



HC Coombs Policy Forum NRM initiative

NRM Literature Review (Document II)¹

This document presents a review of the literature on Natural Resource Management (NRM) policy and planning in Australia. It is the second document in a three-part series produced as part of a joint initiative by the HC Coombs Policy Forum and the Fenner School of Environment and Society at The Australian National University. The first of the documents provides background to the initiative and a synthesis of the broad issues and opportunities for integrated regional NRM policy and planning in Australia. The synthesis draws upon the Literature Review presented below and discussions from the workshop (see Document III) that brought together NRM professionals representing a range of stakeholders across the NRM sector.

1. Introduction

Over the past three decades, the Australian Government, in partnership with State and Territory governments, has undertaken ambitious experimentation within Natural Resource Management (NRM) policy and programs. The aim has been to establish programs that are positioned to use public funds to best effect in achieving valued NRM outcomes. One of the most significant elements of the experiment has involved a decentralisation of NRM planning down to the regional scale: the establishment of the so-called 'regional NRM delivery model' (regional model) which has been formally in place since 2003. Regional NRM delivery concerns all aspects of natural resource management planning, investment, coordination, engagement, and evaluation. This so called regionalisation of NRM in Australia has taken place in the context of a much broader interest in regional governance across a range of policy sectors globally (Morrison 2007).

In the period 1990 to 2013, \$A6.51 billion in public funds will have been directly invested by the Australian Government to address national NRM priorities (Hajkowicz 2009). This is an internationally significant level of public investment, and has promoted claims of great achievement as well as criticism of gross under-achievement. Is the glass half-full or half-empty? An expansive NRM literature has developed around such a question, reviewing and scrutinising the performance of the Australian Government's NRM programs, and the regional model in particular. The literature includes: peer-reviewed journal articles across disciplines such as public policy, human geography, sociology, and economics; government-commissioned program reviews; reports from parliamentary inquiries; independent audits under the Australian National Audit Office; and extensive grey literature from project reports to web-blogs.

The published, peer-reviewed NRM literature is extensive but there are some areas not well represented that are of interest as the Australian Government negotiates its future NRM commitments

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and programs. The gaps can partly be attributed to the fact that research is most often positioned externally to government; this provides scope to scrutinise the performance record of government programs but can also mean that there is restricted understanding of the Government's evolving and adaptive decisions and priorities within NRM programs. This positioning can mean that some of the critical and contemporary challenges for government are not specially captured within the literature, or that the recommendations made can be impractical or outdated. Several contemporary issues identified as important within this HC Coombs Policy Forum NRM initiative were not found to be well represented in the literature.

One area not well represented in the literature concerns the opportunities for and value from the integration of regional NRM planning with other cross-sectoral programs, processes and policies. This includes opportunities to integrate NRM planning with other regional-level planning frameworks such as IBRA regions; land use planning; health and community planning; and statutory water plans at the sub-state level. In addition, understanding the scope and need for improving the integration between NRM and other national policy processes such as EPBC review, the National Water Initiative, Wildlife Corridors and the Carbon Farming Initiative, was also found to have limited representation in the literature reviewed. Another related area that was found to have limited representation in the NRM literature is cross-sectoral comparisons of regional governance arrangements and performance. This was an area of interest identified by the Reference Group in the scoping stages of the literature review. For example, seeking lessons from the health or emergency management sectors where there is Commonwealth interest, involving devolved regionalised policy and processes.

In the scoping stages of the literature review, the Reference Group also highlighted interest in whether the NRM literature could offer insights into questions about the scope and rationale for regional NRM bodies to build capacity through a more self-sustaining and broader funding base, such as through leveraging investment from the community, NGOs, and the private sector. Assessment of existing or future capacity and performance around such funding and capacity opportunities was not found to be well represented in the NRM literature.

A final area that seems to be underrepresented in the NRM literature, but which was identified in the NRM Initiative to be a crucial consideration, concerns the influence of public policy process and government administration on the effectiveness of the design and delivery of NRM programs. This includes consideration of how funding cycles, forward estimates, transient departmental staffing, and changes to government can affect the capacity of Commonwealth (and other levels of government) departments to respond to the recommendations arising from NRM program reviews.

The review of the literature presented below begins with background to the different dimensions and tensions that have emerged in the NRM agenda in Australia over the past few decades. Secondly, an overview is presented of the Australian Government's evolving NRM programs as they have been captured, reviewed and evaluated in the literature. Finally, leading themes and issues dealt with in the literature are presented; these were used as the basis to guide the discussions in the workshop (see Document III).

2. The emergence of an NRM agenda

The National Conservation Strategy for Australia that was established in 1983 is marked as the beginning of a national, cross-jurisdictional policy response to natural resource management in Australia (Marshall 2011). The emergence of an NRM agenda, and the NRM programs that have followed, have both reflected and influenced changing community expectations of the agricultural sector.

