Australian
Conservation
Foundation

Science and Australia's Salinity Crisis

A Submission to the House of Representatives Standing Committee on Science and Innovation

Inquiry into the Co-ordination of the Science to Combat the Nation's Salinity Problem

October 2003

Background

The Australian Conservation Foundation (ACF) is the country's premier national environmental non-governmental organisation. ACF is an independent, community-based group that, for nearly forty years, has been working to shape government policy, business conduct and community behaviour to protect the natural environment and promote a sustainable Australia.

Over the years, ACF has taken a strong interest in the management of salinity and the promotion of landscape health: In 2000, for instance, ACF and the National Farmers' Federation, with support from (then) Land and Water Resources Research and Development Corporation (now Land and Water Australia), published *Repairing the Country* report[1] into investment sustainable land and water management in rural Australia.

ACF, alongside the National Farmers' Federation, is a member of the Governing Board of the Co-operative Research Centre for Plant-Based Management of Dryland Salinity and is a representative organisation for the R&D corporation Land and Water Australia.

ACF wants to see a higher and more sustained level of public investment in scientific research and technological development to underpin a rapid transition to land-uses and farming systems that conserve native biodiversity, help restore landscape health and sustain human needs in Australia.

ACF is grateful for the opportunity to contribute to the work of the Standing Committee to advance a truly national scientific response to the nation's salinity crisis. This submission has been prepared in consultation with the Nature Conservation Council of NSW and the Conservation Council of WA.

Inquiry Terms of Reference

- Use of salinity science base and research data (including the development of new scientific, technical and engineering knowledge) in the management, coordination and implementation of salinity programmes.

- Linkages between those conducting research and those implementing salinity solutions, including the coordination and dissemination of research and data across jurisdictions and agencies, and to all relevant decision makers (including catchment management bodies and landholders).

- Adequacy of technical and scientific support in applying salinity management solutions

Science and Scientists in NRM and the Environmental Debate

Whilst Australian governments are investing in world-class science for better salinity management, they are often inconsistent about following up that science with concerted and timely action. It is disappointing to note, for example, that the development of salinity hazard maps in Queensland has not yet been backed up by adequate policy and funds to control the clearing of native bushland - the primary cause of secondary salinisation. It is far easier and cheaper to prevent dryland salinity than it is to treat it.

[1] Virtual Consulting Group & Griffin NRM (2000) *National Investment in Rural Landscapes: An Investment Scenario*, Report prepared for the National Farmers' Federation & Australian Conservation, with assistance from the Land and Water Resources R&D Corporation.

In another instance, the decision of the Murray-Darling Basin Commission to withhold the release of river systems science crucial to an informed debate and decision on the restoration of environmental flows in the River Murray significantly has undermined the credibility of the Living Murray process. We note and applaud the Commonwealth's insistence that this material be publicly released, and urge the Commonwealth to take note of the scientific consensus[2] that the Murray needs at least 1,500 GL in extra annual flows if it is to have a low to moderate chance of ecological recovery – including a reduction in salt loads – and to take appropriate action[3].

Finally, science and scientists have an especially important role to play in a healthy liberal democracy and the development of a sustainable society. CSIRO, for instance, plays a unique role in environmental debate by virtue of the excellence of its science and its free voice. ACF would be deeply concerned by any attempts to suppress CSIRO or any other public scientific institution's freedom to inform public policy and debate. We believe that all stakeholders in the debate over land and water management in Australia benefit from a high quality of publicly funded science that is not constrained by undue political pressures, and scientists who are not restrained from working with civil society.

Adequacy of Scientific & Technical Support for Salinity Management

ACF believes that there are several key areas of research, development and extension that do not yet receive adequate attention in terms of funding and political support, and are crucial to the long-term success of salinity management efforts, namely:

- Cost-effective treatments aimed at preventing dryland salinity through landscape change, including strategic bushland regeneration, and the development of profitable perennial farming systems in lower rainfall areas especially, together with 'pin-point' engineering actions to protect valuable public conservation, infrastructure and cultural heritage assets;

- The socio-economic constraints and potential policy drivers to the uptake of relevant technologies and solutions;

- Understanding of the consequences of salinisation for Australia's native biodiversity, the impacts on our economies and communities arising from the loss of natural life-support systems, and strategies and actions for conserving biodiversity and restoring ecosystem health in landscapes at risk of salinisation;

- Integration of long-term biophysical and socio-economic change into catchment planning;

- Development of scientific information and technology in a form and at a scale tailored to the needs of the range of communities, decision-makers and land-managers, both public and private;

- Assessment of the area at risk of salinisation that lies (or is projected to lie) outside of the traditional agricultural production-focused sphere (eg. 'lifestyle farms', etc.), and the development of specific land-use change tools and policy drivers for these areas;

- Science for managed landscape change that addresses the interaction between climate change and variability, and other environmental and natural resource management issues, including salinisation, river system health and biodiversity loss;

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[2] Leaked Report still holds water for the River Murray, Media Release, CRC Freshwater Ecology, 29/09/03; Scientific Reference Panel (October 2003) *Interim Scientific Panel Report on River Murray, Ecological Assessment of Environmental Flow Reference Points for the River Murray System*, Murray Darling Basin Commission, Canberra.

[3] ACF & NFF, *Principles for a Long-Term Australian Water Policy Framework and Action Plan,* Joint Statement to the Prime Minister, Premiers, and Australian Community, 23/07/03

- Processes and information to support community decision-making on difficult issues, such as landscape asset ranking and prioritisation of cost-effective public investments;

- Verification of the (often assumed) contribution of productive uses of saline land to biodiversity conservation and landscape health;

- R&D of engineering approaches to managing salinity impacts to yield real environmental benefits and underpin regulation for sustainable use of engineering measures on private land;

- Development of urban salinity management technologies and extension services, particularly for the protection of essential urban infrastructure, conservation and cultural heritage assets (especially in low-income areas), and in the prevention of urban salinity via sound mix of regulatory, incentives and educational measures; and

- Adaptive management and monitoring of public and private salinity management actions, including the NAPSWQ.

