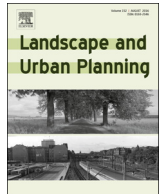




Contents lists available at [ScienceDirect](#)

# Landscape and Urban Planning

journal homepage: [www.elsevier.com/locate/landurbplan](http://www.elsevier.com/locate/landurbplan)



Research paper

## Managing wicked natural resource problems: The collaborative challenge at regional scales in Australia

Brian W. Head<sup>a,\*</sup>, Helen Ross<sup>b</sup>, Jennifer Bellamy<sup>c</sup>

<sup>a</sup> University of Queensland, Institute for Social Science Research and School of Political Science, St Lucia, Brisbane, Queensland 4072, Australia

<sup>b</sup> University of Queensland, School of Agriculture & Food Sciences, St Lucia, Brisbane, Queensland 4072, Australia

<sup>c</sup> University of Queensland, Institute for Social Science Research and School of Agriculture & Food Sciences, St Lucia, Brisbane, Queensland 4072, Australia

### HIGHLIGHTS

- Collaborative processes are relevant for addressing wicked NRM policy problems.
- Collaborative forms are contingent on local-regional problems and institutional contexts.
- Collaborative forms must adapt as issues and participants evolve.
- Problem reframing responds to new partnerships, policy reform and knowledge advances.

### ARTICLE INFO

#### Article history:

Received 1 December 2013  
Received in revised form 1 December 2014  
Accepted 29 March 2016  
Available online xxx

#### Keywords:

Collaboration  
Wicked problems  
Regional scale  
Policy problem framing  
Natural resource management

### ABSTRACT

Collaborative processes have become instruments of choice in many programs of natural resource management (NRM) internationally. Collaborative approaches to wicked NRM problems appear attractive, given the difficulty of the issues, the wide range of stakeholders, and the dispersed responsibilities for NRM. This study of Australia's use of collaboration to tackle wicked NRM problems at regional scales examines four diverse case studies. We analyse and contrast the challenges of specific wicked problems, the historical emergence of collaborative forms, and the benefits and challenges encountered within each of four large regions. In addition to specific organizational and financial difficulties within each collaborative arrangement, we found several common challenges (and opportunities) over relatively long timeframes. These included: managing the intersection of diverse competing interests and mandates; navigating significant issues despite uncertain knowledge; maintaining focus and effort over long periods; building local and regional momentum and continuity while adjusting to policy changes at other levels of governance; recognizing opportunities for collaboration and adaptive change; and generating collaborative platforms for linking science-policy-community leadership. We reflect on what can be learned by comparing diverse attempts at the regional scale to utilize collaboration as an instrument for managing wicked socio-ecological policy problems over long timeframes.

© 2016 Elsevier B.V. All rights reserved.

## 1. Introduction

'Wicked' problems present immense challenges for policy makers and for the many other parties involved in such issues (APSC, 2007; Rittel & Webber, 1973). The issues are many-faceted, with divergent framing of the problems by stakeholders with differing values and perspectives. Possible solutions are hard to identify, let alone to implement effectively, in the face of incomplete knowl-

edge and divergent interests. Attempted solutions to one part of a problem may have unforeseen deleterious consequences for others. Issues in natural resource management (NRM) and environmental policy often involve 'wicked' problems, since natural resources have multiple but often conflicting uses, being crucial for both human and ecological systems needs. These perceived needs and interests play out differently across various geographical contexts and at different multiple spatial and time scales (e.g. Bellamy, 2007; Head, 2008). Following in the steps of Rittel & Webber (1973) and later analysts (Bellamy, 2007; Head, 2008; Head & Alford, 2015; Norton, 2012), we view 'wicked problems' as particularly complex, open-ended, and intractable issues, in which both the nature of the 'problems' and the preferred 'solutions' may be strongly con-

\* Corresponding author.

E-mail addresses: [brian.head@uq.edu.au](mailto:brian.head@uq.edu.au) (B.W. Head), [helen.ross@uq.edu.au](mailto:helen.ross@uq.edu.au) (H. Ross), [jenny.bellamy@uq.edu.au](mailto:jenny.bellamy@uq.edu.au) (J. Bellamy).

tested. Moreover, we contend that stakeholders in socio-ecological systems can work fruitfully together in seeking improvements, but that science-derived solutions are not able to 'solve' the underlying and evolving problems in a definitive way. Working with wicked problems 'requires a holistic and process oriented approach that is by nature adaptive, participatory, and transdisciplinary' (Xiang, 2013, p. 2).

Given the inherently dispersed nature of responsibilities and influence over NRM issues at 'regional' or river catchment level, it is not surprising that *collaborative* approaches have become instruments of choice in various NRM programs in Australia (Bellamy, 2007) and in many other countries (Conley & Moote, 2003; Ingram, 2008). Collaboration itself is not the solution, but participatory processes facilitate joint goal-setting and problem-solving. In principle, collaboration may allow most stakeholders to work together towards shared understanding of problems and possible solutions. In considering collaboration, we adopt the flexible definition and description of Gray (1989), who views collaboration as 'a process through which parties who see different aspects of a problem can constructively explore their differences and search for solutions that go beyond their own limited vision of what is possible' (Gray, 1989, p. 5). In practice, collaborative processes are often difficult to progress rapidly, owing to the need for moving towards shared objectives and strategies through dialogue and conflict resolution (Gerlak & Heikkila, 2007; Innes & Booher, 2003). Building and managing collaborations can often be very challenging, as confirmed by many of our case-study interviewees.