The Australian Government's NRM policy response in the early 1980s was reflective of a fundamental shift in societal expectations of agriculture, from a stand-alone commodity-based industry to one that has social, economic and environmental responsibilities (Gray and Lawrence 2001; Holmes 2008). There are complex social and political drivers underpinning such changes, but part of the change can be attributed simply to the reduced importance of the agricultural sector to the Australian economy², juxtaposed with the fact that agriculture nonetheless accounts for 60 per cent of the land resources in Australia (Hajkowicz 2009).

² In 1901 agriculture accounted for 20 per cent of Australia's GDP and it now stands at around 3 per cent.

The findings from evaluations of the outcomes from NRM programs over the past 30 years indicate that the NRM programs themselves have also influenced societal expectations of agricultural industry; particularly expectations within the industry itself. The awareness-raising or so-called 'social learning' outcomes from NRM programs are some of the most fundamental and sustained outcomes attributed to the Australian Government's NRM programs (eg as reported in program reviews: SCARM 1997; Natural Heritage Trust 2000; Hassall and Associates 2005; Keogh, Chant et al. 2006).

Some more critical perspectives have questioned the narrowness of the agenda shaped by Australia's NRM programs. Some have suggested that the NRM programs have effectively reframed the natural environment from an "integrated ecological conception to a more utilitarian concept with a triumph of the brown issues such as salinity and soil erosion" (eg Lane, Taylor et al. 2009). A more 'holistic' agenda would be balanced with concern about interactions between agricultural land management, habitat loss, river health, and ecosystem resilience. This reflects a consistent tension in the regional NRM literature and practice which is about the definition of the field. Is it about an integrated environment-society-economy agenda, inclusive of a very wide range of society's aspirations for two-thirds of the continent? Or about a more tightly defined agenda of adding environmental sustainability to agricultural practices, as much to maintain the viability of production as to achieve ecological goals?

These tensions become particularly salient with respect to the inclusion of Indigenous people's priorities and values within the NRM agenda. A number of past studies have documented sustained marginalisation of Indigenous people within the NRM agenda (eg Lane and Williams 2008; Carter and Hollinsworth 2009; Hill and Williams 2009; Lane and Williams 2009). This has been explained as a consequence of two interrelated issues: funding equity and regional community engagement processes. Concerns have been raised about the consequences of such marginalisation for natural assets across regional Australia and for Indigenous health and wellbeing (see Garnett et al. 2009; May 2010).

Carter (2009) and others explain that Indigenous connection to country goes beyond the 'spiritual' and 'traditional' and is based on ongoing and contemporised connections and interests. This includes interests in the conservation of natural and cultural heritage, but extends to interests in a "portfolio of natural resources activities typically found in rural areas (such as mining, grazing, forestry, water allocation planning, and natural resources service delivery and enterprise development)" (Carter and Hollinsworth 2009, p.414). The strong connection between employment and training in NRM and health and wellbeing of Indigenous people is another area that has not been well understood within the regional NRM sector and literature (Lane and Williams 2008; Carter and Hollinsworth 2009).

Consultation with Indigenous people has occurred within regional NRM planning processes, as a requirement, but research suggests that regional bodies have found it difficult to translate consultation to tangible outcomes for Indigenous people and final plans have often had limited relevance to Indigenous people. This problem is related to the issues discussed above in terms of misunderstanding about Indigenous interests in NRM, but it has also been linked to inadequate consultation processes that have precluded meaningful Indigenous participation.

Some of the leading research around the issue of Indigenous marginalisation is discussed in this document in brief, but there is not scope to provide a detailed review of what are highly complex and systemic issues. May (2010) provides a comprehensive review of the emergence of an Indigenous-focus within the mainstream NRM agenda – referred to as Indigenous cultural and natural resource management (ICNRM). The paper articulates an extremely complicated historical, social and cultural context, with an array of institutions involved, funding sources and funding conditions. A review of the literature on these issues that is led by experts in the field would be required to adequately identify the current state of knowledge about future challenges and opportunities for the Australian Government as it works to embrace the needs and priorities of Indigenous people within its NRM programs.

The next section provides an overview of the key programs that have been shaped around Australia's evolving NRM agenda.

3. The Australian Government's evolving NRM programs

On the whole, the NRM literature has paid significant attention to the governance arrangements through which the NRM agenda is shaped, and how this reflects upon the legitimacy of the agenda. Lane et al. (2009) place the Australian Government's evolving NRM programs within a more significant shift in the role of government and the 'shrinking state' which made way for an increased emphasis and role for civil society groups and community-based organisations. This may be the case, but billions of dollars of public monies continue to be allocated by government and the various roles, responsibilities and accountabilities across scales and jurisdictions remain contentious within the Australian Government's NRM programs.

Figure 1 provides one version of the recent history of the Australian Government's NRM programs. Other versions of the same history may emphasise different points of change or influence (eg see Campbell 1996; Robins 2007; Griffith 2009), however Hajkowicz's summary is taken as a helpful framework to review some of the key changes that have occurred in the Australian Government's NRM program. Starting from the 1990s, there have been four major Commonwealth initiatives: 1) The National Landcare Program (NLP) (1990-1996)³; 2) The National Heritage Trust Phase-I (1996-2002); 3) The National Heritage Trust Phase-II and the National Action Plan for Salinity and Water Quality (2003-2008); and 4) Caring for our Country (2008-2013).