We recommend that the Commonwealth maintains a strong interest in research to better understand and quantify the processes and effects of salinisation, but also substantially upgrades its investment in the above areas of R&D (and extension), ie. those lines of research focused on developing technologies and tools for salinity prevention and management, including the application of the social, economic and environmental sciences. The Commonwealth's investments in salinity management are unlikely to achieve more than small-scale impacts unless backed up by R&D for profitable new technologies for salinity management. Significant National Action Plan for Salinity and Water Quality (NAPSWQ) funds should be directed to this end.

Whilst it is very important to embed salinity R&D into existing agricultural programmes and agencies, it is equally important to maintain a strong public landscape R&D effort that transcends the production-dominant worldview. There is a clear need to strengthen the capacity of non-commodity-based institutions, such as Land & Water Australia, to commission and deliver cutting edge research products to better inform land and water managers, and to develop policies to manage landscape (social, economic and environmental) change for positive outcomes.

The Role of the Private Sector in Salinity Management R&D

The 2000 *Repairing the Country* paper outlined a strategy for sharing investments in sustainable land management between the public and private sectors. More recently, ACF, together with CSIRO, Southcorp Wines and several other companies with an interest in the future of rural Australia (the Business Leaders' Roundtable), commissioned Allen Consulting to produce a policy package that would enable the Commonwealth to tap into the energies and creativity of Australian business to drive new commercial-environmental ventures in rural Australia.

This is not a call for a reduction in public investment in environmental R&D. On the contrary, we urge the Commonwealth to upgrade its current investment to adequately cover the R&D gaps outlined above, and to augment its efforts by establishing an incentives framework that drives private sector investment in R&D for profitable *and* sustainable measures to arrest landscape decline, including new perennial land-uses.

The framework outlined in the 2001 *Leveraging Private Investment – Repairing the Country*[4], proposed the creation of new institutions linking capital markets to commercially driven investment projects through land users, businesses and natural resource managers. The report draws on existing policy tools well known in sectors such as health and education.

[4] See: Allen Consulting Group (2001) *Repairing the Country: Leveraging Private Investment*, The Business Leaders' Roundtable, Melbourne. http://www.acfonline.org.au/docs/publications/rpt0005.pdf

The approach involves:

- Improved access to private capital through tax-preferred investment vehicles (statutory investment companies);
- A Land Repair Fund to administer a range of programmes and tax concessions;
- Accreditation for commercial-environmental ventures to ensure project proposal yield public good benefits and are consistent with national and catchment-based policies and objectives;
- Taxation – an integrated package of offsets and concessions tailored to make environmental investments more attractive; and
- Seed funding for innovative commercial ventures that achieve environmental benefits.

National Coordination of Salinity Management R&D

ACF supports – in principle at least – the Commonwealth's regional delivery approach to NRM and believes that catchment management bodies (or authorities, CMAs) have an increasingly important role to play in salinity management, including research, development and extension.

The capacity of CMAs or regional NRM bodies to undertake their own research, alone or in concert with public/private/community institutions is highly variable, and hence greater effort needs to be applied to ensure all catchment and regional bodies develop the wherewithal do good R&D of most relevance to their needs. The Commonwealth should ensure that impediments to R&D investment by catchment and regional bodies are minimised, allocate significant NAPSWQ funds to R&D at the catchment level and ensure that regional/catchment R&D investment meet both national and local priorities.

Furthermore, the Commonwealth should strongly encourage partnerships between community groups (eg. Greening Australia) business, scientific and state agencies to advance extension of existing research products for landscape change and salinity management.

ACF notes that the Commonwealth seems set to lose its chief coordinating, clearing-house, interdisciplinary, R&D and extension body for salinity management R&D – the National Dryland Salinity Program (NDSP). This leaves the Commonwealth without an institution with a proven track record to minimise competition between agencies and to effect good collaborative work.

ACF supports the continuation of the NDSP, subject to revision given the critical R&D needs outlined earlier (perhaps as a new broad-based 'Landscape Change Programme'), with good community oversight, and in which institutions like the CRC for Plant-Based Management of Dryland Salinity and Land and Water Australia take a lead role. Failing this, the Commonwealth should commit sufficient resources to take up the R&D and institutional shortfall left by the demise of the NDSP.

The National Land and Water Resources Audit (NLWRA) has proven invaluable in providing the community and governments with the best picture of Australia's landscape crisis so far[5], and a sound basis for public investment in R&D at the national level. ACF supports the continued funding of the NLWRA and urges the Commonwealth to upgrade the NLWRA's capacity to harvest state-level data, to spur on new R&D in critical areas and to ensure it is able to deliver its findings without fear or favour.

As touched upon above, the Commonwealth needs to encourage non-commodity based R&D and invest in interdisciplinary research, development and extension programmes that address the complexity of sustainability in Australia's agricultural landscapes.

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[5] National Land and Water Resources Audit (2002) *Australian Dryland Salinity Assessment 2000*, NLWRA, Turner ACT.

Commonwealth investments in business-as-usual agricultural R&D need to be scrutinised in the light of the need to manage landscape change to arrest salinisation, biodiversity, and soil and water decline. The Commonwealth must ensure that all of its agricultural industry R&D investments are consistent with and contingent upon their contribution to landscape sustainability. Then, and only then, will we arrive at a truly national response to the salinity crisis.
