

Commissioned research

NRM MODELS AND FRAMEWORKS

ADVANTAGES AND PITFALLS

Prepared by Dr Rod Griffith
Rod Griffith & Associates

For

Natural Resources Commission
NSW

Table of Contents

1	Introduction	4
1.1	Informing the NSW review processes	5
1.2	Purpose of the paper	6
1.3	The research approach	7
1.4	The key findings of the research	7
1.5	The structure of the paper	8
2	Decentralisation, regionalisation and regionalism in NRM	9
2.1	Administrative regionalisation	9
2.2	Democratic decentralisation	10
2.3	Civic regionalism	10
2.4	Benefits and pitfalls of civic regionalism	11
2.5	Tensions in decentralisation	12
2.6	Emerging theory	13
3	Types of NRM models and frameworks in use in Australia and other countries	15
3.1	A typology of models	15
4	Positioning the NSW NRM Framework in the typology	19
4.1	Characteristics of CMAs	19
4.2	Policy creep and power sharing in the NSW model	19
4.3	Similarities and differences between Australasian NRM models	20
5	Advantages of alternative NRM models	24
5.1	Democratic decentralisation models	24
5.2	Statutory regional authority models	26
5.3	Non-statutory community based regional delivery models	27
5.4	Emerging polycentric delivery models	29
5.5	Administrative decentralisation models	30
6	Conclusions and potential lessons	33
7	References and additional reading	35

1 Introduction

The Australian natural resource management (NRM) environment is undergoing yet another period of review and change. Since 2002 regional delivery through NRM groups with accredited catchment plans has been the cornerstone of national and state program delivery. A change of national government in late 2007 has resulted in a change from the Natural Heritage Trust (NHT) and National Action Plan for Salinity and Water Quality (NAP) to Caring for Our Country (CfOC) as the major NRM program. With the shift has come a different policy perspective and delivery model – the fourth shift in just over a decade. While the details are still being developed the new program will foster a more polycentric delivery approach in which regional NRM groups will still be agents but not the only delivery agent for pre-agreed outcomes against six national NRM priorities and program objectives¹.

At least three States in Australia in 2008 were also reviewing their regional NRM models for various reasons. In New South Wales (NSW) the Catchment Management Authority Act (2003) is due for a five year review, which has in part prompted this paper. In Victoria development of a new policy position on land and biodiversity management has prompted reviews of the adequacy of existing institutional arrangements². The WA government is also looking closely at efficiencies of the regional delivery model and the relationship with community based regional groups³.

Given the significant investment contribution made by national NRM programs to State and Territory NRM responsibilities, it is understandable that the new institutional arrangements for CfOC will be at the forefront of these considerations. However the CfOC commitment runs only until 2013. NRM is a long term social, ecological and economic issue characterised by considerable complexity. It would be inappropriate and imprudent to establish institutional arrangements in the States and Territories solely on the basis of fit with a short term funding program.

The economic and ecological environment is also facing significant change. Adapting to those aspects of climate change that are already in train will be a major challenge. Doing something positive about those aspects of climatic regime shifts that we can still influence is a further and urgent challenge. In the economic world the transition to a low carbon economy will present both challenges and opportunities for NRM at a time when there is shrinkage of public and private financial flows. Carbon trading like water and other natural resources trade is not well understood and the emphasis to date has been around the mechanisms not the outcomes. Whatever unfolds, regional variation in these challenges will be evident. Communities will bear the brunt of the impacts and will need to take an active part in understanding the issues as well as generating and implementing the ongoing response.

Getting the right institutional arrangements for NRM in NSW and the right thinking in place now to adapt to change and to transform if necessary will be of vital importance to communities and regional landscapes. The habitual response is to change the governance framework and institutional arrangements every time there is a change in the external operating environment. The alternative is to equip the system to endure through these periods of policy change.

¹ www.nrm.gov.au

² Victorian Government Green Paper

³ Personal communication with State Govt manager and Regional Council CEO

1.1 Informing the NSW review processes

In NSW the governance risks, efficiencies and effectiveness of the current regionally based delivery model for NRM are being reviewed and assessed, triggered by a legislative requirement for a five year review of the CMA Act (2003) and by changes to both economic conditions and national program delivery. Processes informing the review include:

- Auditing of seven Catchment Management Authorities (CMAs)⁴ by the Natural Resources Commission (NRC). The audits reported on CMAs' performance in prioritising investments to promote resilient landscapes; engagement of its communities; adaptive management; and contribution of its projects to improve landscape function. At the beginning of the audit process CMA governance was identified as one of the most critical, state wide issues warranting additional research.
- The NRC undertook interviews involving the Chair and General Manager of five CMAs.⁵ Some interview sessions also involved senior staff and individual Board members while one session included the whole Board. The interviews provide an inside out perspective on internal governance issues by CMAs and factors in the external operating environment of CMAs that may be affecting performance.
- Some specific governance risks relating to two CMAs have also been investigated by the Minister. Both of these reviews have been completed but not publicly released
- An efficiency and effectiveness review of CMAs and the regional delivery model was carried out by the Department of Premiers and Cabinet (DPC).

The NRC has requested that we explore whether any theoretical models or frameworks of NRM implemented in other jurisdictions in Australia or in other countries around the world could contribute to an improvement in governance, efficiency and effectiveness of the current NRM framework in NSW. This has been an iterative process taking into account the findings of the audits and governance interviews as they have emerged.

Initial findings from the NRC analysis of CMA governance from a CMA perspective suggest some serious structural and functional governance issues both internally and externally that need to be addressed to improve CMA efficiency and effectiveness within the current bounds of the CMA Act (2003). These include in broad terms:⁶

- some deficiencies in the internal governance of a small proportion of CMAs
- confusion over roles and accountabilities and a lack of direct relationship with the Minister
- CMA staff confusion around the multiple roles of DECC and multiple lines of authority
- inefficiencies in the current arrangements for delivery of support services to CMAs
- lack of whole of Government support processes and commitment to CMAs and their region's Catchment Action Plan (CAP)

⁴ The NRC has carried out audits of Border Rivers Gwydir, Central West, Hawkesbury Nepean, Hunter Central Coast, Lower Murray Darling, Murray and Western CMAs.

⁵ The NRC conducted interviews with Hawkesbury Nepean, Lower Murray Darling, Namoi, Northern Rivers and Southern Rivers CMAs.

⁶ Natural Resources Commission (2008).

- Inefficiencies and expedient rather than effective use of government investment due to rigid financial procedures and lack of funding continuity.

The risk to government programs and goals posed by these CMA governance performance issues taken in isolation is manageable at relatively low cost and leads most logically towards incremental improvement rather than radical reform of the framework. As a result a key recommendation from the NRC's recent *Progress report on effective implementation of Catchment Action Plans* aimed at improvement of CMA governance consistent with current legislation is to clarify roles and accountabilities within the regional model. The suggested steps to achieve this include establishing formal reporting mechanisms to the Minister, reviewing staffing arrangements, clarifying roles and responsibilities between CMAs and agencies and improving the level of service provision.⁷

For both of the first two negotiations it is considered that the NRC could play a useful facilitation role from both a knowledge perspective and as an independent body.

Whether the proposed dialogue follows a script of incremental improvement will be driven to a large extent by whether the risks identified by other governance reviews, the efficiency review and the effectiveness uncovered by the NRC audits are consistent in degree with the NRC findings on CMA governance. If so then the negotiations will be centred on minor structural and functional change generally within the scope of existing legislation though minor legislative amendments may be required. However, in the event that the risk from these additional review processes together amount to a significantly higher level of risk and poor fit with possible social, ecological and economic futures then the negotiations will need to expand in content to consider more substantial structural and functional reform.

Irrespective of which option eventuates there will need to be a significant change in thinking associated with the management of the State's natural resources to be able to prepare for predicted and largely unknown changes in the ecological, economic and social dimensions of the landscape.

1.2 Purpose of the paper

This paper is aimed at informing the debate over improvements to CMA governance both within the current legislative framework, in relation to the upcoming review of CMA legislation and the mid term review of the standard, targets and Catchment Action Plans.

The aim of the exploration is threefold:

1. to provide some background information to assist in the implementation of the recommendations that come out of the NRC's Progress Report and audits, the DPC's efficiency review and investigations into two CMAs
2. to articulate some of the institutional and administrative arrangements from other regional models and frameworks that may provide practical guidance should the dialogue remain about incremental improvement strategies rather than substantial legislative reform
3. to provide some theoretical critique and an analysis of the advantages and difficulties of alternative models in the event that the combined risk assessment from governance,

⁷ Natural Resources Commission (2008) p.31-32.

efficiency and effectiveness reviews logically leads to a call for more substantial institutional reform.

The paper stops short of recommending a model for NSW. It is important that big decisions such as changes to governance frameworks be deliberative. The paper concentrates primarily on broad framework design differences and principles but also includes some discussion of particular administrative arrangements that have worked well in other contexts.

1.3 The research approach

Dr Rod Griffith has been engaged by the NRC to assist in the compilation and evaluation of alternative NRM models. The analysis is based primarily on literature overviews and reviews, reference to pieces of legislation where readily available and on some personal communication with key practitioners and researchers in the NRM field.

The brief theoretical analysis looks first at different trends in governance and modes of decentralisation and civic involvement under neo-liberal notions of government then asks whether a statutory authority model within civic regionalism is an appropriate institutional approach to address degradation of natural resources.

The analysis of alternative frameworks is based around five guiding questions:

- How is the particular model different in structure, function and thinking from the NSW NRM framework?
- What advantage does the particular model provide to improve the identified internal governance issues of CMAs?
- What advantage does the particular model have over the current operating environment of CMAs in NSW?
- How would the particular model better enable CMAs and the NSW Government to engage with and benefit from a range of funding sources including Caring for Our Country investment?
- How would the particular model be likely to better position the NSW government to deliver on its goal of resilient landscapes and communities and State Plan E4 targets?

1.4 The key findings of the research

A broad review of the literature suggests that models in other countries are very similar to the range of models in use in Australia. The civic regionalism model that describes the current institutional arrangements and NRM governance framework in NSW is a well worn path and probably the most dominant of the various decentralisation models.

- No conceptually new models are evident that would invite unqualified recommendation for replacement of the statutory authority model in NSW.
- A favouring of more polycentric models is evident among governance theorists. This is a trend already observed in practice in NSW NRM and is characteristic of the new Australian Government Caring for our Country (CfOC) delivery model. Polycentricity is also reflected in adaptive governance and resilience thinking.

