

Lessons from dryland salinity policy experience in Australia

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Introduction

Since the 1980s, a number of government policies and programs have attempted to reduce the magnitudes of actual and threatened impacts of salinity in Australia. These programs have involved a variety of different policy tools, institutional arrangements and levels of funding. Whilst a small number of individual successes can be identified, most of the public programs have been poorly conceived and have not been effective in containing or adapting to salinity, particularly those attempting to influence the decisions of private landholders. This includes the largest and most recent program, the A\$1.4 billion National Action Plan for Salinity and Water Quality (NAP), which has been conducted over the past seven years.

In this paper we describe the main features of the NAP, and discuss reasons for its limited impact on salinity. Then we outline the Salinity Investment Framework III (SIF3), which was our attempt to address the main weaknesses in the NAP and similar programs. Lessons are presented and discussed.

The National Action Plan for Salinity and Water Quality

The NAP, an initiative of the national Australian government, was announced by the Prime Minister in 2000. It offered funding of \$700 million over seven years, conditional on matching funds from the states. It was based on “Integrated Catchment/Region Management Plans” to be developed “by the community” (Anonymous, 2000). Of 56 natural resource management (NRM) regions, 22 were selected for funding under the program on the basis of their problems with salinity and/or water quality. These regional NRM bodies are required to engage with local communities in the course of seeking improved NRM outcomes. These two aspects can sometimes be in conflict, particularly in cases where community members prefer actions that are not effective from an NRM perspective. Each region was required to develop a strategy, to be accredited by the Australian government. In each state a Joint Steering Committee, consisting of representatives from the Australian government, the state government and the community, provided oversight of the process. Tensions and different agendas (often covert) between state and national governments have been evident throughout the program.

From the initial announcement, Pannell (2001a, b) was critical of the design of the program, arguing that: “the package appears to be constrained in ways which will make it very difficult not to spend money unproductively”. Pannell (2001b) noted that “the regional groups to which funds are to be channeled will find it very difficult not to spread much of the money thinly and non-strategically amongst farmers. The groups will need very high levels of information and leadership if they are not to allocate the money in ways that will be socially and politically attractive but technically and economically inefficient. It may be expecting too much of them to make the difficult but necessary decisions about priorities, especially where it involves fewer funds going directly to farmer members of their communities”, (p. 539). In addition, the focus on the regions was excessive. Some of the most productive investments would have been better handled at the state level, such as responses involving regulation, research, or major engineering works.

Governments should have provided stronger guidance and support to the regional bodies. Guidance was required to ensure that the latest bio-physical and socio-economic research and its implications for investment (particularly the need to target funds carefully to high-priority assets) were accounted for. Support was also needed through provision of an appropriate investment framework to guide

regional decision making and provision of standardized high-quality data sets to guide decision making.

Accountability was also lacking. The lack of an agreed decision framework has meant that the focus was likely be on activities rather than outcomes, and that it would be easy for each organization to avoid responsibility for poor use of public money.

Each region was allowed to apply its own approach to planning and prioritisation. Most relied only on local knowledge of the salinity problem, parts of which were out of date. The direction provided by governments was often counter-productive: focusing on on-ground actions through provision of small subsidies to many landholders, rather than well considered and well targeted investments; or requiring a target-setting process that led to unachievable targets. There was no requirement for the regional bodies to undertake good technical analysis of outcomes from their investments, and so they did not. Instead, as a result of lags in establishing the program, governments emphasized the need to spend the available budget quickly, regardless of the lack of rigorous analysis and planning.

A key assumption underlying the program was that suitable land management options for salinity management already existed. The adoptability of required practices was taken for granted; there was no requirement for adoptability to be considered in planning and prioritization. In fact, suitable adoptable practices were (and are) available only for sub-sections of some regions (see Ridley et al. 2008). For achievement of NRM outcomes, a priority investment in many cases should have been for investment in development of improved technologies that are highly adoptable by landholders, as well as effective for salinity management. In practice, investments in this area were, at best, not encouraged, and at worst, forbidden in some states. The investment in technology development that did occur was independent of the national salinity program.

Novel elements of the NAP included a pilot program for “market-based” economic policy instruments (salinity credits, subsidy payments, etc.), and a program of airborne geophysics using electro-magnetics and other techniques to identify salt deposits and flows. Market-based instruments were not very relevant to dryland salinity (Pannell, 2001b) because in most cases the available land-use changes were not cost-effective, even after allowing for downstream benefits. Airborne geophysics information has been of limited added value for diagnosis and planning – it often allows only minor improvements relative to the best available “low-tech” information.

Since the establishment of the NAP there have been a number of official reviews of various aspects of it. Each of these has affirmed one or more of the concerns outlined by Pannell. Reviewing salinity science, the House of Representatives Standing Committee on Science and Innovation recommended that “the Australian Government give greater emphasis through its investments in salinity science to develop new, economically viable land and water use systems” (Anonymous, 2004, p. xxv).

