the management of dryland salinity and its impacts, state governments are key stakeholders in the NDSP. They also provide valuable links to regional and community activities. The NDSP will provide a framework for state, regional and community activities to be networked nationally.

Themes as they relate to NDSP Objectives and Strategies

Themes	**Objectives**			
	Objective 1	**Objective 2**	**Objective 3**	**Objective 4**
Audit and monitoring	Strategy 1.5	Strategy 2.4		Strategies 4.2, 4.3
Policy and operating environment	Strategies 1.1, 1.2, 1.3, 1.4			Strategy 4.2
Grain and related industries	Strategy 1.6	Strategy 2.2	Strategies 3.1, 3.2	Strategy 4.4
New, emerging and other industries	Strategy 1.6		Strategies 3.1, 3.2	Strategy 4.4
Environmental protection and rehabilitation	Strategies 1.1, 1.4	Strategies 2.2, 2.5	Strategies 3.3, 3.5	Strategies 4.2, 4.3
Infrastructure management	Strategy 1.5	Strategies 2.1, 2.5	Strategy 3.4	
State, regional and community initiatives	Strategy 1.1	Strategy 2.3		Strategy 4.1

Communication strategy

Communication will be critical to the effectiveness of NDSP in delivering economically useful outcomes. In planning the second phase, it has been recognised that communication must be an integral component of all projects and an activity that encompasses all objectives and themes.

A national network of communication coordinators will develop and implement a Communication Strategy for the life of the second phase. This strategy will be a significant component of the program by ensuring that products and services developed to meet the program's objectives are delivered.

The focus of early communication activities must be the outputs of phase one—lessons learned from the five focus catchments and generic R&D activities which can be applied and adopted during the second phase. Longer-term communication activities will utilise the extension networks of industry and government program partners.

Communication will be important at several levels:

- Salinity management needs to take place on a catchment scale. Many catchment groups are embarking on integrated catchment management plans of which salinity will be a component. Whilst all catchments are unique, each can benefit from the R&D findings in other catchments. In this way a community of informed land managers will evolve and expensive and discouraging mistakes will be avoided.
- The establishment of links with other significant natural resource management programs (eg. acid soils, vegetation decline, river health, etc) will result in mutual benefits.
- In some instances salinity will not be reversible. Land managers will need to be made aware of the options and opportunities for the productive use of saline landscapes, and have access to informed technical advice.
- Traditionally, salinity has been seen as a problem for agriculture and water resources. Increasingly there is an awareness of the consequences for urban communities and for service utilities.
- There are now some well established principles for best practice in predicting, assessing and managing dryland salinity. Extension providers and land managers must have easy access to this information.
- Communication will be a two-way process. It is not simply a matter of providing information, but also of collecting and transferring information on the needs and findings of all stakeholders.
- Important lessons must be communicated from those catchment groups and local governments who have successfully implemented salinity management plans. Consensus and commitment in communities which have developed successful implementation plans and cost sharing models should provide valuable empirical information for other groups.

- There must be sustained political commitment to preventing and managing dryland salinity. This requires that the general public be made and kept aware of the magnitude, trends and significance of dryland salinity, and understands the relationship between the cause and the effect. The public must also be able to witness the steps that are being taken to deal with the problem.

Proposed actions

In delivering the products and services developed by program activities, the Communication Strategy will:

- Service statewide and industry networks which could comprise leading land managers, catchment groups and boards, landcare groups, project officers, private and government extension providers, local government and staff, and students of natural resource management.
- Encourage the development of local networks of land managers with skills in particular aspects of salinity management at the local level.
- Assist communication across states to ensure a national approach can be taken when required, and to facilitate the flow of information between states and to enhance each state's communication program.
- Use a range of communication instruments such as newsletters, email updates, internet and personal contact, ensuring that the communication is a two-way process.
- Understand the regional salinity issues, including the operating environment that impinges upon land management decisions.
- Assess the different communication needs of those dealing with dryland salinity. The needs of, for example, an extension officer working full-time on salinity will be quite different to those of an agronomist and different again to the local government environment officer.
- Identify, acquire or prepare, and provide resources of interest to particular regions or stakeholder groups.
- Establish and maintain communication with relevant industry groups, policy makers, managers and regulators.
- Prepare and provide topical and informative media releases for rural, regional and state media.
- Liaise with the respective State salinity programs to determine and provide for the regional training needs of people working with salinity issues.

Program management

Investment principles

Funding of projects under the second phase of the NDSP will be based upon a number of important principles, including:

- activities supported will be subject to competitive processes, rigorous assessment and ongoing review;
- communication of knowledge and progress will be an integral component of all projects;
- all projects, where feasible, will have national, basin-wide or regional application;
- management of dryland salinity and its impacts will not be viewed in isolation from other resource management issues at catchment or regional scales;
- program outputs will include options, practices and principles which increase the confidence of resource manager's to design and implement beneficial landuse systems that manage dryland salinity and its impacts;
- the program will complement and, where possible, support state salinity management programs, local action plans, and catchment management plans; and
- R&D outputs will be interpreted and presented to meet the needs of different stakeholder groups including policy makers and opinion leaders, land and water resource managers, local government, state agencies and conservationists.

Based on benchmarks adopted by the NDSP, three project design and arrangement combinations are proposed for strategic allocation of phase two investment:

Multidisciplinary projects—projects that identify, develop, trial and communicate solutions to problems relating to each of the program objectives. These projects have a critical mass required to enable economies of scale and will be designed and managed in an integrated way with multi-disciplinary teams.