- Adapting to new national polycentric CfOC arrangements and the uncertain social, economic and ecological challenges on the horizon will require a mindset shift and possibly some functional experimentation and adaptation. Provided the governance issues are attended to, these changes to thinking and practice can be accommodated within the statutory authority model.
- The analysis (albeit limited) would also suggest that none of the tried and true alternative decentralised models or the return to agency delivery would offer much advantage to NSW in the uncertain times ahead nor that significant structural change should be immediately implemented.

1.5 The structure of the paper

- Chapter 2 introduces some key terms and theoretical discussion around decentralisation, devolvement and regionalism.
- In chapter 3 a typology of NRM models and frameworks from other jurisdictions in Australia and in other countries is developed.
- In chapter 4 the evolution of the NSW NRM framework and its positioning in relation to other jurisdictions and frameworks from other countries is illustrated.
- In chapter 5 the advantages and disadvantages of different NRM models are explored in relation to improvement of the NSW framework.
- Chapter 6 sets out some findings for consideration by the NRC.

2 Decentralisation, regionalisation and regionalism in NRM

Decentralisation particularly in NRM is generally acknowledged by most commentators as a world wide trend. The trend is apparent from the early post war period both in Australia and elsewhere. The motivation was economic development though at least one NRM body was established in Canada in this period. While the term is highly contested this decentralisation process can take a number of forms.

“Decentralisation is a term like sustainable development that shifts in meaning depending on the speaker”⁸.

Since the 1980s the driving forces behind decentralisation have taken on a different shape. Three big societal change agendas are in play; neo-liberalism (as an approach to government), sustainability (as concern over the future) and the social justice movement (concern over rights and equity). While these agendas seem strange and even paradoxical bedfellows they have effectively hybridised to produce new forms of governance.⁹

The neo-liberal project is about governing at a distance - shaping thought and action by indirect means and technologies rather than direct regulation. It is strongly market driven, aimed at productivity and wealth creation, and based on the idea of transferring responsibility from government to individuals. Hence NRM from a neo-liberal perspective is about local people taking responsibility for resources (degradation and improvement) while central governments maintain policy control and ‘responsibilise’ regional bodies through vertical accountabilities.

At the same time the sustainability agenda has opened up recognition of the need for more integrated approaches to the management of complex and inter-connected social-ecological systems while the tenets of social justice including citizen involvement are seen as necessary for more equitable access to resources and fairer distribution of benefits and risks.

2.1 Administrative regionalisation

The first interpretation of decentralisation is administrative regionalisation, where governments establish administrative regions from the top down. Some commentators call this de-concentration to emphasise that is a weak form of decentralisation. Under this model there are regionally based access points for stakeholders usually with some delegation of decision making to regional officers. Local communities often have their say in decision making through advisory structures.

This type of decentralisation is generally regarded in NRM as a failed approach. The perception extends to other policy areas characterised by wicked problems¹⁰ involving high levels of uncertainty and complexity, intractability and contextual variation. It is said that central governments are too remote, impose one size fits all approaches not attuned to local conditions

⁸ Larson A and Soto F. 2008. Decentralisation of natural resource governance regions. Annual Review of Environment and Resources 33.

⁹ Davidson J and Lockwood M. 2008 Interrogating devolved natural resource management: Challenges for good governance. In Lane, Robinson and Taylor (eds) Contested Country: Regional NRM in Australia, CSIRO publishing.

¹⁰ Defined by Rittel and Webber in 1973.

and have failed to deliver environmental sustainability¹¹. Nevertheless the option has been raised in all four recent reviews of state NRM frameworks in Australia¹².

2.2 Democratic decentralisation

In many parts of the world the responsibility for managing natural resources and sometimes, though not universally, the appropriate power and authority, have been devolved to lower level democratic governments at local or regional scales. This second interpretation of decentralisation is often called democratic decentralisation. The devolvement to local government or the New Zealand (NZ) Regional Councils are examples. The idea is that locally elected officials will be directly accountable for action - a point reinforced by Dovers¹³ and also by Lane¹⁴. In practice, particularly in third world countries, the results of devolution are less than notable. The NZ model is a shining light but not without its critics.

2.3 Civic regionalism

The third form of decentralisation, civic regionalism¹⁵, is partly a bottom up process driven by communities wanting more involvement in decision making. As a response decision making and implementation responsibility is taken up by civic actors rather than democratically elected bodies. The Landcare movement in Australia and forest management bodies in sub-Saharan Africa¹⁶ are examples.

Civic regionalism is also subscribed to by governments wishing to harness local knowledge, implementation pathways and feedback processes. In many documented cases governments have formalised what originated as a community initiative, such as, the National Landcare program and NHT1. However, less favourable interpretation of government support for civic regionalism is the desire to bring civil movements back under the control of government.

In some cases both top down and bottom up pressures occur more or less simultaneously, creating a productive space for change. The regional NRM groups first in NSW and Victoria then nationally in Australia, are examples of this type of decentralisation. Outside NRM, the Regional Development Agencies in the UK are very successful examples¹⁷.

Civic regionalism with both government and community involvement was the preferred model of the Wentworth Group of Concerned Scientists¹⁸ in the period 2003-4 and has been described as a paradigm shift in the Australian context so pervasive is its adoption.

¹¹ Lane M. 2006. Critical issues in regional natural resource management. Paper prepared for Australian SOE Committee

¹² Queensland Government, 2005. Options for future community engagement in regional natural resource management

¹³ Dovers ibid

¹⁴ Lane ibid

¹⁵ Lane M.2006 Critical issues in regional natural resource management. Paper prepared for Australian SOE Committee

¹⁶ Ribot Jesse.2003 democratic decentralisation of NR institutional choice and discretionary transfer of power in sub Saharan Africa Public Administration & Development 23.

¹⁷ www.englishsrda.com

¹⁸ Wentworth Group 2002 Blue print for a living continent: A way forward from the Wentworth Group of Concerned Scientists. WWF Sydney

2.4 Benefits and pitfalls of civic regionalism

An overseas study of common pool resources¹⁹ has identified the following positive aspects of civic involvement:

- Enhances access to local knowledge
- Harnesses informal institutional arrangements
- Enables feedback
- Affords rules that are better suited to local conditions than a general set of rules
- Increases legitimacy of rules and lowers enforcement costs
- Multiple units experimenting simultaneously reduce probability of failure for an entire region.

Despite being reinforced by a number of commentators these claims appear to be more theoretical than empirical in the Australian NRM context. However there are accounts of successes for this model. Lockwood²⁰ reports high levels of earned legitimacy through community engagement and transparency with good formal and informal accountability in regional bodies from NSW, Victoria and Tasmania. These same bodies are also implementing the social justice aspects of governance through procedural fairness.

According to Bellamy²¹ the outcomes of regionalism as it relates to NRM in Australia are:

- Regionalism is broadening the scope and scale of collaborations geographically, institutionally and at multiple scales
- New forms of participation are emerging where local people coordinate amongst themselves with less government control
- New networking configurations are connecting individuals, organisations, agencies and institutions at multiple organisational and political levels
- The central role for local government in NRM is gaining recognition through devolution and lack of capacity to take advantage is hindering participation
- New multi-source and collaborative knowledge mechanisms to link science, policy and society are emerging where previously science was external

Not all commentators are so positive. Lane for example is a strong critic of some of the key assumptions and claims²². In Australia there has also been an ongoing critique by the Australian National Audit Office of the lack of evidence of improvement in natural resource outcomes and criticism of governance and institutional arrangements.

The problematic aspects of civic regionalism identified in the literature include:

¹⁹ Ostrom E. 1999 Coping with the tragedies of the commons. Annual review of Political Science 2

²⁰ Lockwood et al 2007

²¹ Bellamy as previously

²² Lane M. 2006 Critical issues in regional natural resource management. Paper prepared for Australian SOE Committee

- No particular definition of regional is the right scale or conceptual basis to manage all natural resources²³.
- High levels of cross border interaction are required. Yet *'most multi-level systems of governance remain essentially mono-centric, with at least the key decisions undertaken through a centralised command structure'*²⁴. Lockwood²⁵ reinforces this view in the Australian context where there is rhetoric of community based decision making but in reality decisions are still made from the top down.
- There is usually insufficient devolution of power or resources to match the responsibility – key tactics by government agencies include implicit retention of power despite explicit policy positions and placing agency people on the inside of projects and decision making structures. *'Government personnel are usually reluctant to redistribute power and resources and frequently find ways to retain these even when the discourse and policies suggest otherwise'*²⁶.
- Larson and Soto²⁷ also note the reverse impediment. The process has been shown to not work well when there is no community driven push for greater involvement.
- There is a lack of representation on decision making boards as sectoral interests and in some cases local elites replace central elites leaving out some constituencies like the disadvantaged and indigenous groups. Some models based on representativeness are thought to entrench traditional power. In other studies legitimacy devolved by statute is considered to substitute for representation under conditions of accountability to an elected government.
- Concentration on upward accountability has been at the expense of downward accountability.²⁸
- Disparity of social capital between regions²⁹ - what Robins calls the haves and have nots.³⁰
- Lack of evidence that the model is more effective or efficient, can achieve the necessary integration or that community based boards will be better informed.

Most of these issues are about the quality of implementation rather than structural weaknesses in the model but the analysis does highlight a disparity between power sharing in theory and practice and the complexity of implementing models based on sharing of power across different scales and institutional levels.

2.5 Tensions in decentralisation

The tension between the different forms of decentralisation remains. As Ribot³¹ notes and the reviews of NRM in Australia illustrate, each approach has its supporters and detractors and the

²³ Many authors including Lane 2006,

²⁴ Marshall G. 2008 Nesting, subsidiarity and community based environmental governance beyond the local level. *International Journal of the Commons* 2/1

²⁵ Lockwood M. Davidson J. Curtis A. Griffith R. & Stratford E 2007 Strengths and Challenges of regional NRM governance: Interviews with key players and insights from the literature UTAS

²⁶ Larson A and Soto F. 2008. Decentralisation of natural resource governance regions. *Annual Review of Environment and Resources* 33

²⁷ Larson A and Soto F. 2008. Decentralisation of natural resource governance regions. *Annual Review of Environment and Resources* 33

²⁸ Ribot and many others

²⁹ Lane M *ibid*

³⁰ Robins L. and Dovers S. 2007 NRM regions in Australia: the haves and the have nots. *Geographical Research* 45 (3)

emphasis tends to oscillate from one model to another. In this respect, Larson and Soto make several key points:

- Governments do not generally decentralise or devolve power over key resources and particularly wealth generating non-renewable resources such as oil, gas, coal and minerals. Privatised co-management is a far more likely policy implementation mechanism for these resources. The preference of the model is thus also resource specific. This has implications for the review in NSW in relation to the commodification of water and implementation of integrated catchment management.
- Where civic regionalism or democratic decentralisation is adopted, implementation is rarely achieved in the way theory would suggest. Power balances, agency reluctance, the hybridisation of big societal driving forces, and the tendency for systems to self organise and find better structures and ways around inefficient structures are all factors.

