Chapter 1

Background to the inquiry

1.1 On 17 March 2005, the Senate referred the inquiry into the extent and economic impact of salinity to the Environment, Communications, Information Technology and the Arts Reference Committee for report by 13 October 2005. The full terms of reference may be found at page ix. On 5 October 2005 the Senate granted the Committee an extension of time to report to the second sitting day of 2006. The inquiry was an extensive one and consequently on 8 December 2005 the Senate granted the committee a further extension to 28 March 2006.

1.2 In brief, the Committee was asked to examine the long-term success of federal programs that seek to reduce the extent and economic impact of salinity in the Australian environment. This included: progress of national programs to address salinity; support available to regional catchment management authorities to achieve national goals; and action taken as a result of recommendations made by the House of Representatives' Science and Innovation Committee's *Science Overcoming Salinity* inquiry.[1]

Conduct of the inquiry

1.3 In accordance with its usual practice, the Committee advertised details of the inquiry in *The Australian* on 30 March 2005. The Committee also wrote directly to a range of organisations and individuals to invite submissions, and received 50 written submissions and numerous supplementary submissions, as listed at Appendix 1. Documents tabled in public hearings are also listed in Appendix 3.

1.4 The Committee notes that all state/territory governments were invited to submit to the inquiry. Letters were received from the Queensland, Tasmanian and Victorian Governments indicating they would not be making submissions. Further, the Committee was advised that Victorian regional bodies were not permitted to make submissions to the inquiry under the directive of the Victorian Government. There was no response from the NT Government. In light of limited evidence from these states/territories, this report predominantly reflects evidence from national, NSW, WA, SA and ACT perspectives.

1.5 In order to explore the issues in more detail, the Committee held public hearings in Canberra on 6 September 2005, Sydney on 14 October 2005, Adelaide on 16 November 2005, Perth on 18 November 2005, Wagga Wagga on 10 February 2006

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1 House of Representatives Standing Committee on Science and Innovation, *Science Overcoming Salinity: Coordinating and extending the science to address the nation's salinity problem*, May 2004.

and Canberra on 28 February 2006. A list of those who gave evidence at these hearings is at Appendix 2.

Site Inspections

1.6 The Committee also conducted two inspections: a one-day tour of WA's Great Southern Region on 17 November 2005, and an afternoon tour of salinity-affected sites in Wagga Wagga, NSW, on 10 February 2006.

The Great Southern Region, WA

1.7 The Committee spent a day in the Great Southern Region inspecting a range of salinity-affected sites and different approaches to managing them. The day commenced with an airborne inspection of the wheatbelt, which gave a sense of the scale of the salinity problem in this region. Numerous salt scalds and lakes were clearly visible, with salt-affected areas intruding into roads as well as affecting vast areas of agricultural land. The plane landed at Kununoppin, where the Committee inspected the Gents-Trayning deep drainage site. Private money had been used to install 10 kilometres of drainage in order to reverse the effects of salinity on local properties. Later in the day, the Committee travelled to Qualandary Crossing where the Committee visited key sites and heard about the background to deep drainage in WA.

1.8 The Committee inspected the Integrated Wood Processing (IWP) Demonstration Plant at Narrogin. The plant is an innovative project trialling an industry-involved approach to salinity management. Locally planted mallee trees, which soak up groundwater, prevent the water table from rising and salt stores being mobilised. The mallees are harvested at the plant to produce renewable energy, activated carbon and high-quality eucalyptus oil. The IWP Demonstration Plant is discussed in more detail in Chapter 7.

1.9 Under the guidance of Mr Ken Wallace from the WA Department of Conservation and Land Management (CALM), the Committee inspected Lake Toolibin nature reserve, which is at threat from salinity. Lake Toolibin is listed on the Register of the National Estate and under the Ramsar Convention as a wetland of international significance. It is also recognised as a threatened ecological community and was listed as a recovery catchment for natural diversity under the WA Salinity Action Plan.[2] The recovery of the lake has two purposes: to arrest the decline of biodiversity and to serve as a case study or model for managing salinity in other areas. A mix of engineering and revegetation works is being implemented.

1.10 The Committee toured the Ballard's farm to view farming systems that are being used to manage the land sustainably and manage salinity. This was followed by an inspection of the Walton's farm where saltland pastures are being trialled. The Committee heard that saltland pastures have environmental and

2 K. Wallace, *Case Study – Toolibin Lake and Catchment*, nd., p. 2.

profitability/productivity benefits. They can soak up enough water to keep the water table down, in turn decreasing run-off of salt into rivers and properties down the slope, and they provide refuges for biodiversity. If the right mix of salt tolerant species is used, saltland pastures also provide a high protein diet for livestock.

Wagga Wagga, NSW

1.11 The City of Wagga Wagga hosted the Committee on a tour of areas affected by urban salinity. The Committee observed damage to the streetscape caused by the rising watertable and increased recharge, including potting and lifting of roads and both the breakdown of mortar and brickwork and salt efflorescence (white staining) on buildings. At the Wagga Wagga Showground and an abandoned sports field, the devastating effects of salinity were apparent in the very poor state of vegetation (patchy lawn and dying trees) and cracked ground surface with salt clearly visible.

1.12 The Committee observed important examples of how the community is fighting salinity. Emblen Park is located on a discharge area and has been successfully regenerated with salt-tolerant plants. A de-watering bore pumps water into a tank, with a computerised system controlling re-distribution. The Committee was taken to a residence modelled on sustainable living, the ErinEarth Ecological Justice Resource Centre, which includes an excellent example of a garden sensitive to salinity. The garden is gradually being replanted with a range of native vegetation once widespread in the region and uses excess water to maintain a wetland resource and water an orchard.

