

Appendix 4

House of Representatives Report on Science Overcoming Salinity – Recommendations

2 - The nation's programs to combat salinity

Recommendation 1

The Committee recommends that mechanisms be developed to ensure that validated salinity research findings are considered in regional planning processes, and specifically that Australian Government agencies in cooperation with state and territory governments:

- (a) develop systems to ensure that the best science is made available to state government agencies, catchment management organisations (CMOs) and land managers on an on-going basis;
- (b) provide CMOs and land managers with adequate support and resources to use and incorporate science into their regional plans, investment strategies and on-ground works; and
- (c) provide guidelines for CMOs and land managers, making them aware of pertinent salinity research findings, detailing their implications for the broad types of investments that may be undertaken, and enforcing the guidelines through the accreditation process for regional plans.

For implementation, this recommendation should be read in conjunction with recommendations 3 and 15.

4 - The salinity science base

Recommendation 2

- (a) The Committee recommends that the Australian Government, in cooperation with state agencies, conduct an audit of the totality of salinity research and development activities undertaken by all agencies and programs in which the Australian Government invests, including:
 - (i) national programs that address salinity, such as the *National Action Plan for Salinity and Water Quality* and *Natural Heritage Trust*;

- (ii) programs such as the *National Dryland Salinity Program* and National Land and Water Resources Audit;
- (iii) agencies within Australian Government departments, including the Bureau of Rural Sciences;
- (iv) Cooperative Research Centres;
- (v) Research and Development Corporations;
- (vi) national science agencies, including the Commonwealth Scientific and Industrial Research Organisation;
- (vii) universities; and
- (viii) where possible, the private sector.

(b) The Committee further recommends that the audit:

- (i) map the state of salinity research findings and the tools currently available for salinity management;
- (ii) identify all critical research gaps;
- (iii) suggest directions for future salinity research and development activities; and
- (iv) identify steps that might be taken to bring greater coherence to salinity research efforts across all Australian Government funded agencies and programs, and to improve coordination with state and regional research activities.

5 - The coordination of salinity research

Recommendation 3

The Committee recommends that the Australian Government ensure the continuation of the *National Dryland Salinity Program* (NDSP) as a matter of urgency, and that:

- (a) the role of the NDSP be expanded to address irrigation and urban salinity, with the Program renamed the *National Salinity Program* (NSP) or similar;
- (b) the NSP be managed within Land and Water Australia (LWA);
- (c) the NSP adopt research, coordination and communication strategies that assist the regional delivery of natural resource management programs and the requirements of the *National Action Plan for Salinity and Water Quality* specifically;
- (d) the functions of the NSP have regard for those identified in this report;

(e) the NSP/LWA be adequately resourced to perform its functions by the Australian and state governments;

(f) relevant Research and Development Corporations, Cooperative Research Centres, national science agencies, universities, state agencies and the private sector be strongly encouraged to partner the NSP; and

(g) there be a continuing role for an Operations Committee, or equivalent, in providing independent scientific advice with that advice coming from a broad cross-section of scientific personnel from both the government and non-government sectors.

This recommendation should be read in conjunction with recommendations 1 and 15.

6 - The adequacy of the science base, research needs and funding

Recommendation 4

The Committee recommends that the Australian Government give greater emphasis through its investments in salinity science to develop new, economically viable land and water use systems.

Recommendation 5

The Committee recommends that the Australian Government encourage catchment management organisations to introduce industry development planning into their natural resource management planning and funding prioritisation process.

Recommendation 6

The Committee recommends that the Australian Government emphasise, through its investments in salinity science, the development of technologies to address urban salinity, including:

(a) salinity assessment and risk evaluation methods; and

(b) options for treatment and management.

Recommendation 7

The Committee recommends that the Australian Government:

- (a) foster greater cooperation amongst scientists addressing salinity and, specifically, sponsor an annual multidisciplinary salinity conference, research showcase or science roundtable; and
- (b) examine ways to foster interdisciplinary research in natural resource management more generally.

Recommendation 8

- (a) The Committee recommends that the Australian and state governments make provision within the *National Action Plan for Salinity and Water Quality* for the establishment of a salinity research and development fund, to finance research that:
 - (i) is of national or statewide significance, and beyond the scope of individual catchment management organisations (CMOs);
 - (ii) pertains to the development of new technologies and industries for salinity management; and
 - (iii) is otherwise of a long-term, strategic or generic nature.
- (b) The Committee further recommends that the allocation of the pooled research funds:
 - (i) be as agreed between the Australian and state governments, but that CMOs be consulted for research needs; and
 - (ii) have regard for the research priorities identified in this report.

Recommendation 9

The Committee recommends that the Australian Government encourage Research and Development Corporations to:

- (a) invest more substantially in research for sustainable land use systems and in the development of new salinity technologies; and
- (b) conduct projects that forge links across commodities in farming systems.

Recommendation 10

The Committee recommends that, in cooperation with the states, the Australian Government:

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- (a) identify and remove impediments for catchment management organisations (CMOs) to undertake or commission research, and encourage CMOs to support research activity as part of their investment strategies;
 - (b) provide incentives for greater collaboration between CMOs to support research of cross-catchment benefit; and
 - (c) provide an appropriate degree of support to evaluate tenders and contracts let at the regional level.