2.6 Emerging theory

The literature is not all about critique or defence of particular intellectual positions. Some positive suggestions for improvement of existing models particularly around new forms of shared governance are emerging.

Adaptive governance is an approach that seems to embrace the best aspects and positive benefits of decentralisation and addresses many of the criticisms of current civic regionalism approaches in Australia. Adaptive governance has theoretical roots in a number of ways of thinking including complex systems theory, resilience thinking, network theory, and complexity theory. Davidson describes adaptive governance as how we govern our use of shared natural assets in a changing environment in ways that enable communities to adapt to change and avoid undesirable change³².

One strand of thinking within adaptive governance involves reconceptualising current multi-layered governance arrangements in systems terms as nested decision making systems³³. In the light of adaptive governance thinking, rather than being seen as the only decision making bodies in civic regionalism, regional NRM bodies like CMAs are reframed as the coordinating body at the regional scale and as one of the key decision makers in a multi-scale nested system. Scaling up has been a significant challenge for most sub-regional NRM groups and local communities³⁴. At the same time scaling down has not been achieved well by governments. It is the connections between the levels and different scales that are now challenging adaptive governance scholars³⁵ and that need urgent attention in practice.

The idea of nesting is seen as a potential way forward. In nested arrangements, higher level bodies are used to address problems not able to be dealt with at lower scales. In some ways regional groups and the JSCs are examples. However these bodies also often emerge even in regulated or designed systems like Australian NRM. The Chairs Council in NSW, the GMs sub-group on finance in NSW and the Qld Regional Collective are salient examples. The main

³¹ Ribot J *ibid*

³² Davidson, J. (2009) Adapting to climate change in non-coastal settlements: Planning for resilience, *Local Government planning for community in a changing environment*, Hobart, 25-26 March 2009.]

³³ Marshall G *ibid*

³⁴ Marshall G -- explaining the subsidiarity principle and its use in nested systems

³⁵ For example the expert panel for the UTAS project see Davidson 2005

attribute is that there is enough trust from lower levels that matters will be resolved appropriately. Some of these structures carry more trust than others. In some catchments the trust from local governments and Landcare groups in regional bodies including some CMAs is not well developed. Most JSCs also lack that trust due to perceptions of micro-management and failure to take local priorities into account.

Clearly the NSW Standard for Quality NRM is an early pioneer in drawing attention to the importance of scale in NRM decision making although the Standard does not extend into this new cross-scale and nested systems territory.

A second area of scholarly attention within the broad banner of adaptive governance is polycentricity involving a diversity of more or less autonomous decision making bodies. Early notions of polycentric decision making systems concentrated on localised decision making and the principle of subsidiarity – in which decisions should be made by the body closest to the problem. Multi-layered systems of governance like the regional delivery model embodied in the Natural Heritage Trust and National Action Plan for Salinity and Water Quality extended this idea while retaining hierarchical institutional arrangements. Attention has now turned to multi-layered polycentricity where the decision making and implementation bodies operate parallel multi-layered governance systems from national to local scales. Viewing the governance system in this way opens up the notion of a complex network of decision making and activity rather than a strictly hierarchical system.

Whether intended or simply as a by-product of a political preference for pluralism, this is the form that the new Caring for Our Country program delivery arrangements are recognising. The two big questions are whether bodies like CMAs that have until now performed bridging and coordinating roles in a relatively hierarchical system can maintain a similar functional role in this emerging highly networked world and whether the concentration of investment into icon assets can deliver resilient landscapes and communities. Work so far on NRM bodies' responses to recent institutional and impending biophysical and economic change suggests the former is possible. Resilience theory which is critical of both the quest for efficiency and lack of a systems approach would suggest the latter will be difficult to achieve.

A third area of intellectual pursuit within adaptive governance is the leadership role of CMAs in civic mobilisation of effort. While this role has been important under the existing regional delivery model, it becomes even more important in facing the significant changes to both landscapes and communities that global and regionalised shocks like climate change and economic cycles might bring. Good NRM governance is increasingly seen as involving two key capacities: adaptability or the ability to manage resilience in landscapes and communities, and transformability or the ability to manage a transformation to a whole new system of governance and resource use when it is obvious that the old system is untenable. In relation to these two capacities, leadership³⁶ is vital and includes the fostering of exploration of alternative future scenarios and the sort of networks that support them.³⁷

³⁶ The Resilience Alliance workbook for scientists demonstrates how to decide which type of change is appropriate

³⁷ See work by Olsson and colleagues on factors affecting readiness for change and particularly transformation

3 Types of NRM models and frameworks in use in Australia and other countries

Over 60 countries are reported to have experimented with regionalised arrangements for NRM³⁸. International overviews of NRM models have been produced by Robins and de Loe (Canada and Australia)³⁹, Kemper (case examples from Europe and other countries) and Campkin (South Africa, Brazil and USA).

Most of the models from other countries are very like those found in Australia. For example, Dent's description of the South African water management model has strong resemblance to the way community based NRM groups are structured in Tasmania, Western Australia (WA) and Queensland. Robins and deLoe describe the plethora of different arrangements in Canada that highlight the emerging role of decentralised bodies in NRM, including:

- 8 Watershed Planning and Advisory Councils (Alberta)
- Fraser Basin Council (British Columbia)
- 18 Conservation Districts (Manitoba)
- 4 Land and Water Boards (Northwest Territories)
- Planning Commission and Water Board (Nunavut)
- 36 Conservation Authorities (Ontario)
- 33 Watershed Organizations (Québec)
- 3 Regional Land Use Planning Commissions, 9 Renewable Resources Councils and Water Board (Yukon)

The trend is not restricted to western countries. India too has a devolution policy for watershed and community forest management.⁴⁰ As in Australia, each State sets its own institutional arrangements; however, only 5 or 6 have made serious attempts at democratic decentralisation. Many approaches are through local democratic bodies. Similar mixed results are noted from Bolivia and Africa countries including Mali and Cameroon

In Australia overviews have been prepared by Pannell, Walter Turnbull, Keogh, Robins, Lockwood, and Griffith among several others. As stated in the introduction to this paper the numerous descriptions of the national model are now largely out of date and some jurisdictions are reviewing their frameworks.

3.1 A typology of models

A typology of NRM frameworks drawing on the above literature sources has been developed and is shown in diagram 1. The initial criterion for separating models is the type of decentralisation indicated by the degree of reliance on regional delivery. There are four main

³⁸ Ribot J

³⁹ Robins L. and de Loe R. Decentralised governance for natural resource management: the Australian and Canadian experience Book chapter In Press (not for release yet)

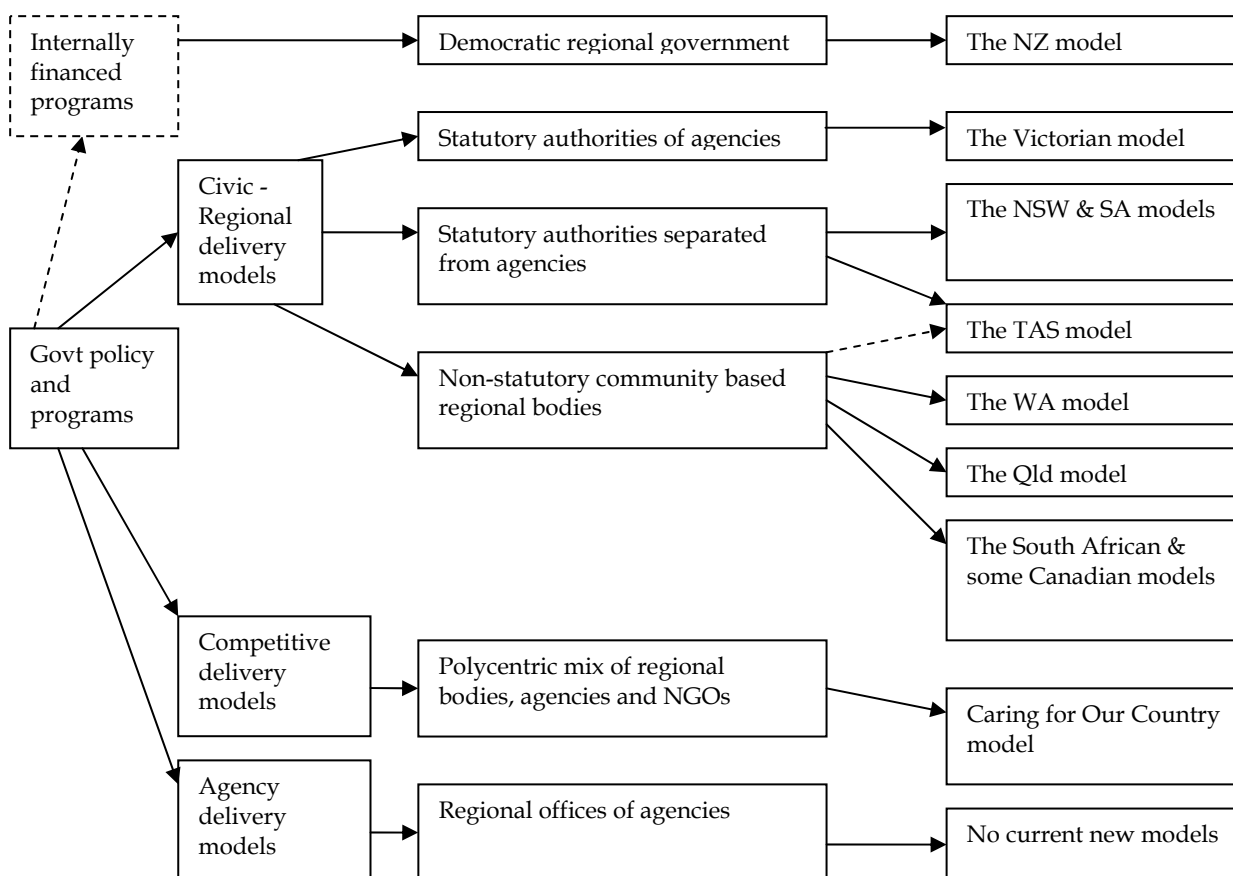
⁴⁰ Meyen W. and Doombos M. Decentralising now: A recipe for sustainability and equity. European Journal of Development Research 16 (1)

model types: democratic regional government, community based regional delivery, competitive, polycentric delivery, and decentralised or regionalised agency delivery. The middle two model types can be thought of as civic regionalism in practice.