1.13 Wagga Wagga has adopted a 'whole of community' response to managing salinity. The local government is working together with industry, community groups and a range of agencies to provide education and awareness, revegetation and water management programs. This includes demonstrations and pilot initiatives for reducing the impact of salinity and encouraging community members to create waterwise gardens, limit water usage in homes and businesses and assist in the large-scale planting of native vegetation.

Outline of the report

1.14 Chapter 2 provides an overview of salinity and the framework in place to address it. It covers the main features of salinity and considers the extent and impact of salinity. A short outline of salinity management in Australia is provided. This includes a description of the three major national programs to address salinity (covered in more detail in Chapter 3) and other major programs and initiatives. Finally, a summary of the House of Representatives Science and Innovation Committee's report, *Science Overcoming Salinity*, is presented.

1.15 Chapter 3 concentrates on the national programs in place to tackle salinity and corresponds to the terms of reference (a). Both the achievements under the national programs and the areas requiring improvement are considered. This includes an examination of funding arrangements, the governance framework, monitoring of

program goals and natural resource conditions, and regional boundaries. Attention is also paid to the congruence between the national programs and other initiatives.

1.16 The role of regional bodies and the support provided to them is covered in Chapter 4 and corresponds to the terms of reference (b). Underpinning this chapter are the questions: how well is the regional delivery model working? and what can be done to improve existing arrangements and practices? The chapter addresses three themes: the legislative basis of regional bodies; resourcing and support available to regional bodies; and the relationships between regional bodies and other key stakeholders.

1.17 Chapter 5 considers the coordination and communication of salinity research. Attention is focused on the following issues: the scale at which research is conducted and whether it can be interpreted at a regional level; the need for more effective coordination and communication of research; national standards and protocols for research and information management; and research gaps. The House of Representatives inquiry, *Science Overcoming Salinity*, was specifically concerned with the use of the salinity science base and research data in the implementation of national programs. To this end, Chapter 5 relates most directly to the terms of reference (c).

1.18 With some notable exceptions, it became apparent during the inquiry that urban salinity is a neglected area, both in terms of community awareness and investment in managing it. Urban salinity is the focus of Chapter 6. The impact and extent of salinity in the urban environment and its cost is examined. This chapter also considers how urban salinity can be managed and examines the key barriers to achieving effective urban salinity management.

1.19 While salinity presents a major environmental problem, it is invariably bound to economic and social challenges. Chapter 7 considers salinity management within the context of balancing and achieving environmental, economic and social objectives. The tensions between different interests, desired outcomes and salinity management approaches to achieve these outcomes are examined. The chapter gives consideration to the balance between public and private interests and investment in salinity management, with a focus on securing large-scale private investment. Along with this, regulatory and policy mechanisms for encouraging changed land-use practice and engaging private sector interest are canvassed.

1.20 Finally, Chapter 8 presents the Committee's conclusions and recommendations for improved salinity management into the future. It summarises the main issues raised in each of the preceding chapters and outlines directions for addressing these issues.

Terminology in this report

1.21 Throughout the report the term 'regional bodies' is used to refer to the regional natural resource management (NRM) bodies, unless otherwise stated. The Committee notes that for some the preferred term is catchment management organisations (CMOs).

Acknowledgements

1.22 The Committee wishes to express its appreciation for the cooperation of all witnesses to its inquiry, whether by making submissions, by personal attendance at a hearing or, as in many cases, by giving both oral and written evidence. In particular, the Committee thanks those who travelled significant distances to attend and give evidence at its public hearings.

1.23 The opportunity to inspect salinity-affected land, waterways and infrastructure, and talk to farmers, scientists, landholders and other community members about the salinity threat and ways to manage it greatly enriched the Committee's understanding of salinity. The Committee would like to thank Professor Mike Ewing and Ms Natalie Lennon from the CRC for Plant-Based Management of Dryland Salinity and Dr Richard George, WA Department of Agriculture, for their invaluable assistance in organising the site inspection in WA. The Committee thanks Mr Tony Hepworth and the Wagga Wagga City Council for hosting the Committee's site inspection of urban salinity in Wagga Wagga.

1.24 The Committee would also like to acknowledge the many people involved in the site inspections:

- *WA* – Mr John Dunne, local farmer; Mr Owen Gent, property owner; Mr John McKay, WA Channel Group; Mr Don Woodcock, WA Channel Group; Mr John Bartle, CALM; Mr Don Harrison, Western Power; Mr Ken Wallace, CALM; Mr Neil Ballard, local farmer; Dr Ed Barnett-Lennard, WA Department of Agriculture; Dr Hayley Norman, CSIRO; Dr Phil Nichols, WA Department of Agriculture; Mr Chris Walton, property owner; Mr Michael and Mrs Margaret Lloyd, local farmers; Mr Tony York, local farmer, Mr and Mrs Ian Walsh, local farmers; Mr Peter Sullivan, Avon Catchment Council; and Mr Greg Richards, local Farmer.
- *Wagga Wagga* – Sister Carmel Wallis, ErinEarth, and other local residents of Wagga Wagga.

Note on references in this report

1.25 References in this report are to individual submissions as received by the Committee rather than a bound volume of submissions. References to *Committee Hansard* are to the official Hansard with the exception of the closing hearing in Canberra on 28 February 2006. In this instance, references are to the proof Hansard. Page numbers may vary between the proof and the official Hansard transcript.