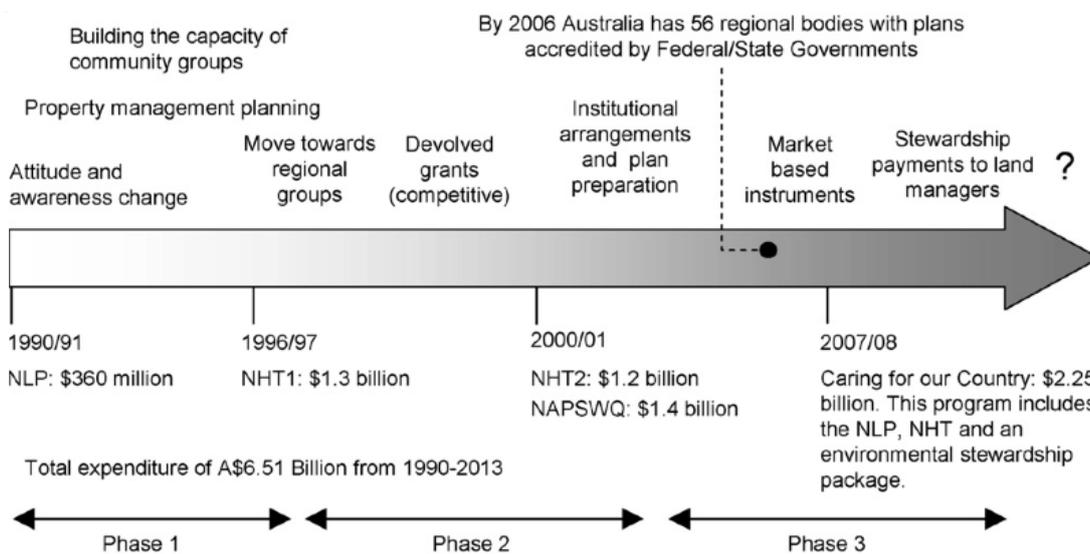


Figure 1: Phases of the Australian Government's NRM Programs (replicated from Hajkowicz 2009)

Each program along the way has been evaluated through various reviews that have either been commissioned by the departments responsible for administering the program, or conducted at an arm's length through Parliamentary processes or the Australian National Audit Office. The key reviews are listed in Box 1 on the following page. The terms of reference for the reviews varied but they all served the purpose of scrutinising the operations and performance to provide recommendations to help shape and improve future programs.

³ Note that the NLP continued after 1996, not as a separate program but as a component of the NHT I and II. The NLP component concluded in 2008 with the announcement of *Caring for our Country*.

Box 1: Major reviews of the Australian Government's NRM programs

Author/date (listed chronologically)	Program/context
SCARM (1997)	Decade of Landcare – performance and outcomes
Auditor General (1997)	NLP – Administrative processes
Auditor General (1998)	NHTI – Processes for project selection
Australian Water Technologies (1999)	NHTI – Governance arrangements
National NRM Taskforce (1999)	NRM Policy – Discussion paper on NRM policy
Natural Heritage Trust (2000)	NHTI – response to 29 commissioned consultant reviews
URS Australia (2001)	Landcare – Technical support services
Auditor General (2001)	NHTI – Performance and outcomes
Bellamy et. al (2002)	ICM – Murray-Darling Basin
Hassall & Associates (2005)	NHTI – Performance and Outcomes
Regional Working Group (2005)	NHTI/II – Regional Delivery of NRM
WalterTurnbull (2005)	NHTII/NAP – Evaluation of governance arrangements
Keogh et al. (2006)	NHTII/NAP – Regional Delivery of NRM programs
Sinclair Knight Merz (SKM)	NAP – Salinity mitigation outcomes
Auditor General (2008)	NHTII/NAPSWQ – Administration & performance
Parliament of Australia Senate (2010)	NRM and Conservation challenges – Public inquiry

Phase I: Raising awareness and responding locally

In 1989 the Australian Government announced the Decade of Landcare which ran through until 1996 and emphasised landscape-wide but local responses to challenges of national concern. Importantly, this globally remarkable initiative was a result of an unprecedented alliance between the conservation (ACF) and farmer (NFF) lobbies (Curtis 2003). This alliance was launched in the wake of a dramatic drought in the early 1980s, and on the information legacy of the Commonwealth-State collaborative soil conservation study of the late 1970s and the later consolidation of those data (Woods 1983). The support from the Australian Government for the 'Landcare model' continued through the National Landcare Program (NLP) through from 1990 to 1996, and then through to 2008 as a subprogram of the Natural Heritage Trust. The NLP officially concluded in 2008 (DAFF 2010).