Other important, though not mutually exclusive, variables include:

- the ideas or conceptual foundations which underpin each model and influence the size and boundary definition and civic composition of regions
- level of decision making autonomy from government and accountability structures. In the case of government ownership this includes the extent of regulatory powers devolved to regional bodies which influences both structure and function of bodies
- the type of board or council making decisions at the regional scale and its civic roots
- funding arrangements, business opportunities or freedoms to attract investment and resources
- length of time the model has been in operation or maturity of the framework and its regional organizations

Diagram 1: A typology of NRM models



Integrated catchment management or integrated watershed management is still the fundamental building block for regional NRM throughout the world. The term watershed is

used in Canada⁴¹, the USA and Europe while water management areas are the basis in South Africa⁴².

The organising concept behind current regional boundary setting in Australia and most other countries is river catchments. In NSW this is based around either major river catchment (such as Murrumbidgee) or a series of similar river catchments (such as Southern Rivers). In other parts of Australia the exceptions to this are the NT and ACT which are based on the administrative boundary of the territory and in WA where one region covers a significant part of the north of that State.

In NZ the boundary definition is similar to that of NSW although it does include adjustments for communities of interest.

Two alternative theoretical concepts are bioregional management⁴³ which has some associated practice in conservation and common pool forest co-management and an extension of the notion of civic regionalism called eco-civic regionalisation⁴⁴.

In Australia the jurisdictional models in the states are either statutory regional delivery (NSW, South Australia (SA) and Victoria) or community based regional delivery models (WA and Queensland) with Tasmania opting for a bit of each but can be regarded as primarily community based. The Territory models are evolving towards independent boards but are still heavily dependent on Territory government structures and processes⁴⁵. Some critical assessment has been undertaken of particular aspects of regional delivery such as board capacity⁴⁶, but the research team did not come across a strengths and weaknesses comparison of all eight jurisdictional models.

Locally representative or appointed governing boards are common features of regional NRM frameworks. In South Africa where there is a national approach to water management the regional boards are representative⁴⁷ of community interests. In Canada, like Australia, a mix of types from full government ownership to community based groups has emerged as each province has taken its own pathway to regional NRM. In NZ the regional organisations are fully democratic governments with elected officials. If boards exist under an agency driven model they are usually advisory.

Regional NRM bodies throughout the world, including CMAs, are highly reliant on government funding. They add value by leveraging against those funds via private and other public co-investors. Regional groups are therefore highly vulnerable to changes in government funding programs.

At least one regional body has been in place in Canada since the 1940s⁴⁸ though most regionalised NRM groups have emerged in the last 15 years or so. This emergence coincides with the hegemony that has developed around neo-liberalist interpretations of government and the strengthening of 'new governance' through hybridisation with sustainability and social justice principles. The Total Catchment Management approach in NSW was one of the very

⁴¹ Kemper

⁴² Campkin

⁴³ Berg P and Dasmann R. 1977 Re-inhabiting California, *The Ecologist* 7, no10

⁴⁴ David Brunckhorst and team at UNE have been working on different regional futures

⁴⁵ Griffith et al 2007 as part of a national study of business process improvement models in NRM

⁴⁶ Lisa Robins from ANU has studied board capacity and capacity building needs in NRM

⁴⁷ Dr Mark Dent presentation to NRC

⁴⁸ Robins and de Loe 2008 in press compares Australian and Canadian initiatives

early pioneers into decentralisation in NRM and has been progressively modified by neo-liberal drivers since that time.

As this brief overview illustrates there are many similarities between models here and overseas. These can be explained by considerable exchange of ideas between jurisdictions and countries. Each time there is a review of one jurisdiction's institutional arrangements, elements of other models or whole models are sometimes imported. In this way each new application learns from previous experience but has to be cognisant of contextual differences and the adage that one size fits all does not work in NRM. One example comes from Canada where a group of concerned scientists called the Gordon Group, drawing on the Wentworth Group model have made suggestions about a national NRM framework but it is yet to emerge in practice. In another example the NZ model is a source but not a complete match for the SA or Tasmanian models and so on.

NRM framework reviews are currently underway in Victoria and WA. In Victoria the review has been prompted by comments received from consultation around the Green Paper on land and biodiversity management. The review is in its early stages but is expected to expand to address the adequacy of existing governance and institutional arrangements for land and biodiversity management and by necessity address the response to CfOC. In WA the review is Treasury driven and is looking seriously at agency delivery as an alternative to regionalism. The Queensland Government conducted a similar review in 2005. All of the options listed in the typology were considered; however, it was decided to retain the community based regional model.

4 Positioning the NSW NRM Framework in the typology

The NSW NRM framework is an example of government sponsored civic regionalism in practice. The model is a statutory authority model, although the current form is the result of evolution over two decades. It is also an example of ongoing tension between top down administrative decentralisation and bottom up community processes and the paradox that occurs when different philosophical drivers result in hybrid solutions.

4.1 Characteristics of CMAs

NSW has 13 CMAs established under the *CMA Act* 2003. The regions managed by CMAs are river catchments or multiple river catchments defined by the Act. Each CMA has a Chairperson and skills based board of between 5 and 7 members appointed by the Minister. The Chair reports directly to the Minister and in principle the General Manager and staff report directly to the board. Boards have governing, operational and advisory roles. There are some prescribed general functions for CMAs and some prescribed governance requirements. Native vegetation regulation functions are set out under the *Native Vegetation Act* 2003.

CMA boards have no direct legislative relationship to the lead NRM agency, currently the Department of Environment and Climate Change (DECC). DECC is a large agency with many other responsibilities including the management of National Parks. Previously the Department of Natural Resources and before that the Department of Infrastructure, Planning and Natural Resources, DECC had assumed oversight of CMA operations for all but native vegetation functions. The relationship between CMAs and NSW agencies is set out in a Memorandum of Understanding and there are service level agreements to supply CMAs with shared government services.

4.2 Policy creep and power sharing in the NSW model

The NRC's *Progress report on effective implementation of CAPs* found some mismatches between good governance principles⁴⁹ and existing institutional arrangements established to implement the *CMA Act*. The clear lines of accountability and authority of the legislation have become blurred. There are now default arrangements in place that resemble an agency based statutory authority model (like VIC) rather than the model of clear separation of CMA and agency function intended in the legislation.

This is a well recognised phenomenon in governance studies known as policy creep⁵⁰ where incremental decisions and successive layering of controls make intended models less logically streamlined and less efficient over time. The reasons are complex but include that when new mechanisms are adopted the old ones are not removed, partly because some agency personnel may not agree with devolution or trust the organisation to which power should be devolved. Instead they develop mechanisms that effectively retain power while devolving responsibility. This situation is difficult to remedy from within as the power imbalance becomes entrenched preventing fair negotiations. Breaking this cycle requires an external driver.

⁵⁰ There are a number of sets but the one used here is Davidson et al 2006 later modified by Lockwood et al 2008

⁵⁰ Griffith et al 2007 but also many other authors.

4.3 Similarities and differences between Australasian NRM models

The federal system of government in Australia produces different institutional frameworks for many areas of government service delivery and policy. NRM is no different. However in NRM the presence of large, billion dollar national programs since 1997 has allowed federal influences on NRM governance to pervade and shape state and territory models. Table 1 compares the current institutional arrangements in NSW with those of other jurisdictions in Australia.

Table 1: State NRM framework characteristics (after Pannell et al)

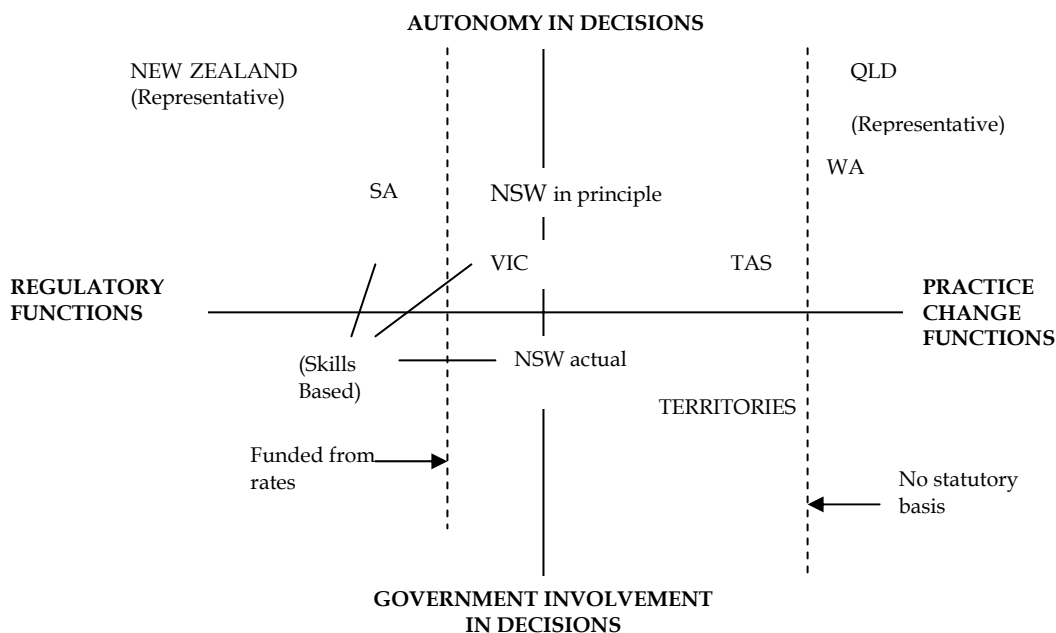
State	Title of regional body (number)	Status	Function and accountability *	Key State Agency
NSW	Catchment Management Authorities (13)	Statutory (CMA Act 2003)	Support Property vegetation plans under Native Vegetation Act 2003 Board reports directly to Minister	Department of Environment & Climate Change
VIC	Catchment Management Authorities (10)	Statutory (CALP Act 1994)	Beds, banks and floodplains of rivers Board reports to agency head	Department of Sustainability & Environment
WA	Regional catchment Groups or Catchment Councils (6)	Non statutory	Functions decided by the groups Report to stakeholders	Department of Agriculture & Food
SA	Regional NRM Boards (8)	Statutory	Water allocation planning, pests and weeds, soil conservation & biodiversity Board reports to Minister	Department of Land Water & Biodiversity Conservation
QLD	Regional Committees, Groups or Organisations (14)	Non statutory	Functions decided by the groups Report to shareholders and stakeholders	Department of Natural Resources & Water
TAS	Regional NRM Committees	Statutory	Required to nominate member to NRM Council and report annually to parliament.	Department of primary Industries & water

**All jurisdictional models share a common responsibility to engage regional communities and develop regional catchment strategies or plans.*

Diagram 2 also places the NSW framework in relation to other jurisdictional arrangements.

