

Capacity needs for effective management of dryland salinity at the regional level: a tale of two catchment organisations

Sally Marsh¹, Eloise Seymour^{2,3}, David Pannell^{1,3}, Anna Ridley^{3,4}, Roger Wilkinson^{3,5}

¹School of Agricultural and Resource Economics, University of Western Australia, Crawley, WA

²School of Environmental Sciences, Charles Sturt University, NSW

³Future Farm Industries CRC

⁴Department of Primary Industries, Rutherglen, Victoria

⁵Department of Primary Industries, Bendigo, Victoria

Introduction

In Australia, much of the responsibility for the management of natural resources has been devolved to the regional level. The past decade has seen the establishment of 56 regional NRM bodies, or catchment management organisations (<http://www.nrm.gov.au>). Various arrangements exist for the structure and operation of these organisations in different states (see Pannell *et al.* 2007), but common to all regional catchment management organisations (CMOs) is the responsibility for the development and implementation of regional catchment strategies to address natural resource management issues in the region. CMOs are responsible for prioritising on-ground works to be funded with monies from both state and federal governments originating from the National Action Plan for Salinity (NAP) and the National Heritage Trust (NHT), and overseeing the implementation and assessing the effectiveness of projects using these funds.

There has been considerable investment in capacity building under these regionally-based NRM programs, but little or no rigorous analysis of the institutional arrangements put in place for these programs, including arrangements for support of capacity-building activities. In this paper we report research which explored capacity issues facing regional catchment organisations in two areas: i) the capacity within the organisations themselves in relation to technical analysis and decision analysis; and ii) the capacities of the organisations and agencies within regions to develop and deliver the desired capacity-building activities for land managers. Two catchment organisations, the North Central Catchment Management Authority (NCCMA) in Victoria and South Coast Natural Resource Management in Western Australia (SCNRM), were chosen for an in-depth case study to explore capacity in these two areas.

Both these CMOs were interested in improving their capacity to develop and implement their regional catchment strategies and were involved in a pilot study of the Salinity Investment Framework (see Ridley and Pannell 2008). The Salinity Investment Framework (SIF3) provides a rigorous and sophisticated approach to salinity planning and prioritisation. Effective use of this framework, and indeed any natural resource management planning and prioritisation process, assumes capacity in a number of areas, including: the ability to access and assess a wide range of technical, economic and social information; the ability to communicate with and involve various groups, including state agencies and community groups; the ability to evaluate and prioritise various competing natural resource management options; and the ability to monitor and evaluate the options taken. The aim of this case study was to assist catchment organisations assess their capacity needs and gaps, and to improve their capacity to develop and deliver effective natural resource management for their region.

Materials and methods

Prior to commencing the research, the willing and active participation of both the NCCMA and SCNRM in the capacity assessment project was achieved by a series of briefings of key members in the organisations. To help the research team become familiar with issues in the region they toured the North Central region in Victoria in December 2005, meeting with various NCCMA and Department of Primary Industries (DPI) staff who were implementing projects in the area, and interacting with various local stakeholder groups. A similar tour was held in the South Coast region of WA in July-August 2006.

A series of semi-structured interviews were carried out with small groups (generally two to four people) of regional NRM stakeholders during June – September 2006 in the North Central region of Victoria, and during February – May 2007 in the South Coast region of WA. The NCCMA and SCNRM were consulted for advice on groups and individuals who should be involved, and also the scope of the questions to be addressed in the interviews. Interview questions in both regions were based around the following themes: i) exploring strengths, weaknesses and needs in the development and implementation of the existing regional NRM Strategy and Investment Plan; ii) how different stakeholder groups interact to develop and implement the NRM Strategy and Investment Plan sub-programs and projects; iii) CMO structure and decision making processes (strengths and weaknesses) and implications for development and implementation of the NRM Strategy and Investment Plan; iv) service provision for development and implementation of the NRM Strategy and Investment Plan; and v) role of the community and community consultation.

In the North Central region of Victoria, a total of 30 individuals spread between nine groups were interviewed and in the South Coast region of WA, a total of 45 individuals spread between 15 groups were interviewed. Groups included CMO staff and working groups, research and extension providers, and other agencies and groups. Details of the criteria used for the selection of participants in both regions are given in Seymour *et al.* (2007a, 2007b). The research was qualitative and transcripts were analysed using qualitative analysis software N-Vivo 2.1. From its inception until June 2007 the organisation now known as SCNRM was called South Coast Regional Initiative Planning Team (SCRIPT). At the time of the field work, the organisation was called SCRIPT. Both the interviewers and interviewees used the name “SCRIPT” during the interviews. To be faithful to their language we have retained the use of the term “SCRIPT” during our reporting of the interviews. Elsewhere the new name, SCNRM, is used. Quotes used in this paper represent views commonly expressed.