There was significant enthusiasm around the vision of Landcare. Local groups were encouraged to self-organise around land and water resources degradation, with small short-term funding support. Within five years there was a proliferation of local Landcare groups expanding from 200 in 1989 to 2,200 by 1994 (Martin and Woodhill 1995), and as many as 4,000 groups were recorded in 1998 representing 30 per cent of the farming community (Bryon and Curtis 2002). Landcare groups established around a particular catchment boundary, local government jurisdiction, or around an environmental concern. The scale of Landcare was the rural district, in terms of similarity and common interest the equivalent of the urban neighbourhood. Groups could apply for funding to employ a coordinator for the group, education activities such as field days and conservation activities such as tree planting, weed control and property and catchment planning (Bryon and Curtis 2002).

Landcare has been dubbed as much a social philosophy as a program designed to facilitate on-ground nature conservation activities. It emphasised 'social learning' and was designed to foster stewardship norms and support cooperative arrangements to address the common-property nature of environmental degradation (Goss 1992 ; Kelly and Stannus 2003; Pannell 2004). This major phase placed a strong emphasis on notions of 'community participation' and so-called 'bottom-up' democratic institutions that was argued at the time to support legitimacy and effectiveness in policy implementation (Lane, Taylor et al. 2009).

From the outset great hope was held for the approach of targeting the social and cultural dimensions of environmental protection (Campbell 1994). In evaluations that have looked back at Landcare there

are very positive assessments of the program as "...a remarkably successful initiative..." (Robins and Kanowski 2011, p.2) because of its success in leveraging participation and increasing awareness about environmental degradation (SCARM 1997; URS Australia 2001). The program has also been criticised for achieving limited tangible on-ground outcomes. The focus on broad-scale participation meant that funding was thinly spread, and combined with the size and cost of the challenges that the program was designed to overcome, there were some very unrealistic expectations that were not able to be met (Barr 1994; Barr 1999; Pannell 2001).

The delivery of tangible NRM outcomes – understood to be the protection or improvement in condition of resources or environmental assets which are valued by the community – has been identified as a major limitation for every Australian Government NRM policy program to date; it is a consistent theme across the reviews commissioned by the Australian Government, and in the Auditor General's reports (See Box 1 for a list of key reviews). However, on a more positive note, NRM audits conducted at a state-scale, under the NSW National Resource Commission, indicate that improvements in resource condition have been achieved in response to specific NRM interventions (Natural Resource Commission NSW 2010).

Phase II: Building new institutional capacity

In 1997 the National Heritage Trust (NHT) was established as the next major national response to address NRM challenges. The Trust had two phases – NHTI (1997-2002) and NHTII (2003-2008). The impetus for the new program emerged from concerns about the inefficiencies of Landcare and calls to implement a more strategic system of investment (Pannell and Ewing 2006). The program was given a substantial injection of funding (A\$1.3 billion), made possible from the partial privatisation of Telstra. This link has been interpreted positively as a rare investment opportunity using privatisation funds, and alternatively as sugar-coating to sell a possibly unpopular public finance initiative.

The NHTI supplemented the Landcare program with the inclusion of additional sub-programs such as Bushcare and Rivercare. This worked to expand the NRM agenda from agricultural land degradation to engage with a broader set of concerns. The objectives of the Trust program were articulated around providing a framework of strategic capital investment to achieve NRM outcomes consistent with agreed national strategies, and to support partnerships between community, industry, and all levels of government (Hassall and Associates 2005). Both the early and final-phase evaluations of NHTI shared similar concerns to those of the Landcare program: NRM outcomes continued to be difficult to achieve because of thinly spread funding to support broad-scale participation.

In the early stages of the NHTI, a national discussion paper was released on managing natural resources (National NRM Taskforce 1999). A proposal for a regional approach to NRM was outlined which formed the foundations of the 'regional delivery model' that has underpinned Australian Government NRM programs since 2003 (Lane, Taylor et al. 2009). However, this was not the first time there had been a focus on scaling-up and coordinating NRM planning and practice. In the 1990s (alongside the Decade of Landcare) there was a significant movement towards coordinated action of local efforts; by the mid to late 1990s, catchment-scale and multi-stakeholder initiatives emerged under the banner of 'Integrated Catchment Management' (ICM) (Ewing 2003). In some states it led to the establishment of Catchment Management Authorities. In others, less formal arrangements in the tradition of earlier ICM initiatives were established, drawing also on the tradition of regionalism in Australia (Dore, Woodhill et al. 2003).

A regional approach to the Australian Government's NRM program was formalised under two national programs: NHT Phase-II and the National Action Plan for Salinity and Water Quality (NAP). The NAP program provided an additional focus within the NRM agenda to address the impacts of salinity on land and water resources which was high on the national agenda at the time. Lane et al. (2009) point out that rescaling planning and management was consistent with trends emerging internationally, where 'the region' was becoming established as a favoured scale of economic, administrative and political organisation. As part of the NHTII/NAP programs, Natural Resource Management (NRM) Regions (56 in all) were established through bilateral agreements between the Commonwealth and State and Territory governments. This provided the new regional institutional framework where the provision of funding was made dependent upon the accreditation of strategic regional investment

plans. The regions were to be governed by community-based boards of management and charged with responsibilities to deliver more strategic NRM outcomes.