The tension between autonomy for regional decision making and government control of decision making forms the vertical axis. The horizontal axis is a tension between the dominance of regulatory functions and the development of social mobilisation within regions. This social mobilisation can be thought of as building social capital or community capacity for NRM.

Diagram 2. The NSW framework positioned in relation to Australian and NZ NRM frameworks



NZ regional councils are in effect a separate layer of government and have statutory planning powers as well as a number of regulatory powers. No regional body in Australia comes close to this status. SA is closest with several regulatory functions while Victorian (river health) and NSW (native vegetation) bodies have some regulatory functions. Queensland and WA regional bodies are not owned by the state and have regulatory functions. Tasmania's three regional bodies are hybrids with some state control yet community ties but no regulatory role, while the ACT and NT bodies are Territory owned but do not have regulatory functions. A pattern has developed that where regional bodies are either governments or are owned by governments that government has taken the opportunity to devolve agency regulatory powers to the regional body.

Boards in NSW, Victoria and SA are predominantly skills based. Some representation both geographically and of interest groups is still achieved and, according to some NSW CMAs, is actually sought when assessing applications for board member replacements. In Victoria the skills based board is complemented by sub-regional representative committees. Boards in all three states are positioned at the interface of community and government. That is they (in theory) have enough autonomy from government not to be perceived by community as government but sufficient linkages to allow feedback to government and to act as a delivery arm of government.

WA and Queensland regional bodies are positioned at the other end of the spectrum with community based boards. They are generally representative of local interests rather than having explicitly skills based boards. A similar situation exists in Tasmania with more government influence. This idea of representation (including the Victorian sub-regional committees) is not the same sort of representation as local government councils which are elected from the general population. Rather these community based boards and committees are representative of special interest groups in the community and usually only those that self nominate as stakeholder groups in NRM.

Of all the jurisdictions in this analysis only the NZ Regional Councils are elected by popular vote in the wider public arena. Each tier of government in NZ has clearly separated functions and powers including the ability to raise operating funding through rates and taxes levied on constituents. Provided they operate within the legal framework Regional Councils in NZ are able to operate without interference from the central government.

The statutory authority models have legislative provision for levies but these are applied sparsely or in the case of Victoria withdrawn. Direct private investment is minimal, although NRM Boards in SA do have financial management provisions that facilitate private investment. The non statutory community based groups do not have statutory fund raising capacity but are sometimes underpinned by local government, although they too have failed to generate significant private investment.

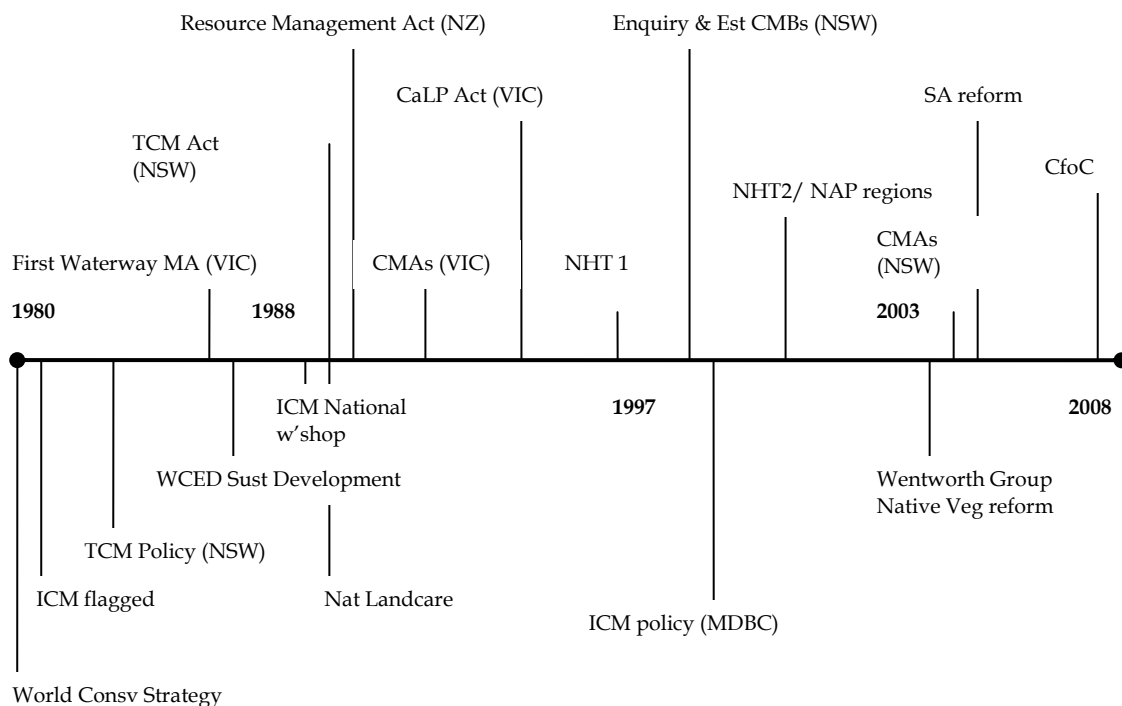
WA and Queensland NRM groups have considerable flexibility and freedom although all are bound by some fixed governance foundations. Some groups are charities and are bound by those constraints. Others are incorporated community organisations and some are registered businesses with obligations to comply with various private sector governance norms. Within their various charters, these groups are free to raise their own funds although they do not have access to levies, rates or taxes. For example some NRM groups have developed a consultancy arm to better implement their region's catchment plan though this raises governance concerns particularly around the use of public information. As a general rule though, NRM groups only survive financially through government investment, primarily national program investment.

NSW, Victorian and SA Boards are bound by public sector governance and accounting norms. All are legally able to raise funds through levies but this provision is currently blocked by the NSW and Victorian Governments⁵¹. SA boards can and do use this provision, however their legislation is more similar to the NZ structure which lends itself to a greater regulatory role and less of a capacity building role for regional bodies. Many CMAs in NSW and Victoria do access non-government funding but it is small compared to government investment. All NRM bodies in Australia work toward co-investment and leveraging of government investment.

In NSW there has been an evolution commencing with Catchment Management Committees (CMCs) through CMBs to the current CMA model. In Victoria CMAs have been in operation with some continuity for over a decade as have a few community based groups. These groups in Queensland and WA are leading the way in performance compared to more recently formed groups in their respective states and according to sources in Victoria there has been a steady improvement in performance over time from Victorian CMAs. It is likely that performance in NSW has been hindered in comparison by having to engage afresh with communities at each change of regional body (from CMCs to CMAs) despite acknowledged improvements to the system as that progression took place. The adoption of a regional delivery model under NHT2 and NAP led to a flurry of formation of new groups in Tasmania, SA, Qld and WA. Diagram 3 shows a timeline of the emergence of civic regionalism in Australasia.

⁵¹ Hunter Central Rivers CMA is the exception as it maintained its previous levy.

Diagram 3: Some important events in the evolution of regional delivery



An analysis of existing NRM frameworks in operation in Australia and overseas is undertaken in chapter 5 to assess whether any alternative models offer advantages over the existing NSW framework.

5 Advantages of alternative NRM models

The typology developed in Chapter 3 highlights four broad model types that form the basis of existing or hypothetical frameworks of NRM. These are: democratically decentralised arrangements, civic regionalism in a few forms, emerging polycentric delivery arrangements and a return to administrative decentralisation, perhaps in a new guise

Each of these broad models is assessed below in relation to the key evaluation questions identified in the introduction to this paper. These relate to advantages of various models for improving current governance, for engaging with external funding sources and for improving long term NRM outcomes.

5.1 Democratic decentralisation models

These models range from empowering democratically elected local governments to undertake NRM in the case of some African and South American countries to the establishment of a new arrangement like that in NZ that is closer to a regional government.

Local governments have been in operation in Australia for over 100 years. Despite Councils taking on environmental issues and gaining credentials in environmental management from the mid 1980s, no Australian government has sought to deliver NRM through local government⁵². One reason may be that governments do not want to shift more power to locally elected officials. That has not stopped commentators like Dovers from highlighting the opportunity missed. Such an option is still open. The strengths are place:-connectivity; administrative experience; capacity to raise funding; implementation capacity; and representation. The downsides include: parochialism; equally variable internal governance; the scale of many Local Government Associations; and the number of different bridging groups that would result.

The NZ model solves some of the weaknesses evident in Australia. It is regionally based and self funded and therefore not a model of delivery of centrally funded programs. Nevertheless, Regional Councils do deliver NRM services at the regional scale albeit mostly through regulation and control of land use and land management rather than incentive. This regulation is made possible by empowering Regional Councils as a separate layer of government and by introducing the principle that all land and water users must act in a sustainable manner. While this created much controversy in the early phases of operation of the *Resource Management Act* and still produces considerable argument today, the system has proved durable and there has been considerable improvement in some aspects of resource condition since the introduction of the Act. The viability of Regional Councils is underpinned by other non-NRM functions particularly their role as shipping port administrators.

Engagement of some sort with the planning system for NSW CMAs is emerging as a significant issue for many CMAs making the NZ model as attractive on that basis alone. The mode of decision making through democratically elected representation is also seen by some analysts and commentators⁵³ as a positive over skills based boards. While this model may satisfy current concerns over the lack of legitimacy in non-elected NRM decision making bodies in Australia,

⁵² We understand that the Wran government in NSW was considering a model based around consolidation of County Councils prior to the development of the NZ model however it was not pursued due to privatization of the electricity sector.

⁵³ See work by Steve Dovers from ANU on the key issues

in other ways it would undermine the trend towards adaptive governance with its new polycentric focus.

Introducing the same model in NSW would take considerable time, political effort and significant change to the planning system and to the agency system. The NZ model extends beyond just involvement/ control over land-use to a fully fledged government in its own right with a range of decision making powers conferred by legislation. In the Australian context such a shift would require the replacement of CMAs and other semi formal and informal regional structures with a single body and a radical shift in planning legislation. To complicate matters the planning system has just been reviewed in NSW with indications that the government will take further steps to remove regulation or 'red tape', making the processes more development friendly rather than more environmentally friendly.