This paper explores what lessons have emerged in relation to using collaboration as a governance strategy for the management of 'wicked' natural resource problems at regional scales in Australia. Through four case studies, we explore the diverse challenges of developing and maintaining collaborations under different circumstances, and raise the question of whether different collaborative forms may be more appropriate for different types of wicked NRM challenges in various specific contexts. We explore the nature of wicked NRM problems in the four cases, and the emergence of collaborative approaches to address these problems at the regional scale. We consider some of the changing institutional contexts, emerging challenges, and their implications. But first it is necessary to outline the policy and institutional background for NRM in Australia.

## 2. Background: NRM in Australia

NRM and environmental policy has been a state-level responsibility in the Australian federation, associated with constitutional responsibilities for land and water, with the states typically devolving some regulatory responsibilities to local governments. However, in the last twenty years or so, the national government has taken an increasing role in managing a growing set of international obligations on the environment, in forging intergovernmental agreements with the states on standards and strategic goals, and in providing incentive-based funding for achieving performance outcomes (ANAO, 2008; Bellamy, 2007; Head, 2005). State regulation has been and continues to be fragmented and relatively light-handed in an economy generally driven by developmental agendas.

Issues such as soil erosion, water quality and access to irrigation water have a long history of policy intervention at local levels. During the 1970s and 1980s there was a gradual broadening of NRM policy instruments, such as establishing industry codes of practice and investing in science-based research and educational services. By the early 1990s there were extensive initiatives with landholders at a local level, to promote environmentally-friendly land-use practices with benefits for land, water and biodiversity while sup-

porting productive rural enterprises. These locally-based initiatives were essentially 'voluntarist', but their value was recognized by federal government leaders who helped to fund the development of a national 'Landcare' program from the late 1980s, as well as by the state governments which initiated a range of integrated catchment management (ICM) programs in parallel (Bellamy, Ross, Ewing, & Meppem, 2002). These mark the commencement of collaboration as a significant policy instrument, in the form of community-based Landcare groups, then multi-stakeholder integrated catchment management.

Following concerns that local collaborations were insufficient to address major landscape-scale problems such as salinity, the 'regional' level began to emerge as a preferred unit for NRM management and for scientific assessment of NRM challenges in the late 1990s (Bellamy, 2007; DAFF, 1999; Robins, 2007). Some states, such as Victoria, New South Wales and South Australia, began to formalize this approach through legislation establishing regional-scale Catchment Management Authorities (CMAs) to undertake more integrated planning and monitoring in water, land and biodiversity issues (Bellamy et al., 2002; Curtis & Lockwood, 2000). In 1997, the national government announced its support for regionally-based NRM programs which would harness local efforts to assess major NRM issues and to prioritize response options. Subsequently across Australia a total of 56 NRM regions and 21 overlapping priority regions for salinity and water quality were identified for the purposes of commissioning scientific assessments, planning, and undertaking remedial programs on aspects of NRM at a regional scale. During the fifteen years from 1997 to 2012 (see Fig. 1), three significant federal programs were established, overlapping the local Landcare initiatives and other state-based programs (see ANAO, 2008; Lane, Robinson, & Taylor, 2009; Lockwood, Davidson, Curtis, Stratford, & Griffith, 2009; Pannell & Roberts, 2010): (a) the Natural Heritage Trust program from 1997, with an enhanced version from 2002 (NHT2); (b) the National Action Plan for Salinity and Water Quality (NAPSWQ) program from 2001; and (c) the federal Caring for our Country (CforC) program from 2008. State government departments were mixed in their welcome of regional collaboration models, especially since federal funding of regional activities was sometimes used as a strategy to limit state influence. The federal programs also required state contributions (deducted from the operating budgets of state departments), and implicitly called into question the value of the previous collaborations (Landcare and ICM) which the states had built up successfully over a long period with significant voluntary efforts by landholders. Fig. 1 summarizes the evolution of collaboration in Australian natural resource management programs.

On the one hand, the federal government could see the enduring benefits of improved land management arising from commitments to behavioural change inherent in local landholder initiatives. Inclusive and consultative approaches were seen as helpful in building shared responsibility between landholders, their communities, and the three levels of government (DAFF, 1999). On the other hand, the federal government felt entitled to shift its own policy goals from time to time, arguing that its role was to invest in high-priority targets or 'hot spots' rather than spend its scarce funds simply on building the capacity of local and regional organizations to undertake NRM planning and monitoring (Pettit et al., 2011; Robins & Kanowski, 2011). This stance by the federal government was reinforced by program reviews by the Auditor-General (e.g. ANAO, 1997, 2004, 2008) which emphasized the need for more precise objectives and measurable outcomes over time. In addition to changes in designated top-priority issues, the federal government became very focused on applying new economic instruments (economic incentives, pricing and trading) to shape the behaviour of landholders, especially in relation to the use of water for irrigated agriculture (e.g. Hajkowicz, 2009;

Download English Version:

<https://daneshyari.com/en/article/7460513>

Download Persian Version:

<https://daneshyari.com/article/7460513>

[Daneshyari.com](https://daneshyari.com)