Within the new regional institutional setting, the NAP program was charged with improving the targeting of investment further, to concentrate efforts around salinity and water management in regions with the most severe and urgent problems (Pannell and Ewing 2006). The prioritisation of salt and water in this way was seen by some as restrictive of a broader NRM agenda. The same critique can be applied to more recent initiatives, such as the National Water Initiative (NWI) which has driven a major focus on volumetric water allocations – has this been at the expense of broader NRM issues? The rhetoric of ‘integrated regional natural resource management’ suggests a role for regional NRM bodies within the NWI agenda, but their role has received scant coverage.

The ‘regional delivery model’ established under NHTII/NAP is rarely discussed as a ‘policy mechanism’ designed to achieve Commonwealth-State/Territory policy objectives. It is apparent that the term ‘delivery’ implies a funder-client relationship between the Australian Government and regions, a prospect not endorsed by proponents of autonomy within the regional governance arrangements, or in areas with more advanced capacities brought about by different histories, linkages and support through State-level legislation. There remains significant variation in the NRM regional bodies across the 56 regions. The variations occur within and between jurisdictions depending upon the local, sub-regional and state/territory legislation. The regional bodies (and their governing boards) vary in terms of their functions, responsibilities, and capacities (Robins and Dovers 2007).

While many elements of the regional delivery model are highly contested within the NRM literature, there has been a tendency for the region to be accepted, rightly or wrongly, as the most appropriate scale at which to plan for and coordinate national investment in NRM. For example, one of the conclusions from a commissioned review of salinity outcomes under the National Action Plan was that:

While there are some challenges to overcome [with the regional delivery model], it is a key resource for natural resource management, has few feasible alternatives and should continue to be invested in (Sinclair Knight Merz (SKM) 2006, p.9)

Despite widespread acceptance and support for regional scale NRM delivery, some research has questioned the focus that has emerged for regional-scale decision-making to the detriment of other scales of decision-making above and below the region (eg see Campbell 1996; Jennings and Moore 2000; Moore and Rockloff 2006; Morrison 2007). Jennings and Moore (2000) have also questioned the relevance of such a strong emphasis on ‘scale’ within NRM policy frameworks. In a case study approach applied to Western Australia, they evaluated four key claims made against the benefits of regional-scale NRM planning and management: 1) linkage between strategic planning and on-ground actions, 2) community empowerment; 3) democratic decision-making; 4) conflict resolution across scales and organisations. They found scale to be a “largely irrelevant” determinant of success in achieving outcomes relating to these four elements of NRM. The only benefits they found to be specifically linked to regional-scale arrangements related to information brokering and networking. They concluded (with reference to the case studies they explored) that it is much more critical to focus on institutional arrangements and processes than to “...blindly pursue regional delivery” (p.189).

The performance reviews of the NHTII/NAP programs (see Box 1) indicated that the programs continued to be beset by a failure to meet anticipated NRM outcomes. In their assessment of investments under NAP, Pannell and Roberts (2010) have argued that the problems of poor outcome-delivery were foreseeable and preventable with improved use of science, more targeted and appropriately scaled investments for asset protection, and with the use of policy tools appropriately matched to the social and economic dimensions of the land management circumstances they are designed to influence. An alternative view might be that the planning process under the NAP (and NHTII) was only the beginning of being able to produce lasting results through a capacity and information-building phase that would in many regions take at least five or even more years. This capacity is a precursor to longer-lasting, tangible outcomes and benefits.

The evidence presented in the research and broader literature suggests both views are relevant – that institutional maturity across regional bodies is a precursor and is developing, but also that there are critical shortfalls in the support, guidelines and incentives provided to regions at the NRM

program-level to ensure that capacities in regional planning and decision-making develop at all. Some of these shortfalls have been identified as critical in limiting the capacity of regional bodies to contribute to the management of environmental water in the Murray-Darling Basin (Roberts, Seymour et al. 2011). Additional considerations were also identified, such as the clarity of institutional objectives and responsibilities and how this impacts on effectiveness of decision-making. Also relevant is the support that the statutory powers in place for regions in Victoria and South Australia were judged to give regions in these states for greater clarity over responsibilities and capacities.

Roberts et al. (2011) make an important point to moderate the critical assessment of the limited capacity of catchment management organisations (CMOs):

“... common challenges for CMOs include integration of data from multiple sources, use of published literature and formal decision-making frameworks. Governments also find these areas difficult despite having greater resources, and the role of CMOs (or any other institution) needs to be considered in this light.” (p.5)

This point does also highlight the complex task that regions have in implementing integrated natural resource management, and hence the importance of capacity-building support provided at the NRM program-level. In NSW, significant progress has been reported on capacity-building outcomes under the state-government NRM framework established with state-government NRM reforms implemented in 2003. These reforms included legislation that established new organisations as well as assurance and accountability mechanisms. The mechanisms are based on state-wide targets for NRM and a Standard for Quality NRM (the Standard) that, among other things, requires regional bodies to establish Catchment Action Plans (CAPs). The CAPs set out a region’s strategic priorities for NRM investment and action, identify how this links to the state targets and complies with the Standard. As part of the 2003 reforms the Natural Resources Commission (NRC) was established as a statutory body responsible for reviewing the CAPs and auditing compliance and performance across the 13 NRM regions in NSW. The NRC has recently completed comprehensive audits, and has reported very positive results in terms of compliance and performance in terms of outputs and outcomes. The NRC concludes that NSW presents a case where institutional learning and maturity has been an important precursor to longer-lasting, tangible outcomes and benefits. Full details on the NSW reforms and the findings from the audits are provided in (Natural Resource Commission NSW 2010). The NSW case is presented here only as a case-specific example of reforms introduced to improve capacity in delivering NRM outcomes, but it is not possible to conclude whether the Standard would be appropriate or effective in other jurisdictions or at other scales.