The difficulties of introducing a new layer of government in Australia are also discussed by Brown and Bellamy⁵⁴. The change would most likely encounter major resistance from the very dominant neo-liberal view of government operating in NSW and most other jurisdictions and countries. The NZ *Resource Management Act* was introduced in 1991 relatively early in the development of the neo-liberalist and sustainability doctrines. It falls mid way between the phase of destruction of institutions that supported previous welfare based government and the realisation that a more positive supporting phase of institution building was required to reinforce neo-liberalism. In the later neo-liberal reforms around the world more market driven institutions were developed and many government functions have already been privatised. By 2001 when the regional model was adopted by the Australian Government for NHT2 and NAP programs, the experiment with incentive and market based approaches with little emphasis on regulation was in full swing. Despite challenges to many of the excesses of neo-liberalism the appetite for market based solutions seems undiminished.

Some Australian NRM frameworks have taken a strong interest in the NZ model. Both the SA and Tasmanian NRM frameworks, which were developed around 2004, draw on the NZ model but neither adopt its full suite of regulatory powers nor its mode of accountability to the people. The SA model starts with the same premise as the NZ RM Act that a person should not degrade resources and should act sustainably in relation to those resources. However, rather than invoke general planning powers, SA boards regulate through their specific resources functions. Neither of these models can deliver the full benefits associated with having statutory planning powers and compliance measures that are apparent in NZ and both rely on delivering incentives to landholders rather than regulatory compliance. One is skills based and the other is representative but neither is democratically elected as in NZ.

Irrespective of the implementation difficulties of establishing another layer of government, there seems little advantage to NSW in adopting a hybrid model. Internal governance issues would present differently but remain variable whether the board was skill based or community based. Experience with elected councils at the local scale in NSW and elsewhere shows variability in governance performance occurs in democratic models as well. Some form of oversight body would still be required. The relationship between CMAs and agencies as well as local governments would still require attention. These hybrids would probably have no competitive advantage over existing CMAs in relation to respect of CfOC.

In terms of delivery on NRM goals and State Plan E4 targets, planning powers of the type in place in NZ should help both directly by eliminating obviously unsustainable practices but also

⁵⁴ Brown and Bellamy have edited a recent book on federalism and regionalism in Australia. There are contributions from many different perspectives.

indirectly in assuring development and incentive driven change is on the same general pathway. In the absence of those powers, the hybrid model offers no real advantage since some consent authority powers are already available in principle to CMAs under existing sets of legislation. The only substantial benefits of a hybrid model would be if it is seen as an intermediate step to something more akin to the NZ model in the future.

The NZ initiative of developing a more commercial and/or self funded orientation is worth further examination. In the absence of a viable opportunity to adopt the full NZ model, this may take the form of a state owned corporation of some form. This type of structure may enhance viability of CMAs if functions that derive income and are compatible with NRM can be found. As a downside it would be highly unlikely that such independent commercial bodies would be given planning powers and most unlikely that CMAs with strong regulatory powers and commercial interests could effectively form partnerships for CfOC incentive delivery. Those other roles in that case would more than likely divert CMAs from their NRM business and therefore from delivering on the targets and goal of resilient landscapes and communities.

In summary the NZ model has some characteristics that may enhance community and landscape outcomes in NSW but only if implemented in full. The hybrid models do not offer the same advantages. The likelihood of implementation in the short term is very low.

5.2 Statutory regional authority models

The current NSW model is statutory based civic regionalism. Within Australia NRM boards in SA are similar to NSW in that they are also accountable directly to the Minister. Both differ from the Victorian CMA model in that they are not statutory authorities within an agency but separate entities responsible to the Minister rather than an agency head. However, in practice the NSW framework has shifted through some explicit and many implicit incremental changes to working arrangements more akin to the arrangement in Victoria.

The more recent SA model has followed a familiar pattern of consolidating a number of single-purpose regulatory boards into one catchment based board combining those regulatory functions. These include pests and weed control and some water management functions, soil conservation and some biodiversity responsibilities in addition to the delivery and planning of NRM services. Victorian CMAs are focussed on river and floodplain management and regulation roles although a review is currently under way in relation to land management and biodiversity functions⁵⁵. The funding that otherwise would have underpinned the single purpose boards in SA and agency programs in Victoria is redirected to CMA equivalents.

CMAs in NSW have argued for some time that some function in relation to water sharing and water management is necessary for integrated catchment management. Four CMAs already have a role in Land and Water Management Plans. However the ongoing commodification of water and increasing concern over water scarcity are strong incentives for agencies to retain control over this key resource. There is also a lack of certainty about how the new national water authority will negotiate and deliver outcomes on the ground. Delivery through CMAs has not been explicitly raised. The argument put forward by CMAs is quite compelling and current agency activity in regard to water may even be undermining the business and legitimacy of CMAs. The Victorian role for CMAs in water and river management is apparently not perfect though it may provide a model for greater involvement of NSW CMAs over time.

⁵⁵ Victorian Government Green Paper responses have apparently raised issues of whether existing institutional arrangements can deliver on land and biodiversity improvements

Beyond water regulation (or any of the other single regulatory functions performed by SA Catchment Boards) the next logical inclusion in NSW would be land-use planning functions. Provision for CMAs to become a consent authority in land use planning already exists in the CMA Act but has not been activated. Greater involvement of CMAs beyond the current patchy informal advocacy and advisory involvement could range from specific roles as assessors of natural resource condition through application of Property Vegetation Plans (PVP) and other PVP-like instruments for other resources in the development system through to some consent status or full planning functions as is the case in NZ. This is done as fee for service in NZ and similar arrangement could work in NSW.

In terms of internal governance there are provisions in the SA legislation worth looking at in relation to NSW. In particular the ability to hold and utilise moneys raised for purposes related to catchment plans (but not for profit) is vested in boards and they are not required to put these funds into consolidated government accounts. NSW CMAs have been requesting such a provision of a catchment trust for some time. CMAs argue that government funding is inadequate to implement the CAPs and private funding is a way of bridging the gap. The SA model is also similar to the CMA model in NSW in that boards report directly to the Minister. The arrangements in that state may give some guidance on how to achieve separation of agencies without burdening the Minister.

There are also several Victorian institutional arrangements that may help address governance deficits in NSW CMAs. Agreement by CMAs to a Statement of Obligations prepared by the Minister in which the Government's expectations of CMAs are articulated is one example. In NSW this would most likely be done individually for each CMA as in Victoria. Alternatively such a Statement could be negotiated collectively through the Chairs Council if that body gained more formal status. The compulsory preparation by CMAs of a corporate or strategic plan is one provision of the statements of obligation in Victoria that should be applied in NSW.

One advantage of the regulatory type of model is that multiple functions and their associated budgets help to maintain a critical administrative base that may not be viable through delivery of program dependent incentives alone. At the same time this reduces the load on agencies. The situation is similar to the way native vegetation functions work for NSW CMAs. However, more regulatory functions are unlikely to make a significant positive difference for CMAs in engaging with the Australian Government through CfOC. Indeed there is a possibility that it could impact negatively on the willingness of potential partners to enter into collaborations thus weakening the role of CMAs as bridging and coordinating bodies. A whole of government approach to investment through CMAs is in place in Victoria. However the RCIP process seems overly complicated. While the RCIP process is worth further examination, a similar process called the 'single pot' used in the UK regional development bodies⁵⁶ may be a simpler model

5.3 Non-statutory community based regional delivery models

At least two NSW CMAs see their mission as developing the social capital in their communities and among local governments to such an extent that if CMAs were to disappear NRM could continue. While that level of capital may emerge in the future, it is probably quite a few years away on the coastal side of the divide and in the distant future to the west. One option would be to provide a community based interim solution.

⁵⁶ See www.englishsrda.com for an explanation of single pot

The evidence from WA and Qld and to a lesser extent Tasmania demonstrates that community based regional NRM groups can function and survive over at least a decade without government ownership and on relatively high levels of volunteerism. A similar pattern can be found in some provinces of Canada⁵⁷. Recent regional bodies for water management in South Africa are based on a community model.

The role of community based NRM groups in WA and Queensland is not dissimilar to the non regulatory, social mobilisation role of statutory bodies in NSW, SA and Victoria. All community based groups including those in Tasmania are dependent to some extent on formal government investment programs and the leveraging of that investment with a range of public and private stakeholders to deliver NRM on the ground. Most are also dependent on at least one level of government (national, state or local) for part or all of their base funding.

The internal governance performance of community based regional groups is highly variable⁵⁸. Some commentators see the representative nature of some community based boards as an advantage over skills based boards from a legitimacy perspective however that view is not universal. In most frameworks the legitimacy earned is actually proving to be more important than the legitimacy conferred. Some community based groups combine representation and skills based boards. There are many different foundations of governance from charities to incorporated organisations to companies even within one State with a community based framework like the Queensland model. .

On current evidence no single mode of community based board composition or governance foundation seems to hold any advantage over the current model in NSW either in maintaining good governance or in achieving NRM outcomes. For example the assessment carried out by Vogel⁵⁹ on boards in Queensland indicates considerable variability in performance of regional bodies and some system deficiencies that need to be addressed. The ability to attract, train and retain quality board members and senior staff with strong leadership qualities are more likely to be factors in governance performance.

Cutting NSW CMAs free from government control would dissolve many of the governance issues in the external operating environment of CMAs but introduce new challenges for both former CMAs (they would not, and would not want to retain that title) and agencies. For example, the State would no longer be obligated to provide recurrent funding.

There is little or no advantage inherent in this model in relation to potential returns from CfOC. The community based bodies would have access to base level CfOC funding in the same way as CMAs would and if the Queensland system was adopted in NSW the NSW Government would need to continue to provide investment funding to achieve state NRM priorities. If the NSW Government did not contribute financially, over time the regional groups would become increasingly orientated to the Australian Government, leaving NSW agencies competing with other bodies in the state for funding and community engagement.

There is no evidence that community based regional organisations in other states or elsewhere are delivering better NRM outcomes than statutory based organisations. All 57 NRM regions in Australia seem to be grappling with similar conceptual and practical challenges.

⁵⁷ Robins and Robins and de Loe provide detailed descriptions of arrangements in many Canadian provinces

⁵⁸ For example Walter Turnbull, ANAO, Keogh, Vogel and Zammit

⁵⁹ Norbert Vogel and Charlie Zammit assessed the governance of QLD regional bodies against a set of business excellence based criteria.

There is considerable support among CMAs in NSW for retaining government involvement. This is not just about maintaining recurrent funding. Rather it is about continuous engagement of government in deliberative processes at regional and sub-regional scales, including land use planning, which may not happen as much or at all if the CMAs were cut free.

