ATTACHMENT A

Information on work being done by the Murray Darling Basin Initiative, National Dryland Salinity Program and the National Land and Water Resources Audit in addressing salinity in the Australian landscape

The Murray-Darling Basin Initiative

The Murray-Darling Basin *Initiative* is the partnership between governments and the community, which has been established to give effect to the 1992 Murray-Darling Basin Agreement. The purpose of the Agreement is 'to promote and co-ordinate effective planning and management for the equitable, efficient and sustainable use of the water, land and other environmental resources of the Murray-Darling Basin'.

The *Initiative* covers the watersheds of the Murray and Darling rivers, an area of over one million square kilometres. The Murray-Darling Basin Agreement was a recognition of the fact that no one government or group of people was able to deal with the Basin's emerging natural resource management problems and that the existing management arrangements were not able to cope with them. The involvement of the community is recognition of the fact that the task was not one that governments could fulfil on their own.

The Murray-Darling Basin Agreement was signed by the governments of the Commonwealth, New South Wales, Victoria, and South Australia in 1987, and revised in 1992. Queensland became a signatory in 1996, with the Australian Capital Territory being added in 1998. There are thus six formal partner governments in the Agreement, with many departments and agencies involved.

Key elements specified in the Agreement are:

- the Murray-Darling Basin Ministerial Council, the *Initiative*'s decision-making forum
- the Murray-Darling Basin Commission, the executive arm of the Ministerial Council which advises the Council and carries out its decisions.
- the Community Advisory Committee, which provides the Ministerial Council with advice and provides a communication channel between the Council and the community.

Basin Salinity Management Strategy (BSMS)

The Basin Salinity Management Strategy (BSMS) is a 15 year strategy to guide communities and governments in working together to control salinity in the Basin and protect key natural resource values within their catchments. It establishes targets for the river salinity of each major tributary valley, and the Murray-Darling system itself, that reflect the shared responsibility for action both between valley communities and between States.

A key feature of the fifteen-year Basin Salinity Management Strategy is the adoption by the Ministerial Council, of end-of-valley salinity targets for each tributary catchment and a Basin target at Morgan in South Australia. The Basin target is to maintain the salinity at Morgan at less than 800 EC units (a measure of salinity concentration) for 95% of the time. The targets are a way of measuring the progress towards achieving the Strategy's key objectives of:

- maintaining the water quality of the shared water resources of the Murray and Darling Rivers;
- controlling the rise in salt loads in all tributary rivers of the Murray-Darling Basin;
- controlling land degradation and protecting important terrestrial ecosystems, productive farm land, cultural heritage and built infrastructure; and
- maximising net benefits from salinity control across the Basin.

Reporting

In November 2002, the MDBMC approved a revised Schedule C to the Murray-Darling Basin Agreement to implement the BSMS (Schedule C specifies the statutory requirements of the Strategy). Part VII of the Schedule requires that each partner government prepare an annual report on the progress of works and measures.

The Schedule also provides for the appointment of independent auditors (the Independent Audit Group for Salinity) for the purpose of carrying out an annual audit on the performance of the Murray-Darling Basin Commission and partner governments in implementing the BSMS. The Independent Audit Group for Salinity was appointed in January 2004.

The 2003-04 Report of the Audit Group identified very significant progress in BSMS implementation, including the:

- establishment of baseline conditions for salinity in each of the tributary valleys, and the River Murray;
- setting of end-of-valley targets by the jurisdictions;
- development and accreditation of a suite of models to evaluate salt loads in streams;
- establishment and use of protocols for assessing credits and debits of accountable actions;
- development of approaches to evaluate the impacts of water trades;
- establishment of salinity Registers;
- development of information systems to support irrigation and water use efficiencies (SA) and management systems to underpin overall investment and monitoring (Mallee CMA).

The Murray-Darling Basin Commission also produces a Basin Salinity Management Strategy Annual Implementation Report outlining progress in implementing the Strategy.

Salinity Registers

The MDBC maintains a Salinity Register to account for the salinity credits and debits resulting from projects that increase or decrease river salinity. The present 'credits' are derived from the construction and operation of salt interception schemes. At present, 'debits' result from activities such as construction of irrigation drains, groundwater pumps, new irrigation development and wetland flushing. The register is also used to record changes to operational policies and works that have an impact on river salinity.

Salt Interception Schemes

Salt interception works are large-scale groundwater pumping and drainage projects designed to divert saline groundwater flows from the Murray-Darling, and to dispose of them, usually by evaporation. These joint schemes contribute to the target of maintaining the salinity at Morgan at less than 800 EC units for 95% of the time.

Schemes constructed under the earlier Salinity and Drainage Strategy have resulted in a reduction of salinity of around 80 EC units at Morgan.

A joint program of salt interception schemes costing an estimated $60 million in capital works over seven years was agreed by partner governments (New South Wales, Victoria, South Australia and the Commonwealth) in 2001 under the BSMS. This program is expected to deliver a reduction of around 61 EC units at Morgan. The partner governments have agreed that these schemes must be both technically and economically feasible, and that the most economic schemes should proceed first.

The main aim of the BSMS is to ultimately cap salt mobilisation and export from the Basin, and therefore avoid the need for further salt interception schemes. However in the short term, further schemes will be necessary to buy time while the benefits of actions under the Strategy, and actions within catchments by communities and other investors such as through the National Action Plan for Salinity and Water Quality, take effect.