A final point is warranted on the issue of capacity within regional planning, and this relates to the significant limitations that have been identified with respect to the capacity of regional planning processes to embrace Indigenous NRM interests, needs and priorities. Poor performance of regional NRM programs has been reported in regard to this (Hassall and Associates 2005; Lane and Williams 2008; Lane and Williams 2009), and which has been attributed to a number of persistent issues:

- > Misunderstanding the depth and breadth of NRM interests held by Indigenous people and communities, especially the connections between land and water, health and social wellbeing
- > Inadequate consultation processes
- > Limited capacity of Indigenous communities to access regional NRM funding.

Each of the Australian Government NRM programs have, to varying degrees, identified and supported Indigenous-specific NRM interests across regional and remote areas of Australia. However, the level of support continues to be a highly contentious area of the literature. Funding for Indigenous NRM has been unbalanced compared to the expansive land area within the Indigenous estate and the public good land management undertaken by Indigenous people to look after and protect the natural and cultural assets across the estate and NRM regions more broadly (Lane and Williams 2008; Lane and Williams 2009; May 2010).

Over the past three decades around 20 per cent of the Australian land mass has been returned to Indigenous Australians as a result of successful land rights and native title claims and land acquisition programs (Kerins 2010). There is also additional land in which Indigenous interests have been formally

recognised but exclusive ownership is not in place. This brings the Indigenous estate to just over a quarter (25.4 per cent) of the Australian continent (Lane and Williams 2008). The significant challenges for Indigenous people in moving from claiming lands to managing their country have been captured in a landmark report in 1991, *Caring for Country: Aborigines and Land Management* (as cited in May 2010). The need for adequate funding support is a critical issue.

There are difficulties in establishing precise measures of the total Australian Government funding provided to Indigenous-focused NRM. Under the NHTI/II programs (1996 to 2006), less than 3 per cent⁴ of the Australian Government's total NRM funding was allocated to Indigenous organisations funding allocated to Indigenous NRM initiatives (Hill and Williams 2009, p.161). In addition to this, some small amounts of funding were available to Indigenous landowners and communities under the national Envirofund program, but Lane and Williams' (2008) assessment of the overall funding was that it was still very low relative to other areas funded and relative to the scale of the Indigenous estate and management needs. The Indigenous estate supports some of the most intact and nationally important wetlands, riparian zones, forests, rivers and estuaries; these represent natural and cultural landscapes of national and international significance (Altman, Buchanan et al. 2007; Lane and Williams 2008; Kerins 2010). The natural and cultural integrity of the Indigenous estate faces major threats from: invasive species; changed fire regimes with impacts on ecosystem function and global climate change; pollution; and overgrazing (May 2010).

Phase III: Integration of business and market-based thinking

A final phase that brings us to the Australian Government's current program (*Caring for our Country*) is described as a business phase with a focus on establishing NRM targets (expressed in annual business plans) and the addition of market mechanisms in the form of competitive tenders through the Environmental Stewardship Program under CFOC.

Australia is an international leader in the use of market-based policy mechanisms for managing natural resource issues. The progress in this area has been supported by the investment in research and field experiments under the National Action Plan for Salinity and Water Quality National Market Based Instruments Pilot Program (2003-2008). This program aimed to explore Australia's capacity to use market-based instruments in managing natural resource issues. In particular, the competitive tenders were considered a cost effective way of providing incentives to farmers to address a wide range of environmental problems including water quality, biodiversity decline and salinity.

Although Australia is recognised as a leader in market-based approaches, the expanding role of markets in environmental management is not unique to Australia. The emphasis is world-wide and has been pioneered through advances in neo-classical economic incentive theory, experimental economics, and computer technology. In the context of NRM policy in Australia, the interest in market-based mechanisms also reflects a level of frustration with previously dominant regulatory and educational policy interventions. There is some question about the extent to which 'markets' as they are generally understood to operate, have been integrated into NRM programs. Apart from market-reforms in water that have led to water trading, the use of markets in NRM more generally has largely been contained to the introduction of competitive tendering to allocate input-based grants that were previously allocated under fixed-grant schemes.

The assumption that market-based instruments, or incentives more generally, are the most favourable or efficient intervention has not been unchallenged. On economic grounds, Pannell (2008b) has shown that incentives may only be effective and efficient in a relatively narrow set of circumstances relevant to NRM – that is only when the net private benefits of a given NRM project are negative (and thus unlikely to be adopted without financial assistance) and the net public benefits are sufficiently high (justifying the opportunity costs of the public investment). The implications of this work for NRM planning are not easy to digest – rather than seeking catchment-scale participation and investment, the suggestion is that some NRM issues or areas of the catchment should arguably not receive public investment. The size of the overall NRM portfolio is a critical determinant of the extent to which the suggested rationalisation would be required.