The Australian National Audit Office (Auditor General, 2004) noted that there was an “inability of some regions to access adequate data and analysis at a useable scale” (p. 15), that “enhancing guidance to the regions must be given a higher priority” (p. 15), and that “a quality assurance process involving a regular, routine review of a sample of plans, using the best available science and economic analysis, would assist in improving the substance of the plans” (p. 16). They found that only around 30 per cent of regional bodies agreed that “the level of ongoing support (including scientific knowledge, economic information, technical data) is adequate to assist in developing regional plans and to target investment strategies to areas of highest need” (p. 60).

A review by the Australian Senate (Anonymous, 2006) recommended “that the Australian Government, in cooperation with the states and territories, strengthen the accreditation process for regional bodies. The improved process will ensure that funding is conditional on rigorous investment planning” (p. xii).

Finally, a consultant’s review commissioned by the Australian government found that “use of best-practice ‘models’ for salinity intervention was not well documented in the NRM plans, nor were

multi-regional collaboration on salinity issues or linkages between management action and resource condition targets” (SKM 2006, p. 3). “There were rarely robust rules of thumb that would predict a given level of resource condition change for a given level of intervention” (p. 04). Although there were some indications of improved salinity conditions in some areas, there had been several years of below-average rainfall in those areas, and it was “rarely clear that this [improvement] is due to salinity interventions and not climate”.

Despite these concerns, and many others described in the reports, there was a minimalist response by the Australian government, and the program was continued in essentially unchanged form. There appeared to be very limited interest by the various governments in addressing the hard issues that would be required to improve the operation of the program.

SIF3

The dryland salinity problem in Australia is complex, multifaceted, and requires case-specific management responses. Effective policy needs to take full account of these realities and to make strong, integrated use of bio-physical and socio-economic research findings, at both the policy design and implementation phases. Past policy programs have mostly not done so, partly because of political considerations, and partly because to do so is very challenging.

To address this gap, we developed SIF3 (www.sif3.org) an investment framework for dryland salinity that embeds current research knowledge, and is easy to understand and apply (Ridley and Pannell, 2005). SIF3 includes a set of decision rules that guide NRM bodies in the selection of high-priority assets for funding, and in the selection of policy tools. The aim is to guide investors towards the greatest NRM outcomes for the available budget. SIF3 requires environmental managers to be explicit in identifying the highest-value assets, the degree of salinity threat they face, the technical feasibility of reducing that threat, the adoptability of relevant works by land managers, the urgency of responding and the risk of adverse side effects from responding. This information is integrated to identify case-specific recommendations that are consistent with existing scientific research. This is done using an innovative “public and private net benefits framework” (Pannell, 2008).

The framework recommends a broader and different mix of policy tools than have been used in practice, with extension and incentive payments being targeted to cases where the relevant land-use changes are highly adoptable. Localised and dispersed assets are treated differently. The framework has been piloted successfully in two regions in a highly participatory process.

There are lessons from: the results of the framework itself; the experience of piloting it (Ridley and Pannell, 2008); an evaluation of the piloting process in one region (Park et al., 2008); related social research into the motivations of lifestyle farmers (Wilkinson, 2008); research into the capacity limitations of regional NRM bodies (Seymour et al., 2008; Marsh et al., 2008); and assessment of existing regional salinity plans in the state of Victoria (Alexander et al., 2008). Selected key lessons are outlined below.

Lessons learnt

Governments need to take the lead and make it clear that outcomes are required, not just activity. Funding needs to be conditional on demonstrated high likelihood of achieving outcomes. There needs to be more honesty from governments and regional bodies that much of the existing funding is achieving community participation but not NRM outcomes.

Given the lack of leadership and guidance by governments, both Australian and in the States, regional salinity plans in the NAP have mostly been weak. For example:

- There has been an excessive reliance on extension and small temporary incentives in situations where these will not achieve salinity outcomes.

- There has been inadequate use of science, so that few of the many investments have been made with a clear understanding of the likely NRM outcomes that would result.
- There has been little realistic assessment of the likely behavioural responses of landholders to intervention, reflecting a general neglect of economics and social science.
- There is a marked lack of capacity in regional bodies, as well as at state and Australian government level, to integrate the disparate types of information for decision making.
- Monitoring and evaluation of investments has been weak. Addressing this will require an improved process of decision making and target setting.
- There has been poor accountability for outcomes and inadequate response to the program review.

Conclusions

We believe that these weaknesses can be addressed by government commitment to:

- A clear focus on outcomes, rather than activity, with much stronger accountability measures.
- An agreed decision framework that assists decision makers with integration of information for prioritization and target setting.
- An evaluation process that links decision making to appropriate target setting.
- Provision of standardized high-quality data sets, and support for the use of relevant current research in planning.
- Greater patience, to allow more realistic time frames for analysis and planning.
- Reduced emphasis on funding on-ground works irrespective of whether they will achieve NRM outcomes.

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