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The quality of resource condition targets in regional natural resource management in Australia

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Abstract: Natural resource management organisations in Australia routinely establish resource condition targets in their regional plans/catchment strategies. We reviewed biodiversity, water and community resource condition targets set by Catchment Management Authorities (CMAs) in Victoria and New South Wales (NSW) over planning cycles since 1997 against criteria of being specific, measurable, and time-bound (SMT). The overall quality of targets is poor with less than 30% of targets meeting the three criteria. Disturbingly there are no SMT targets in the most recent NSW CMA catchment strategies. We identify three major reasons for poor target setting: a lack of appropriate standards and guidelines from governments to enable high quality target setting; a lack of realism about the budgetary and technical feasibility of ambitious environmental targets amongst those involved in natural resource management; and a lack of adequate focus on outcomes by both CMAs and governments. Improvements to target setting can be achieved through stronger signals and commitment by governments, including by rewarding performance of regional bodies practicing outcome-focused accountability.

Keywords: environmental targets, project prioritization, environmental policy

JEL Codes: Q38, Q28, Q58, Q56

Introduction

Integrated catchment management has been a feature of Australian environmental programs for approximately two decades (Nelson 2005). Catchment management is acknowledged to be difficult (Curtis et al. 2002; Seymour et al. 2008), requiring the integration of various types of information in the context of uncertainty, heterogeneity, competing objectives and limited resources.

In the 1990s, responsibility for catchment management began to be devolved to regional natural resource management (NRM) groups. After 2001, these groups came to play an increasingly important role for the on-ground delivery of Australian Government programs and some state government programs. Despite diminution of their powers and resources under the Australian Government's Caring for our Country program in 2008, regional NRM bodies remain an important feature of Australian NRM policy. For more on their roles and responsibilities see Nelson (2005), Robins & Dovers (2007) and Roberts et al. (2011).

During the 2000s, criticisms of the regional NRM system emerged, including concerns that: regional plans often lacked clear measurable targets (Auditor General 2008), there was no effective reporting of outcomes (Auditor General 2008), inappropriate policy mechanisms were used to promote change (Ridley and Pannell 2005), there was inadequate use of scientific and technical information (Chartres et al. 2004) and social and economic information (Seymour et al. 2008) in the planning process, and there was a lack of incentives for regional NRM bodies to focus on achievement of environmental outcomes (Pannell & Roberts 2010).

Australian and state governments responded to these criticisms to some degree. For example, there have been changes to processes used for measurement and reporting in Caring for our Country (Australian Government 2009), the Victorian government has embraced an asset-based approach to

environmental planning (VCMC 2011), and the NSW government has emphasised the importance of high quality management and decision making practices for regional NRM bodies (NRC 2011).

The focus of this paper is one of the issues raised as a criticism by the Australian National Audit Office (Auditor General 2008): the quality of target setting. Setting effective performance goals and targets that focus on outcomes is an essential component of effective environmental management (Metzenbaum 2002; Coffey & Major 2005). To be useful for management and for evaluation, targets need to be 'SMART' (Doran 1981; McDonald & Roberts 2006). There is some variation in what the letters of this acronym are assumed to stand for. We adopt criteria that have been widely used; is the target Specific, Measurable, Attainable, Relevant and Time-bound? The importance of SMART targets has been explicitly recognised by governments (Australian Government 2009). The issue crosses over into other areas of past criticism, including the use of information in planning and the focus on outcomes.

Regional NRM organisations, called Catchment Management Authorities (CMAs) in Victoria and New South Wales, establish resource condition targets in the course of developing regional plans and strategies (hereafter referred to as catchment strategies). Our broad aim is to evaluate the quality of targets established in these regional catchment strategies. Our specific aims are:

1. to evaluate the quality of resource condition targets established in catchment strategies in Victoria and NSW from 1997 to the present by assessing the degree to which targets are specific, measurable and time-bound;
2. to assess whether there are differences in the quality of resource condition targets between Victorian and NSW CMAs; and
3. to determine whether the quality of resource condition targets has improved over time.

Methods

We examine the catchment strategies developed by all CMAs in Victoria and NSW from 1997 to the present. All strategies are listed in an Appendix, available online at the journal web site. From each strategy, we extract targets and assess whether they satisfy three of the SMART criteria: Specific, Measurable and Time-bound (further details below).

Victorian catchment strategies

In Victoria the first Regional Catchment Strategies (RCS1) were developed by the ten CMAs established in 1997. Between 2003 and 2004 the strategies were revised and a second set of Regional Catchment Strategies (RCS2) were developed. All ten CMAs are currently developing their third round of Regional Catchment Strategies, due for State government endorsement by the end of 2012. Resource Condition Targets in RCS1 and RCS2 are examined.