⁴ Note that under the CFOC program there has been increased funding the Indigenous-specific NRM priorities. One estimate is that 6.7 per cent of CFOC funding has been allocated to Indigenous NRM (Hill and Williams 2009, p.162).

In 2008, the Australian Government announced the *Caring for our Country* program, which consolidated all previous Commonwealth programs. The CFOC program, as it was communicated, showed consistency with the new market-oriented focus in NRM. It emphasised “a business approach to investment, clearly articulated outcomes and priorities and improved accountability” (Pannell and Roberts 2010, p.454). The program has continued to support the ‘regional delivery model’ but with some important differences that have had implications for the roles and relationships between the Commonwealth and regions (Robins and Konowski 2011; Morrison, McAlpine et al. 2010). Some of the key changes introduced have been:

- > an increased role for the Commonwealth in guiding regions on their NRM priorities
- > a significant reduction (50 per cent on average) in core funding for regional NRM bodies
- > introduction of funding for projects specified by the Commonwealth that regions could compete for equally alongside other NRM stakeholders.

Some early but cautious support has been seen for the CFOC ‘Business Plan’ on paper (Pannell 2008a). It was thought that the Plan, in principle, could overcome limitations that programs in the past have had in failing to prioritise investments. The support was cautious because of the known challenges involved in applying assessment criteria to support prioritisation of funding in practice. More open support for the program was dependent on answers to questions such as: Will the funds be targeted more tightly to achieve outcomes? How will the most appropriate policy mechanisms be chosen? How will science be used? How will the human dimension be considered within investment planning? What investment or decision framework will be used?

Less hopeful perspectives have also emerged around the CFOC program (eg Byron 2010; Morrison and McAlpine et al. 2010; Robins and Kanowski 2011). There have been concerns about how the reduction in core funding, and the increased role of the Commonwealth in setting the NRM agenda, will reduce capacity of the ‘regional model’ to deliver NRM outcomes. Robins and Kanowski (2011) have outlined several concerns about the impact that central directives may have on the ability of regional NRM bodies to adapt their investment decisions to the unique circumstances and thus maintain legitimacy with their local and regional constituents. They have also questioned the effect of competitive project-based funding on established partnerships and collaborative strategies. A different perspective might be that the changes implemented under CFOC legitimately provided the Commonwealth greater scope to direct its NRM funding to meet Commonwealth priorities. The full review of the CFOC program currently underway may provide answers to some of the early uncertainties and criticisms of that program, and the unresolved issues identified in the past, to guide the next chapter in the Australian Government’s regional NRM program.

With regard to addressing Indigenous-specific concerns raised under previous NRM programs, an increase in funding has been provided to Indigenous-specific NRM priorities under CFOC; one estimate is that 6.7 per cent of CFOC funding has supported Indigenous-specific NRM initiatives (Hill and Williams 2009, p.162). This has been associated with Indigenous-specific NRM initiatives introduced under CFOC, which have been seen as a positive development (eg Kerins 2010; May 2010). These programs include the Working on Country (WoC) and Indigenous Protected Areas (IPAs) which provide dedicated resources to Indigenous Australians living in remote areas to manage their lands. Additionally, the Working on Country Regional program, established under *Caring for our Country* but funded by the Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA), has provided funding to regional areas to support partnerships, facilitating Indigenous-focused NRM on non-Indigenous owned lands (May 2010).

Some grounds for optimism have been reported for these programs. The more streamlined funding with wage support (up until 2013) established under the WoC programs has been identified as particularly positive. Early evidence has also been reported of successes in the partnership-based approach working to integrate across Indigenous knowledge and western science in the planning and implementation of environmental management. There are also indications that the programs have been able to deliver economic, social and health benefits for people living in remote areas of Australia (Burgess, Johnston et al. 2009; Kerins 2010; May 2010). However, limitations have also

been highlighted. In particular, a critical gap has been identified in the support for institutional capacity and capital infrastructure of Indigenous land and sea management groups – groups remain extremely fragile, under resourced and continue to be reliant on many small specific-purpose grants which is placing an unsustainable burden on groups. A related issue identified concerns the significant role of outstation and regional resource agencies in Indigenous NRM delivery, which needs to be much more comprehensively acknowledged and supported under the Working on Country program (May 2010).

