

**INQUIRY INTO THE COORDINATION OF THE SCIENCE TO
COMBAT THE NATION'S SALINITY PROBLEM**

The submission is based on an understanding that the key roles of the Commonwealth in relation to salinity research in rural and regional Australia are to:

- establish and communicate a clear national vision for salinity research, and
- help to achieve the vision through policies in areas such as infrastructure spending, taxation, natural resource management, competition policy, research and development, and – perhaps more indirectly - through the facilitation and coordination of state functions related to salinity policy.
- how is the relevant scientific knowledge being utilised in the development, management and implementation of salinity programs;

Local experiences with development of regional and sub regional plans have highlighted knowledge issues, including:

- poor integration of local knowledge with academic or agency policy;
- inadequate technical support of the management planning group;
- a dearth of local information about salinity impacts;
- calls for access to research and documentation to support perceived benefits of salinity programs; and
- difficulties in accessing expertise in research agencies such as Universities, Research Centres, and CSIRO.
- Lack of information on the real short term as well as long term benefits to landholders

The extent of information needed to adequately address salinity management is daunting, especially if we continue to take a 'top-down' approach to research and information services. Delivery of much needed research and information may become more manageable, and better integrated, if the top-down approach is complemented by a bottom-up approach at local and regional levels. This could be achieved through cooperation among research agencies (Commonwealth, State, and other), long term commitment to placement of technical expertise at a regional level (eg within existing research and education institutions, and corporations), and adequate funding support. There may be a case for greater investment in a regionally based research and technical support for environmental and other natural resource management planning.

In addition, some of the knowledge acquisition about salinity being funded by Government is questionable in terms of benefit.

Some scientific information and knowledge is being used for planning such as land and water management plans. However the missing link appears to be providing viable salinity treatment options for landholder adoption. This requires state and catchment targets to be translated into on ground regional and farm actions.

- the nature and effectiveness of the linkages between scientists and technologists conducting research into salinity, and those implementing salinity interventions on the ground;

It recognised the need for community commitment to the complementary objectives of land management and healthier rivers, and called for a refocus of attention on those policies, programs, and activities that are consistent with achieving either or both objectives without cost to the other, including:

- Improvement in the quantity, quality, and availability of salinity information services to stakeholders.
- Activities that deliver productivity gains, reduced salinity and better water use efficiency.

The successful formulation of a salinity program requires a vast improvement in the quantity and quality and availability of information services to stakeholders. Particular concerns are:

- Provision of the science behind proposals to reduce salinity in terms of assets to be enhanced appropriate management responses
- provision of the knowledge acquisition processes and models for assessing social and economic impacts of salinity
- consultative processes and use of stakeholder committees
- clear articulation of the environmental objectives to be met
- coordination of the various program and reviews being undertaken by the Federal and State government agencies and policy makers. eg COAG, MDBC, state and federal departments for natural resource management.

Issues that are being raised by the local communities include:

- Recognition of urban/rural/dryland/irrigation.
- whole range of management options needed, for example
 - different crops/perennial pastures for different climates/soil types etc.
 - different infrastructure (eg. sewage, septic) in urban areas.
 - Irrigation rate options for water/effluents etc.
 - Farming systems
- Serial Biological Concentration
- Salinity credits systems/market based instruments.
- Irrigation – better management practices, what are mitigating options during high rainfall periods.

Related research would be

- measure, forecast, value of alternatives, benchmarks, innovative use of locally native species, more water use efficient systems.
- links to land use planning, environmental flows, biodiversity conservation, land values, productivity
- MBI/incentives for harvestable species, salinity credits for recharge areas, links to carbon credits
- Salinity Projections of landscape process – catchment based programs – sub-regional regional component
- research/action linkages
- WA –v- Eastern Australia, dryland –v- irrigation, analyses –v- data
- Historical data - trends
 - responsive to management regimes
 - in relatively short time (long time to build up)
 - Cyclical
- Links to other water reform strategy centralised rather than devolved to impacted regions
- Practical application of research

- the adequacy of scientific and technical support for those on the ground implementing salinity management issues.