5.4 Emerging polycentric delivery models

The new CfOC program represents a shift away from reliance on regional NRM delivery to a more diverse, polycentric and outcomes targeted delivery model. Regional NRM groups will no longer be the sole agents of delivery or the sole brokers of leverage on Government investment in NRM. Nor will regional catchment plans and strategies be the sole focal point of Australian Government investment. Instead the Australian Government will split its funding. It will continue to support regional bodies with base level funding (albeit reduced from previous programs) provided regional investment strategies are aligned with national priorities.⁶⁰

The Australian Government will also provide funding on a competitive basis to organisations that are best placed to deliver outcomes. These organisations may be regional bodies, civil society organisations like NGOs and universities or they may be agencies. The outcomes and investor preferences and requirements will be more clearly articulated than in previous programs. The preferred project type will be large, focussed on national priorities and have multiple centres of activity combining to deliver multiple outcomes at a landscape scale⁶¹.

The implications for CMAs seeking competitive aspects of funding within this new polycentric delivery model include:

- the need to identify the areas of their CAPs aligned to national priorities as well as state priorities – in other words CAPs will become integrated across scales
- the need to embrace and become proficient in policy instruments favoured by national managers
- the need to enhance their capacity to work collaboratively and build partnerships both within the region and increasingly across regional boundaries and even state boundaries.
- those partnerships will need to involve organisations that may also be potential competitors (including NSW agencies) and offer advantages in efficiency and effectiveness to both partners and the Australian Government
- good governance including high levels of legitimacy and capability and high standards of corporate governance will be essential to building those partnerships and to both government and private sector investor and co-investor confidence.

Some CMAs may not find complete alignment between their CAP and national priorities over and above projects funded under the agreed regionally delivered component. In this case the value of engaging in the competitive component other than in capacity building may not be a

⁶⁰ In the transitional year (2008/09) regions will receive base funding amounting to 60% of previous funding levels. In the following four years each CMA will receive an average of about \$2.3 m in base funding from the Australian Government. There is a formula for calculating base funding, but it is not equitable across regions. See the Australian Government NRM website.
www.nrm.gov.au

⁶¹ Personal communication within the AG NRM Team

fruitful source of investment. Other CMAs may find higher levels of alignment and therefore greater opportunity to be involved in national scale partnerships.

The CfOC model provides little in the way of guidance to improve internal CMA governance. It will operate with agents based on many different corporate governance foundations. However it is apparent from previous national evaluations and recent public sector promotion of good governance that there is a high degree of conformity around expectations for public sector boards at national and state levels. Adopting and implementing the corporate governance requirements of the NSW government will most probably fit CMAs well for engagement in CfOC.

Good corporate governance by itself will be necessary but not be sufficient for CMAs to successfully engage with CfOC. The CfOC model is polycentric governance with multiple decision making centres at different scales. Understanding the principles of adaptive governance such as those set out by Bellamy and reinforced by Lebel will become important in both the internal capacity of the CMAs and the design of any external operating framework for CMAs.

The relationship deficiencies between State agencies and CMAs will also need to be resolved for NSW to maximise its return on national investment. The Australian Government intends to continue to engage with the States and Territories and will negotiate a new bilateral agreement and potentially a new more strategic role for the JSC. Two aspects of the agency/ CMA relationship will be important. The first is the role Treasury and other agencies should have in handling and administering the CfOC regional component base level funding. The options are direct payments by the Australian Government to the CMAs or continuation of direct payment in bulk to the NSW Treasury. In the latter option the complex intermediary role played by DECC will need to be resolved.

The second aspect is the nature of the relationship around the competitive component. Under a fully competitive model, agencies and CMAs would each develop their own separate strategies and bids. In this case there are serious governance issues involved if current agency involvement in CMA business remains, particularly the close financial links. The alternative is a partnership model in which the roles and state level outcomes are negotiated and bids are put together for mutual benefit. In either case a state NRM strategy that goes beyond the E4 targets to address scale sensitivity and nested asset identification and prioritisation would appear to be a positive step. This reinforces a role for CMAs as regional coordinators but also provides a sound basis for cross-scale investment and MER. The WA government and regional NRM bodies are undertaking a joint asset mapping and prioritisation exercise at present. This process is also serving to cement a partnership approach to CfOC and to clarify potential future roles of community based Catchment Councils in WA

5.5 Administrative decentralisation models

There is some evidence of a continuing tension between decentralised delivery of services (the top down process) and regionalism (the bottom up process). So far the trend to regionalism seems to be dominant and no conceptually new models of administrative decentralisation or centralised delivery in NRM have emerged in practice.

The models assessed so far assume that there is some form of regional body acting as a decision maker and bridging body in a more or less devolved governance structure. They assume that the big NRM experiment with devolved and even polycentric governance will continue with

trends towards more institutional players and greater networking, partnership and collaboration and what Walker & Salt call redundancy in governance structures. Strong arguments for new governance, environmental governance or adaptive governance systems in NRM have been put by Bellamy, Davidson and others stating that these systems are a response to the failure of traditional hierarchical governmental institutions which are increasingly unable to cope with contemporary wicked natural resource problems. They claim that traditional top down structures may be efficient in the short term but tend to fail when the circumstances under which they have developed suddenly change. Paradoxically more messy structures (including those with overlapping roles) perform better in such times of change according to Bellamy et al. It is hard to argue against the view that we are facing that very set of circumstances.

Notwithstanding these views the option of going back to agency delivery of NRM services has been raised in NSW and in other states. Not surprisingly it is an argument originating within either Treasury or lead agencies and is ironically couched in terms of efficiency. However there are differing views on the subject of efficiency. One of the key drivers of devolvement is said to be efficiency⁶². Another argument is that the drive for efficiency is in part at least responsible for declines in system resilience⁶³. We cannot find support for an agency delivery model in the literature. Returning to an old and failed model in which there is no community driven regional structures is difficult to support. Community based advisory bodies are one alternative though that is really what CMCs were in practice.

To be credible any agency based delivery model or model with stronger agency roles would have to be new. However there are few models around in NRM to provide guidance and little demonstration that agencies are comfortable with and supportive of the emerging polycentric and adaptive modes of governance. For example, no institutional arrangements have been developed in the water area to engage with the farming community, relying instead on centrally coordinated market based incentives to seek outcomes.

The NSW National Parks administrative model is an example of administrative decentralisation already in operation within DECC. Under that arrangement there are four branch offices each with management control over a number of regions. To implement such a model would formalise the trend toward treating CMAs as agency authorities and require that the Government accepts the retreat away from separation of CMAs from agencies.

The current situation in WA is the only contemporary one that we are aware of where a jurisdiction has both seriously questioned the credentials of the trend to regionalism and actively sought to return to agency driven decentralisation or centralised government delivery. We do not yet know the outcome of these deliberations but do know that Regional Catchment Councils are arguing strongly for continued regionalism with the acknowledgement that some quality assurance will be essential in future models. Where a similar tension was played out in Qld around 2005, evaluations resulted in a strong endorsement of regionalism and of their community based model⁶⁴. A more likely outcome in WA is a hybrid model where agencies take a stronger role in program delivery and the regional bodies further develop their engagement and planning skills. Just how the regional groups will or can engage in the competitive arena and whether they can survive on reduced funding levels is problematic.

⁶² Many commentators including Lane, Larson and Ribot.

⁶³ Walker 2006, 141

⁶⁴ Qld Government Green paper and rangelands evaluations see www.regionalnrm.qld.gov.au.

In the absence of a consultation process with the agencies and some indication of what new ideas are being considered and given the possible scenarios with CfOC, we cannot take this option further.

6 Conclusions and potential lessons

This paper does not recommend any particular alternative model of NRM for adoption in NSW. Rather it provides context for a deliberative process to negotiate the ongoing relationships between the NSW Government, NRM related agencies, the current CMAs and communities. As potential facilitators of this process it is important for the NRC to be informed on some of the history and the theoretical and practice trends in NRM in other states and countries. The following are worthy of consideration:

1. The literature analysis of NRM models from other Australian jurisdictions and other countries has uncovered no really new working models of NRM. The diversity of approaches in Australian jurisdictions is reflected within and between other countries. Integrated catchment management is still the common foundation stone of operational models and civic regionalism is the dominant model where multiple resources are involved.
2. Theoretical and empirical studies around decentralisation, regionalism and democratic forms of regionalisation have highlighted both pros and cons associated with different theoretical models. There is no perfect model for NRM. The emerging area with promise looks to be how inter-connectivity between scale-sensitive decision making centres in multi-layered and polycentric governance systems can be achieved. This could be achieved by experimenting with incremental change to the existing framework in NSW.
3. The democratic NZ model has appeal and works in that context. However it would be very difficult to replicate the conditions for introducing greater regulation in Australia that made it successful in NZ. Setting out to create a new layer of government in Australia would be time consuming, against the trend to more market based approaches and social mobilisation, and a risky strategy in the short term. As a long term strategy it is worth considering if the civic regionalism experiment is deemed to have failed.
4. Hybrid NZ and statutory authority models like the SA model are unlikely to offer enough advantage over the current NSW model to warrant legislative changes unless it was seen as a first step towards a statutory planning model. Other than the sustainability focus, the SA model is similar enough to NSW so as not to create any short term advantage for CfOC funding and not different enough for long term advantage.
5. While removing government control of CMAs and facilitating a transition to community based groups may have appeal to those seeking to cut government funding for administration, in NRM terms the shift has no evident advantage.
6. There is still a tension evident between agencies and regional bodies in most states. This leads to periodic calls for retreat to decentralised agency delivery. We were not able to find any substantial reasons why this failed approach would work in the current or future NRM environment. Nor were we able to find evidence of any new agency models either in action or conceptually articulated that are tailored to new polycentric governance systems. The closest model would be CfOC but that is not agency delivery as such and actually advances the trend to more diverse civic devolution.
7. CfOC has already had a significant impact on funding levels for CMAs and other regional NRM groups around Australia. Most groups are entering deeply reflective periods about their futures. A more polycentric governance model is emerging both by

government design and in practice. CMAs will need to adapt to this changing environment and will need well developed strategic and management skills to engage with and be effective in this new environment. However they will also need to carve out a new niche. If they do not have sufficient legitimacy offered by government investment then legislative legitimacy and the legitimacy they have earned through community engagement, transparency of action, accountability and delivery performance will mean little.