4. The NRM literature: leading themes and issues

Diverse perspectives are offered across the literature on the function and effectiveness of successive NRM programs. In this final section, some leading themes and issues identified across the literature are summarised under four themes:

- i. Roles, responsibilities, powers and accountabilities
- ii. NRM planning and investment processes
- iii. Partnerships, collaboration and coordination
- iv. Capacity issues and community engagement

These guiding themes were identified with the purpose of stimulating discussions in the workshop conducted as part of the Initiative, while not wanting to confine the range of issues and perspectives raised, discussed, and resolved within the workshop setting.

i. Roles, responsibilities, powers and accountabilities

The regionalisation of NRM can be understood as a policy process or framework which defines the roles and responsibilities around the use of public funding for achieving NRM outcomes. In simple terms, the Australian Government's 'regional NRM delivery model' is a policy framework that balances 'top down' and 'bottom up' decision-making within Government programs that operate through devolved community-based governance arrangements. In the literature it is often not necessarily the scale at which responsibilities have been devolved that is contested, but the detail of the 'governance arrangements' in operation. The term 'governance' can be taken to include "...the patterns and processes for setting goals and priorities, information and communication processes, managing implementation, accountability requirements and evaluation" (Head 2009, p.16).

A significant proportion of the NRM literature has been dedicated to examining the efficacy of the governance arrangements and how these translate the roles and responsibilities within NRM, across scales and stakeholders. The need for further clarification of the roles and responsibilities of all parties involved in regional NRM delivery is a consistent theme in the literature. Some of the leading issues raised around this theme include:

- > Uncertainty and tension surrounding the role of the Commonwealth and other levels of government in:
 - Setting regional NRM priorities
 - Supporting the capacity of organisations with devolved responsible for delivery of NRM outcomes
 - Providing incentives to regional organisations to guide planning decisions and investment frameworks
 - Supporting coordination across organisations operating at the regional level.
- > Effective accountability mechanisms:
 - There is broad acceptance across the literature that accountability mechanisms are essential for effective NRM planning and investment
 - The accreditation and monitoring of NRM planning and investment (established under NHTII/NAP) have been acknowledged as essential for establishing accountability mechanisms, but the role of government in establishing effective evaluation criteria has been highlighted as problematic
 - Accounting and monitoring of outcome-based performance in NRM has been identified as highly problematic and challenging

- Challenges of regional bodies to balance their accountability requirements to governments with accountability to the 'community'
- Issues have been raised concerning the burden placed on regional bodies to meet government reporting requirements, and questions remain unresolved about whether NRM bodies/boards have the capacity to meet accountability requirements.
- > The role of local governments and land-use planning within the regional delivery model has been mixed, and opportunities for improved integration are being pursued in many jurisdictions. These roles have become particularly important in the peri-urban zone where there are rapid changes and significant NRM issues to be resolved within land use planning decisions (see Low Choy, Sutherland et al. 2008).

ii. NRM planning and investment processes

Another significant area of the literature has been concerned with the detail and performance of regional NRM planning in practice. This literature is a response, in part, to sustained concern about the limited evidence that regional NRM investments have been delivering valued and cost-effective outcomes. A limited capacity has been identified within some regions to design and implement planning and investment processes that are capable of demonstrating delivered NRM outcomes. The particular concern is that there has been limited capacity to appropriately prioritise NRM actions, set targets and assess progress.

Some of the specific issues raised with respect to NRM planning include:

- > The need for improved processes to ensure regional NRM plans are informed by scientific, social and economic information
- > Planning and operating at the scale of environmental problems. This includes identifying and prioritising spatially explicit assets
- > Balancing local/parochial concerns over strategic investment. This includes the challenge of rationalising and managing expectations with the size of the NRM portfolio
- > Setting targets and identifying and prioritising the necessary management actions
- > Managing the implementation of management actions at the appropriate scale, including establishing the capacity and necessary policy instruments to secure actions
- > Establishing long-term monitoring to evaluate resource condition change
- > Implementation of adaptive change in planning, investment and activity, including the use of monitoring and long-term modelling to improve linkages between management actions and resource condition change.

iii. Partnerships, collaboration and coordination

One of the leading rationales put forward for regional-scale planning and delivery is the scope it can provide to improve (compared to centralised decision-making) capacity for cooperative partnerships across communities, industry, and all levels of government. Many of the issues raised in the literature regarding this theme concern the governance principles underpinning NRM programs. Some of the leading issues raised include:

- > Design of devolved responsibilities that support the networks and partnerships across local community and regions
- > The need for stable, long-term funding and institutional commitment to support partnerships, collaboration, trust and legitimacy
- > Establishing frameworks for partnership and collaboration that are inclusive of all stakeholders and diverse communities
- > Supporting governance arrangements that provide appropriate incentives for collaboration and coordination across scales and stakeholders.

iv. Capacity issues and community engagement

The central role of the community in NRM decision-making has been emphasised across each of the Australian Government's NRM programs and is a key area of the literature. The role of communities and the capacity of regional organisations to facilitate 'community engagement' is a significant subject explored in the literature. Some of the leading issues include:

- > Managing tensions in the scaling-up of a 'community-based' approach to NRM planning and investment
- > Establishing an inclusive view of 'community' within the regional engagement strategies
- > Managing community involvement in the context of short and uncertain funding cycles
- > Scrutiny of allocating NRM funding for community engagement as a means rather than an end in the context of allocating funding for the delivery of NRM outcomes.

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(This list includes all references specifically cited in this document as well as those not cited but drawn upon within the overall NRM initiative)

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