Landholders recognise the need for healthy working rivers and catchments. However, the current science has not been further developed to current best practice and equitable mechanisms for implementation. Landholders feel that there is no or limited consultation on what they want and or need. Those proposing change have not articulated the short and long term benefits of the proposed changes. It appears that the main input to the debates are from those who do not have to live in the rural regions or with the social and economic impacts of changes made. In particular, remote decision making is resulting in (perceived) loss of land values.

There is a two way communication issue. The scientist and technicians need to be able to provide the on ground options raised by their research. On the other hand community engagement is required to develop capacity and skill to develop subregional plans such as land and water management plans that are adapted to other (Landcare) communities and link the catchment targets to on farm works. In this area, MIA EnviroWise is complemented by industry initiatives such as the RGA Environmental Champions programs and Horticulture's sustainability handbook. Property management planning should be the basis for land use management. PMP should involve a group learning program that provides the theory as well as skills that allow the landholder to apply the concepts directly to his farm. The program should encompass whole farm planning including natural resource planning (vegetation, biodiversity, soils, water, salinity) as well as basic business planning and enterprise analysis, team building for the farm family, and understanding the fundamentals of soil and water interaction such as NSW Agriculture WaterWise.

Strategic incentives should complement the subregional and property planning to undertake (uneconomic) actions that will have environmental benefits incentives that are locally relevant and practical for implementation. Incentives could be for investing in some targeted farm practices that have multiple benefits for the environment (eg water saving, water quality, salinity, pest and weed control) and for investment in natural biological diversity (retention and enhancement, management, conservation and revegetation). Principles and priorities for investment in natural biodiversity need to be more fully research and developed.

One option that should be researched is determining quantitative restrictions to address salinity impacts of water trade. That is, given our current knowledge of hydrology we should be able to estimate the absorptive capacity of regions in terms of salinity (eg, as part of water use approvals in NSW) and accordingly impose quantitative restrictions for regions. In essence, salinity CAPs. In some cases that may mean an embargo on trades into a region (with an expectation that there will be trades out). These restrictions should be made very clear to potential traders, who are then able to adjust their strategies. Unlike water use CAPs, there should be no effective trade in the salinity CAPs, nor should they be exceeded – unless science delivers new evidence to justify alterations. The CAPs could be regularly monitored and updated (in light of changes in water and salinity management in each region).

Efficient markets are critical for maintaining the socio-economic benefits from current land use, and ensuring salinity reduction. Distortions in agricultural product markets have been well documented and Governments have long sought to reduce the adverse impacts on Australian farmers. Market based instruments have evolved quite recently, and they require close research, development and monitoring to ensure that they are operating consistently with the objectives of improved soil health while maintaining socio-economic benefits.

Submission to the
HOUSE OF REPRESENTATIVES
STANDING COMMITTEE ON SCIENCE AND INNOVATION



- how current research into salinity and information on options to address the problem are being distributed across jurisdictions, agencies, and to all relevant decision-makers; and

Although there are now mechanisms being put in place to devolve decision making to regions/catchment it is still up to individual land managers to determine how to manage salinity and related natural resource management issues. They need data relevant to their own land to accurately determine risk and extent of degradation, methods to accurately identify, groundwater modeling, movement processes, links to hydrology of catchment and associated land use, river water quality etc., relationship of physical parameter to production issues, cheap/quick remote sensing

This should be an awareness and education process to build capacity to change, not a regulatory process. As stated in 1. This knowledge appears to be limited and is not getting to the landholders in a timely manner and in a manner where they can see the opportunities for their own situation. In particular, salinity should not be considered in isolation so knowledge transfer mechanisms need to be able to integrate all natural resource management issues for the landholder.