8. From a purely NRM logic perspective there seems few advantages and numerous disadvantages in changing the fundamental governance model that underpins the NSW NRM framework at this time. Regional delivery through CfOC will continue for five years. During that time taking steps to work on the governance and management skills in CMAs and a concentration on adaptive governance and particularly inter-connectivity in the developing polycentric system will prepare CMAs for a more uncertain future both in relation to functional roles and in managing resilience in communities and landscapes.
9. In relation to the key governance issues that need attention in NSW, the ministerial/board relationship and provision for holding private monies in SA, statement of obligations and service provision models in Victoria and the 'single pot' funding model from Regional Development Agencies in the UK are examples of administrative arrangements that work well in other applications of the civic regionalism model.

7 References and additional reading

- Allan C & Curtis A (2005) Nipped in the bud: Why regional scale adaptive management is not blooming. *Environmental Management* **36**, 414-425.
- Armitage D. (2005) Adaptive capacity and community-based natural resource management. *Environmental Management* **35**, 703-715.
- Australian Government (2008) 'Caring for our country.' <http://www.nrm.gov.au>
- Australian National Audit Office (2008) *Regional delivery model for the Natural Heritage Trust and the National Action Plan for Salinity and Water Quality*. ANAO Audit Report No. 21 2007-08, Canberra.
- Bellamy J. (2006) Adaptive Governance: The challenge for regional natural resource management, In Brown and Bellamy (eds) *Federalism and regionalism in Australia* ANU Press
- Bellamy, J. A. and Johnson, A. K. L. (2000) Integrated resource management: moving from rhetoric to practice in Australian agriculture. *Environmental Management*
- Berg P and Dasmann R. (1977) Re-inhabiting California, *The Ecologist* 7, no10
- Brown A.J. (2006) Federalism, regionalism and reshaping of Australian governance. In Brown and Bellamy (eds) *Federalism and regionalism in Australia* ANU Press
- Brunckhorst D. (2004) Integration research for shaping sustainable regional landscapes. *Journal of Research Practice* 1(3)
- Bulkeley, H. (2005) Reconfiguring environmental governance: towards a politics of scale and networks. *Political Geography* **24**
- Cash, D. W., Adger, W. N., Berkes, F., Garden, P., Lebel, L., Olsson, P., Pritchard, L. & Young, O. (2006). Scale and Cross-Scale Dynamics: Governance and Information in a Multilevel World. *Ecology and Society*, 11(1), 8.
- Curtis, A. and Lockwood, M. (2000) Landcare and catchment management in Australia: lessons for state-sponsored community participation. *Society and Natural Resources* **13**
- Davidson, J. (2009) Adapting to climate change in non-coastal settlements: Planning for resilience, *Local Government planning for community in a changing environment*, Hobart, 25-26 March 2009.]
- Davidson J and Lockwood M. (2009) Interrogating devolved natural resource management: Challenges for good governance. In Lane, Robinson and Taylor (eds) *Contested Country: regional NRM in Australia* CSIRO publishing, in press.

- Davidson J, Lockwood M, Curtis A, Stratford E & Griffith R (2007) *NRM governance in Australia: NRM programs and governance structures*. UTAS, Hobart.
- Fenton M and Rickert A (2008) *A national baseline of the social and institutional foundations of natural resource management programs*. Canberra: NLWRA.
- Folke, C., Hahn, T., Olsson, P. & Norberg, J. (2005). Adaptive Governance of Social-Ecological Systems. *Annual Review of Environment and Resources*, 30
- Griffith, R. Dean, J. Curtis A. Parton K. Hanlon G & Green (2007) *Exploring key attributes and standards of a model for quality assured regional NRM*. Final report to Land and Water Australia, Canberra
- Hajkowicz S. (2008) The evolution of Australia's NRM programs: Towards targeting and evaluation of investment Land Use Policy. In Press
- Head B. (2005) Participation or co-governance? Challenges for regional natural resource management. In Eversole and Martin (eds) *Participation and governance in regional development: Global trends in an Australian context*.
- Head B & Ryan N. (2004) Can co-governance work? Regional natural resource management in Queensland, Australia. *Society and Economy* **26**, 361-382.
- Hillman M & Howitt R. (2008) Institutional change in natural resource management in New South Wales, Australia: Sustaining capacity and justice. *Local Environment* **13**
- Imperial, M. (2005). Using collaboration as a governance strategy - Lessons from six watershed management programs. *Administration & Society*, 37(3), 281-320.
- Innes, J. E. & Booher, D. E. (1999). Consensus Building and Complex Adaptive Systems: A Framework for Evaluating Collaborative Planning. *Journal of the American Planning Association*, 65 (4), 412-423.
- Jennings, S. J. and Moore, S. A. (2000) The rhetoric behind regionalisation in Australian NRM: myth, reality and moving forward. *Journal of Environmental Policy and Planning* **2**
- Kemper KE, Blomquist W & Dinar A (2007) (Eds) 'Integrated river basin management through decentralization.' Springer: Heidelberg, Germany.
- Keogh K, Chant D & Frazer B (2006) 'Review of arrangements for regional delivery of natural resource management programmes: Final report.' Ministerial Reference Group for Future NRM Programme Delivery, Departments of Agriculture, Fisheries and Forestry and Environment and Heritage, Canberra.

- ¹Lane M. (2006) Critical issues in regional natural resource management. Paper prepared for Australian SOE Committee
- Lane, M. B., McDonald, G. T. and Morrison, T. H. (2004) Decentralisation and environmental management in Australia: a comment on the prescriptions of the Wentworth Group. *Australian Geographical Studies* **42**, Larson A and Soto F. (2008) Decentralisation of natural resource governance regions. *Annual Review of Environment and Resources* **33**
- Lebel et al 2006 Governance and the capacity to manage resilience in regional social-ecological systems *Ecology and Society* **11**
- Lockwood M, Davidson J, Griffith R, Curtis A & Stratford E (2008) Governance standard and assessment framework for Australian NRM. UTAS Hobart
- Lockwood M, Davidson J, Curtis A, Griffith R & Stratford E (2007) 'Strengths and challenges of regional NRM governance: Interviews with key players and insights from the literature.' Report 4 of the project Pathways to good practice in regional NRM governance. University of Tasmania, Hobart.
- Marshall G. (2008) Nesting, subsidiarity and community based environmental governance beyond the local level. *International Journal of the Commons* **2/1**
- McGinnis, M. D. (2005). Costs and Challenges of Polycentric Governance, Prepared for discussion at the *Workshop on Analyzing Problems of Polycentric Governance in the Growing EU*, June 16-17, 2005, Humboldt University, Berlin.
- McGinnis, M. Woolley, J. and Gamman, J. (1999) Bioregional conflict resolution: rebuilding community in watershed planning and organizing. *Environmental Management* **24**
- MDBMC (2001) Integrated Catchment Management Policy Murray Darling Basin Commission, Canberra
- MOU -A catchment management partnership between CMAs and NSW NRM and Environment State Government agencies
- Meyen W. and Doombos M. Decentralising now: A recipe for sustainability and equity. *European Journal of Development Research* **16** (1)
- Moore S.A and Rockloff S.F (2006) Organizing regionally for natural resource management in Australia: Reflections on agency and government. *Journal of Environmental Policy & Planning*, Volume **8**, Issue 3
- Morrison T & Lane M. (2006) The convergence of regional governance discourses in rural Australia: Enduring challenges and constructive suggestions. *Rural Society* **16**, 341-357.
- Natural Resources Commission (2007) An introduction to the Standard for Quality NRM : For all those involved in NRM NRC Sydney

- Natural Resources Commission (2008) Progress report on effective implementation of Catchment Action Plans NRC Sydney.
- Olsson et al (2006) Shooting the rapids: Navigating transitions to adaptive governance of social-ecological systems. *Ecology and Society* **11**
- Ostrom E. (1999) Coping with the tragedies of the commons. *Annual review of Political Science* **2**
- 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", SIF3 Working Paper 0701, CRC for Plant-Based Management of Dryland Salinity, Perth.
URL: <http://cyllene.uwa.edu.au/~dpannell/cmbs3.pdf>
- Queensland Government, (2005) Options for future community engagement in regional natural resource management. DNRE, Brisbane.
- Reeve I & Brunckhorst D. (2007) Spatially bounded regions for resource governance. *Australasian Journal of Environmental Management* **14**.
- Reeve I, Marshall G & Musgrave W. (2002) 'Resource governance and integrated catchment management: Issues paper No 2.' Institute of Rural Futures, University of New England, Armidale, NSW.
- Ribot, J. C. (2002) *Democratic decentralization of natural resources: institutionalizing popular participation*. World Resources Institute , Washington D.C
- Ribot Jesse (2003) Democratic decentralisation of NR institutional choice and discretionary transfer of power in sub Saharan Africa. *Public Administration & Development* **23**.
- Robins L (2008b) Nation-wide decentralized governance arrangements and capacities for integrated watershed management: Issues and insights from Canada. *Environments* **35**, 1-47.
- Robins L (2007) Major paradigm shifts in NRM in Australia. *International Journal of Global Environmental Issues* **7**, 300-311.
- Robins L. and de Loe R. (in Press) Decentralised governance for natural resource management: the Australian and Canadian experience. Book chapter In Press (not for release yet)
- Robins L & Dovers S (2007a) Community NRM boards of management: Are they up to the task? *Australasian Journal of Environmental Management*, **14**, 111-122.
- Robins L & Dovers S (2007b) NRM regions in Australia: The 'haves' and the 'have nots'. *Geographical Research* **45**, 273-290.
- Vogel N & Zammit C. (2004) *Performance Excellence Guide for NRM management organisations*
USQ

- Walker B. and Salt D. (2006) *Resilience Thinking: Sustaining ecosystems and people in a changing world*. Island Press
- Wallington T.J. & Lawrence G. (2008) Making democracy matter: Responsibility and effective environmental governance in regional Australia. *Journal of Rural Studies* **24**, 277-290.
- Wallington T.J, Lawrence G. & Loechel B. (2008) Reflections on the legitimacy of regional environmental governance: Lessons from Australia's experiment in natural resource management. *Journal of Environmental Policy & Planning*, **10**, 1-30. Walter Turnbull (2005) *Evaluation of current governance arrangements to support regional investment under the NHT and NAP*. Departments of Environment and Heritage and Agriculture, Fisheries and Forestry, Canberra.
- Wentworth Group (2002) *Blue print for a living continent: A way forward from the Wentworth Group of Concerned Scientists*. WWF Sydney
- Whelan J. & Oliver P. (2005) Regional community-based planning: The challenge of participatory environmental governance. *Australasian Journal of Environmental Management* **12**, 126-135.