Recommendation 11

The Committee recommends that the Australian Government examine ways to encourage private sector investment in research and development for commercial measures to arrest salinity and other forms of natural resource degradation.

Recommendation 12

The Committee recommends that the Australian Government, in cooperation with state governments, encourage development of industry capacity in salinity research and development, by adopting measures that include:

- (a) ensuring tender specifications provide genuine opportunities for industry to compete for public research funds, particularly for small to medium sized enterprises at the regional level; and
- (b) ensuring tendering processes are transparent, so that industry can compete effectively against publicly funded organisations.

7 - Data management and mapping technologies

Recommendation 13

The Committee recommends that the Australian and state government agencies holding natural resource management datasets, accelerate the development of data collection, management and retrieval systems that are standardised, integrated and accessible.

Recommendation 14

The Committee recommends that ANZLIC – the Spatial Information Council, in collaboration with the National Land and Water Resources Audit, be

resourced to support managers of regional projects to develop and implement best practice data management policies. Emphasis should be placed on developing:

- (a) consistent data collection, management and retrieval systems;
- (b) mechanisms to encourage data sharing between catchment management organisations, research institutions, industry bodies and government agencies; and
- (c) quality assurance processes to ensure standards are attained.

8 - Support for implementers: extending the science

Recommendation 15

The Committee recommends that the Australian Government in cooperation with the states and territories build on existing initiatives to establish a database of interpretive material, scientific research and data, related to salinity and its management. The three levels of the database should be:

- (a) a ready reference salinity component, containing concise, integrated, accurate, and easy to understand information to assist land managers, particular farmers, catchment management organisation staff and natural resource management extension officers;
- (b) links to salinity related research papers, endorsed by the *National Dryland Salinity Program* or its successor body;
- (c) a meta-data component identifying the location of available salinity data and, where possible, the capacity for a storage and retrieval system for salinity related data particularly that collected for the *National Action Plan for Salinity and WaterQuality*.

For implementation, this recommendation should be read in conjunction with recommendations 1 and 3.

Recommendation 16

The Committee urges relevant Australian, state and territory government agencies and industry groups to enhance their support for face-to-face extension services by ensuring that there are adequate numbers of qualified extension staff available to assist land managers, particularly farmers.

Recommendation 17

The Committee recommends that the Australian Government, in partnership with the relevant state agencies, compile and publish a state by state manual of viable salinity management options, to assist extension staff and land managers. This manual should be updated regularly, and survey current best practice approaches to salinity management. It should also be available free of charge in both hard copy and on the internet to extension staff and land managers dealing with salinity problems.

Recommendation 18

The Committee recommends that the relevant Australian Government agencies in consultation with state and territory governments review the issue of diminishing state extension services, with a particular focus on:

- (a) the employment conditions of extension staff;
- (b) the potential career pathways of extension staff; and
- (c) the adequacy of the training provided for extension staff to ensure their knowledge of technical, scientific and policy issues, relating to natural resource management and in particular salinity, is both current and comprehensive.

Recommendation 19

The Committee recommends that the Australian Government, in cooperation with the states, undertake an audit of the national, state and regional extension services available for salinity management, and natural resource management more generally.

Recommendation 20

The Committee recommends that the Australian Government review the effectiveness of the *National Landcare Program's* state and regional natural resource management facilitators, with a particular focus on ensuring that:

- (a) their roles and responsibilities are delineated clearly to avoid duplication with other extension services and are consistent with other national programs designed to address salinity issues; and

- (b) they receive the training and access to current information, necessary to perform their duties.

Recommendation 21

The Committee recommends that the extension services provided by the Australian Government, and participating states and territories, through the *National Action Plan for Salinity and Water Quality* and the *Natural Heritage Trust* be reviewed in due course, with a particular focus on:

- (a) the employment conditions of extension staff;
- (b) the potential career pathways of extension staff; and
- (c) the adequacy of the training provided for extension staff to ensure their knowledge of technical, scientific and policy issues, relating to natural resource management and in particular salinity, is both current and comprehensive.

Recommendation 22

The Committee recommends that the Australian, state and territory governments increase their support of catchment management organisations by:

- (a) undertaking a review to assess the effectiveness of providing groups of mobile knowledge brokers, directed to advise on national natural resource management policies and provide integrated, current and relevant scientific and technical support on salinity issues to individuals and organisations managing salinity;
- (b) providing funding for the operations of any such groups as are recommended to be formed;
- (c) enabling the secondment of such knowledge brokers from relevant research agencies, such as the *National Dryland Salinity Program*, the Cooperative Research Centre for Plant- Based Management of Dryland Salinity and the Commonwealth Scientific and Industrial Research Organisation's Land and Water Division.

Recommendation 23

The Committee recommends that the Australian Government support the establishment of a national annual forum on salinity policy, research and management, associated with the *National Action Plan for Salinity and Water Quality*, for government agency staff, catchment management organisations, private consultants, farmers, and other land managers.

Recommendation 24

The Committee recommends the Australian Government:

- (a) examine and remove any impediments to the further development of an industry in technical and support services for environmental management; and
- (b) establish and coordinate, with the cooperation of the states and territories, a national accreditation process for private sector salinity advisors to ensure that salinity advice and implementation services meet best practice standards.