Results and discussion

The results reported in this section are only a small proportion of the material obtained in the interviews. For this paper, we have focused on a number of key capacity areas common to both regions. More complete results and recommendations made for each region can be found in reports written for the NCCMA (Seymour *et al.* 2007a) and SCNRM (Seymour *et al.* 2007b).

Ability of the CMOs to integrate information from a range of different areas and incorporate it into decision making

Integration of information is recognised as being important; however, being able to interpret and distil the science is currently seen as a major skill gap in both the NCCMA and SCNRM:

I think there is a lack of that sort of integration. I think everyone is so busy trying to make head or tail of the information that is out there. People in the Department who are delivering on SCRIPT programs are having to do a lot of ground work in actually gathering the different information so there is not a lot of time left over for bringing it all together [SCNRM working group].

Within the NCCMA the formal processes to link R&D findings into decision making appear limited. The process of using R&D work was described by research providers as looking something like:

A report comes out. It depends whether or not an individual in the CMA picks that up as relevant to their particular work. If they do then I think they feed it through to the Implementation Committees or whoever is developing an action plan at the time. But it doesn't necessarily trigger a review of an action plan in the formal sense. It's up to individuals to follow through the need to change [NCCMA research providers].

Good quality information should form the basis of decision-making for NRM investment and strategic planning. While the two CMOs generally had staff and committees with a wide range of skills and local knowledge, there is not a clear process for integrating this knowledge, although SCNRM had a more formal process to do this through their working groups. Additionally, skills for identifying

which research is relevant for NRM decision-making are needed. One implication for researchers and providers of technical information is that they need to use plain language and include a short summary of the major points of the research, so that the CMOs are able to distil the information. The increased use of formal decision frameworks, like SIF3, will also help with integration.

Availability and use of socio-economic information

In general, the availability and use of socio-economic information in the two regions is less than for technical information. This was particularly so in SCNRM where it was said that while agricultural and hydrological issues were well covered in the region, socio-economic information was lacking:

If there is a weakness here it would be in economic and social information. My feeling has always been that because of the heavy involvement of the agencies, hydrology and agriculture are well covered. Economic and social information, we don't have the same structures out there, or if we do I suspect we haven't tapped into the right ones to gather more information [SCNRM working group].

The study revealed a capacity gap relating to the under-use of economic and social information. The focus on mainly biophysical data is most likely a result of the heavy involvement of government agencies, but is also related to the lack of availability of good socio-economic data. There are many ways that economic expertise and economic information can improve the processes of NRM planning and prioritisation. A number of interviewees were aware of the need for more economic and social information to inform decision-making. In particular, the implementation staff in both regions seemed to be very aware of the limitations of the current incentives programs. Given that a large focus for CMOs is on-ground activities that require significant land use change by land managers, consideration of farm-level economics and adoptability of practices can be very important. Social factors are particularly important in areas where the number of small non-commercial landholders is high (see Wilkinson 2008). Consideration of socio-economic information will be crucial in the design of incentives and other NRM activities for different parts of CMO regions and informing the development of realistic Resource Condition Targets.

Collaboration between the catchment organisation and other organisations and agencies in a region

The collaboration between state departments (e.g. of agriculture, water and environment) and CMOs is an important relationship for regional NRM, particularly in the implementation of the RCS and extension activities. This was one area where there were substantive differences between SCNRM and the NCCMA. In theory, the regional NRM model is said to have major benefits for regional NRM organisations, especially in providing more efficient and coherent access to government (Paton *et al.* 2004). However the interviews revealed that effective collaboration has not yet been reached in some relationships, especially with local government.

My view is that local government is engaged too late in the process. ... I would like to see local government involved much more intimately at the very early stages of development of the RCS [NC local government]; and With the NRM Strategy local government were brought in too late because of the long period in getting the strategy prepared [SCNRM working group].

Good working relationships between CMOs and State agencies would seem to be beneficial for effective implementation of NRM Strategies, and also for the exchange of scientific knowledge. As CMOs grow larger and have more in-house expertise, it would appear that working partnerships with State agencies can become more difficult. For example, compared to the NCCMA, SCNRM is relatively small and dependent on good partnerships with government agencies. Collaboration has worked well, but it was felt that if SCNRM started to build in-house technical expertise and duplicate roles with other organisations, tensions may develop:

If SCRIPT can do their own thing then they will stop forming partnerships. As soon as you can do your own thing the communication stops. Because SCRIPT doesn't have the technical expertise within their own body, it's very dependent on making use of other expertise, and it does that very effectively [Department of Agriculture and Food WA].