Land & Water Australia

Land & Water Australia is a statutory research and development corporation in the Australian Government Agriculture, Fisheries and Forestry portfolio. Land & Water Australia is specifically responsible for research and development (R&D) aimed at the productive and sustainable management of the land, water and vegetation resources underpinning Australia's primary industries and regional communities.

In 2003/2004 Land & Water Australia directed much of its Australian Government appropriation of $12.2 million to generate $20.9 million in research and development investments through 13 R&D programs involving 29 co-investing partners.

National Dryland Salinity Program

Between 1993-2003 Australia's National Dryland Salinity Program was a leader in both awareness raising and knowledge generation. The great strength of this national program was its capacity to bring together many of Australia's leading hydrogeologists, soil scientists, agronomists, economists, social scientists and policy advisers – all contributing to our greater understanding of salinity and its implications for the nation. It did this by forging a collaborative partnership between Australian and State Government agencies, CSIRO, the Murray-Darling Basin Commission and industry Research and Development Corporations.

The NDSP ran over two five-year phases, commissioning, coordinating and managing around 50 major research projects with an investment value of almost $25 million. In that time, it harnessed the skills and experience of nearly 300 researchers, technical assistants, consultants and policy advisers. Alongside this research effort, the NDSP implemented an effective communication and knowledge brokering strategy, informing and engaging stakeholders and culminating with the following components developed for the Managing Dryland Salinity in Australia resource kit:

- Managing Dryland Salinity In Australia (CD ROM)
- Breaking Ground: Key Findings from 10 years of Australia's National Dryland Salinity Program
- Dryland Salinity and Catchment Management: A Resource Directory and Action Manual for Catchment Managers
- Dryland Salinity: On-Farm Decisions and Catchment Outcomes – A Guide for Leading Producers and Their Advisors

Cooperative Research Centre for Plant-based Management of Dryland Salinity

The CRC is working to improve understanding of the way natural and agricultural ecosystems interoperate, particularly through provision of new plant-based land use systems that lessen the economic, environmental and social impacts of dryland salinity.

The CRC directs and influences plant-based research delivering agricultural production and processing systems that cope with, arrest and reverse dryland salinity, improve water quality and sustain rural communities. Some examples of research programs underway include:

- Sustainable Grazing from Saline Lands – researching, refining and demonstrating the scope for profitable livestock enterprises on salt affected land.

- Perennial Pasture for High Rainfall Zones – developing, testing and demonstrating new plant-based systems that are profitable and reduce off-site impacts, especially recharge to groundwater.
- Ecosystems Function in Recharge Zones – increasing understanding of water management in natural ecosystems to create the scientific fundamentals for developing plant-based solutions to dryland salinity.
- FloraSearch – builds on the WA Search project investigating new products and industries from Australian native woody perennial plants to improve sustainability of farming practices in the more challenging low rainfall zones where salinity is a more intractable problem.

The CRC has partnerships with the CRC for Australian Weed Management, CRC for Landscape Environments and Mineral Exploration, Land & Water Australia, CRC for Catchment Hydrology, Meat and Livestock Australia, Australian Wool Innovation, the Grains Research and Development Corporation and federal, state and territory agencies. The CRC co-hosts the 'Salinity Solutions – working with science and society', a major annual salinity conference, and has linked with 61 higher degree graduate scientific researchers to encourage community leadership on natural resource management issues into the future.

The CRC is developing a suite of management options for improved land use that can be adapted and adopted by a range of agricultural industries and rural communities to boost individual and regional economic performance while also meeting the requirements of natural resource management. The CRC publications *Focus on Salt* and *Salt Magazine* are key sources of information on salinity research and management strategies for landholders and regional managers, including case studies.

The National Land and Water Resources Audit

Complementing its research investments, Land & Water Australia is the host and managing agency of the National Land & Water Resources Audit (NLWRA). The NLWRA is a key Natural Heritage Trust activity with an on going role to provide for assessments of the nation's natural resources through until 2007.

The mission of the NLWRA is to provide data, information and nationwide assessments of Australia's land, water and biological resources to support sustainable development. It is imperative that people and countries be able to measure the state of their natural resources and report on the impact of Government and private investments on the resource base. The NLWRA has a critical role in facilitating this process.

The NLWRA has six key areas of activity, all of which involve coordination of data and information nationally. These are:

- Developing a consistent national reporting mechanism for collating natural resource information collected under the National Natural Resource Monitoring and Evaluation Framework.

- Collating information to support the National State of the Environment (SoE) Report.

- Developing nationally consistent, but regionally relevant integrated resource condition reports

- Facilitate reporting on the ongoing collection of natural resource information for key theme areas including those related to the National Natural Resource Monitoring and Evaluation Framework

- Reporting on National Data and Information Management (in collaboration with ANZLIC – the Spatial Information Council)

- Developing National Resource Assessment (as requested by clients)

The second phase of the NLWRA builds on the work undertaken since 1997 and is directed at providing data and information that will underpin the monitoring and evaluation of investment by the Australian Government and State and Territory Governments and regional organisations in improved natural resource management. The Audit's National Monitoring and Evaluation Framework (NM&EF) identifies natural resource topics - Matters for Target - to collect and manage information on natural resource condition in Australia. Each Matter for Target has a set of Indicators that will be used as the guideline to monitor and report on the topic.