Targeted projects with specific outputs—projects that provide specialist information to enhance implementation of multidisciplinary projects as well as having wide application to activities in other catchments or regions. These projects are expected to be implemented in the early stages of phase two so that their outputs can be integrated with the multidisciplinary projects and be adopted by other land and water resource managers before the end of phase two.

Innovative Projects—it is important to provide an incentive for lateral thinking and new approaches in any R&D investment program. Up to 10 percent of the total available investment will be made available for projects that develop or trial new tools and lateral thinking directly linked to the program goal and objectives.

The role of partners

The second phase of the NDSP involves a number of partners who will invest funds or resources and contribute to the management of the program. These stakeholders will have particular interest in different elements of the program, and it is anticipated that other groups or organisations may wish to become partners during the course of the program.

There are four main groupings of partners:

Industry

Industry entities provide a critical link between research outcomes and decision makers on the ground, and they have an important role in managing the industry related themes of the program. Representatives of this grouping include Grains R&D Corporation and Rural Industries R&D Corporation.

Government

In addition to providing essential funding support for the program, these partners contribute to the roles of extension, policy development and program coordination. The grouping comprises the Governments of NSW, Victoria, Queensland, SA and WA and their agencies, Commonwealth Government departments and Federal agencies—Department of Primary Industries and Energy, Environment Australia, Murray Darling Basin Commission and Land and Water Resources R&D Corporation.

The program also aims to create opportunities for the involvement of local government.

Research organisations

There are many research organisations which can and will contribute to the program through the application of their scientific expertise. CSIRO has indicated that it will participate in the program as a partner and will contribute its unique national perspective to the technical components of the program.

Community

Unlike the first phase of the NDSP, the second phase will not limit its investment to specific Focus catchments. Landcare and catchment groups, catchment boards, local action planning groups, local government and individual land managers will participate in the program through:

- assistance with project selection;
- membership on steering committees which will be established for all projects;
- involvement in project and program reviews, including as review team members;
- annual stakeholder meetings of the program; and
- specific communication and extension networks to be used by the program.

Management structure

The NDSP will be coordinated through two national bodies:

A **Management Board** with responsibility to:

- develop policy, strategies and priorities for the achievement of program goals and objectives as enunciated in the NDSP Management Plan;
- approve and establish program R,D&E activities and ensure that they satisfy program goals and objectives;
- consider reports of the Operations Committee on the progress of program R,D&E activities;
- facilitate the integration of, and collaboration between, industry, local, state and national salinity management efforts;
- ensure program investments meet the interests of partner organisations;
- seek new partnerships which meet the goals and objectives of the program;
- monitor and evaluate the effectiveness of the program;
- approve annual budgets of the pooled component of program accounts; and
- approve an annual report of the program.

Board membership will comprise major investors in the program whose contribution, financial or in-kind, is:

- recognised as being essential to achieve the goals and objectives of the program at industry, state and national levels; and
- willingly offered in the spirit of collaboration required to achieve the goals and objectives of the program at industry, state and national levels.

New partners will be welcome to join the Board where they meet the above criteria.

An **Operations Committee** with responsibility to:

- make recommendations to the Board on R,D&E activities which should be supported under the program;
- ensure program R,D&E activities remain technically sound;
- facilitate the coordination of R,D&E activities within and across program partners and themes;
- monitor and evaluate the technical effectiveness of the program;
- advise the Board on the progress of program R,D&E activities;
- facilitate the exchange of knowledge and training nationally between regions and industries;
- develop strategies for the communication of program R,D&E, including coordination of national workshops and newsletters; and
- develop linkages between the R,D&E activities of the Program and on-ground works supported through other programs; and
- assess results and their implications, and make recommendations to the NDSP Board and program partners on consequent action.

Program coordination

The program secretariat will reside with the Land and Water Resources R&D Corporation, which will service the Program Board through the provision of a Program Manager, budgeting and accounts records and an automated project management system.

Some of the program's Themes will have a specific Theme Coordinator provided by a lead agency in the area concerned. For example, the Grains R&D Corporation will provide coordination arrangements through a Theme Coordinator for the Grains Industry Theme.

A part-time National Coordinator will be appointed as the first point of contact for those wishing to interact with the program.

NDSP goal

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Action statement

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- a clear communication and extension pathway exists for products and services arising from program activities
- linkages with other relevant initiatives and programs are facilitated.

Key messages

Dryland salinity is a major landuse issue in Australia and needs immediate action with regards its identification, prediction and management.

Dryland salinity is a complex issue. In some instances, it will not be feasible to control or reverse salinity problems and options need to be developed for living with salinity and managing saline landscapes productively.

Every salinity situation or catchment is different in terms of hydrology, soil type, climate and landuse, and there is no single recipe for every situation.

There is reliable information often available about "best management practices" suitable within catchments for identifying, predicting and managing many dryland salinity problems.

An integrated catchment management approach is needed to tackle dryland salinity problems, and this approach should rely on strong regional and industry networks and linkages.

Dryland salinity is a natural resource issue that needs to be considered in context with other natural resource issues such as river health, riparian management, soil acidity, erosion, and vegetation decline.

There needs to be both political and community participation in, and commitment to, preventing and managing dryland salinity.

Income from areas already affected by dryland salinity can be improved by selecting appropriate management options.

Arrangements for sharing investment costs between different stakeholders will be needed to ensure effective implementation of appropriate options for managing dryland salinity problems.

The NDSP's role is to bring together researchers from different organisations and fields to develop tools for the prevention and management of dryland salinity problems.

The NDSP involves a number of national, state and industry organisations working together to support ongoing R&D outcomes that deliver better solutions to the problems of dryland salinity.

Research has not yet revealed the optimal solutions to all dryland salinity problems, but can already provide a wealth of knowledge to improve the sustainability of industries affected by salinity.