This tendency needs to be recognised and actively addressed. It would seem helpful to have agency staff on relevant CMO committees, and involved in planning processes.

Reflection on and evaluation of past performance

Those interviewed from both CMOs generally perceived evaluation as relating to 'have outputs been met?' rather than reflecting on processes and higher level outcomes. A number of the NCCMA staff group were aware that evaluation needed to also include some reflective thinking about effectiveness and outcomes:

So much of the business of the CMA is about being accountable for every dollar spent. I'm not sure that there is much critical thinking about exactly what we should be doing. It's about 'we've got to spend this much money over 12 months on this issue' and looking at how programs are delivered – and not actually reflecting and saying 'did what we do actually work or are we on the right track?' [NCCMA staff].

Regional NRM is occurring in an increasingly accountable funding environment. Government funding bodies (and Research Corporations) want evidence of the impacts of regional NRM and capacity-building programs. There are two aspects of evaluation: a) accountability and b) adaptive management (Paton *et al.* 2004). At present, evaluation in the two case study CMOs is not well linked to adaptive management. The tendency for CMOs to focus on accountability is well reported in the literature. Many regional organisations interpret evaluation to largely be about keeping track of budgets, projects, and progress of on-ground works (Allan and Curtis 2005). This focus by CMOs is in response to the funding environment and the accountability requirements of government. Furthermore, the approach of setting “aspirational” targets for investments used by CMOs does not lead to a culture of monitoring and evaluation focused on outcomes rather than outputs. Realistic targets developed as a last stage of the planning process, after possible NRM investments and their costs and outcomes have been identified, would allow good monitoring and evaluation processes to be instigated.

Conclusions

In this paper we have highlighted some areas where improved capacity is critical for effective NRM management by regional catchment organisations: specifically, improving their ability to i) integrate information from a wide range of different scientific/technical areas and incorporate it into decision-making; ii) make better use of economic and social information; iii) collaborate effectively with organisations and agencies in a region; and iv) reflect on and evaluate past performance.

Acknowledgments

The research team is grateful to all participants from the North Central region of Victoria and the South Coast region of Western Australia for sharing their views and knowledge about regional NRM in Australia. We also gratefully acknowledge funding from the Cooperative Venture for Capacity Building and the CRC for Plant-Based Management of Dryland Salinity.

References

- Allan, C. & Curtis, A. (2005). Nipped in the bud: why regional scale adaptive management is not blooming, *Environmental Management* 36: 414-425.
- Pannell, D.J., Ridley, A., Seymour, E., Regan, P. and Gale, G. (2007). Regional natural resource management arrangements for Australian states: structures, legislation, and relationships to Government agencies, CRC for Plant-Based Management of Dryland Salinity, UWA, Perth. Available online: <http://cyllene.uwa.edu.au/~dpannell/cmbs3.pdf> [Accessed May 21 2007]

- Paton, S., Curtis, A., McDonald, G. and Woods, M. (2004). Regional Natural Resource Management: Is it sustainable?, *Australasian Journal of Environmental Management* 11: 259-267.
- Ridley, A.M. and Pannell D.J. (2008). Piloting a systematic framework (SIF3) for public investment in regional natural resource management in dryland salinity in Australia, Proceedings of the 2nd International Salinity Forum, Adelaide, SA, 31 March – 3 April 2008.
- Seymour, E., Marsh, S., Pannell, D., Ridley, A., and Wilkinson, R. (2007a). Exploring needs to build capacity for Natural Resource Management in the North Central region of Victoria, SIF3 Working Paper 0705. Available online: <http://cyllene.uwa.edu.au/~dpannell/sif30705.pdf> [Accessed 3 September 2007].
- Seymour, E., Marsh, S., Pannell, D., Ridley, A., and Wilkinson, R. (2007b). Exploring needs to build capacity for Natural Resource Management in the South Coast region of Western Australia, SIF3 Working Paper 0703. Available online: <http://cyllene.uwa.edu.au/~dpannell/sif30703.pdf> [Accessed 3 September 2007].
- Wilkinson, R. (2008). Tailoring salinity investment to the social needs of lifestyle landholders, Proceedings of the 2nd International Salinity Forum, Adelaide, SA, 31 March – 3 April 2008.