NSW catchment strategies

In NSW the first round of 21 strategic regional plans, known as Catchment Blueprints were developed between 2002 and 2003 by 18 Catchment Management Boards (CMBs) and three other bodies, namely the Hunter Catchment Management Trust, the Cox's River and Wollondilly Catchment Management Committees and the Hawkesbury-Nepean Local Government Advisory Group. We examine the 21 Blueprints and aggregate the results based on the boundaries of 13 current CMAs.

In 2003 the CMBs were reformed as 13 CMAs with statutory responsibilities. Each CMA was required to develop a Catchment Action Plan (referred to hereafter as CAP1), replacing the previous Catchment Blueprints.

Two CMAs, Namoi and Central West, have now also completed development of their next Catchment Action Plans (CAP2), which are expected to be endorsed by the NSW government in 2012. The remaining CMAs will develop their CAP2 plans over 2012-13.

A summary of the number and timing of regional plans for Victorian and NSW CMAs is provided in Table 1.

Table 1 - Regional plans examined

	Plan name	Plan period	Plans endorsed	Number of plans
Victoria	RCS1	1997 - 2002	1997	10
	RCS2	2003 - present	2003-2004	10
NSW	Catchment Blueprint	2003 -2013	2003	21
	CAP1	2007 - 2016	from 2007	13
	CAP2	2010 - 2020	from 2012	2 so far

Category of targets used for analysis

The types of targets that feature in regional NRM plans broadly fall into three categories (Australian Government, 2004):

1. Aspirational targets – the desired condition of natural resources in the longer term (20 – 50+ years), representing the regional NRM vision or goal. These broad targets are used to guide regional planning in a general way. For example:

“To maintain ecological processes and to protect and improve the extent and quality of biodiversity in the Mallee.”

Mallee CMA RCS2 p.54

2. Resource Condition Targets (RCTs) – specific, time-bound and measurable targets relating to the condition of natural resources in the medium term (10 – 20 years). Resource condition targets should recognise practical constraints given the social and economic context.

“Increase the overall cover of native vegetation to 30% of the catchment by 2030.”

Glenelg-Hopkins CMA RCS2 p.61

3. Management Action Targets (MATs) – targets relating to management actions or community capacity in the short term (1 – 5 years), intended to contribute to resource condition targets.

“By 2016, regenerate 550 km of degraded native riparian vegetation.”

Hunter-Central Rivers CMA CAP1 p.19

We restrict our analysis to RCTs because, in our judgement, these are the targets that matter most for the achievement of environmental outcomes. Aspirational targets are not intended to be SMART and MATs are merely building blocks towards RCTs.

Due to the large number of RCTs contained in catchment strategies, we choose to examine a sub-set that is consistently represented: those within the themes of biodiversity, water and community. Within the biodiversity theme we select targets relating to native vegetation and flora and fauna. For water we select waterway and wetland targets, and in the community theme, the examined targets related to participation, knowledge and awareness.

Analysis of resource condition targets

RCTs are assessed against three criteria: 1) Is the target specific?; 2) Is it measurable?; 3) Is it time-bound? We do not analyse criteria of 'relevant' or 'attainable'; to do so formally would require significant local knowledge and technical expertise that would be prohibitively time consuming and expensive to obtain for all regions.

Specific: For a target to be considered specific it must be precisely defined and relate quantitatively to a particular attribute of a natural resource. To illustrate, the following target was assessed as satisfying the 'specific' criterion: "The total extent of indigenous vegetation increased to at least 35% of the region by 2030". The natural resource is clear (indigenous vegetation), the attribute of interest is clear (total extent) and the target is quantitative (35% of the area of the region).

Measurable: For a target to be considered measurable it must be practically possible to tell, in quantitative terms, whether or not the target has been achieved. A suitable methodology or technique for measurement must be available and able to be applied at the appropriate scale. In the above example, it would be practically possible to tell whether 35% of the area of the region was indigenous vegetation through use of accepted techniques, such as interpretation of aerial photography or satellite imagery.

Time-bound: For a target to be assessed as time-bound a clear end-point in time must be specified.

In the above example, the target is required to be met "by 2030".

Results

Victoria – First Regional Catchment Strategies

The first Regional Catchment Strategies (RCS1) did not generally attempt to set Specific, Measurable and Time-bound (SMT) targets. Of the 76 RCTs analysed, only 3 met the three criteria, these being:

"To reduce potential phosphorus loads in catchment water bodies by 65% over 20 years to minimise risks of blue-green algal blooms in the catchment and in the Murray River."
Goulburn-Broken CMA RCS1 p.28

"25% of existing grassland in good condition or better by 2000."
Glenelg-Hopkins CMA RCS1 p.13

"25% of wetlands in good condition or better by 2000."
Glenelg-Hopkins CMA RCS1 p.13

Most RCTs outlined general objectives such as;

"Maintain and conserve the biodiversity of the region"
East Gippsland RCS1 p. 49

Overall, these first Victorian strategies focused on actions including planning, resource inventory and program implementation rather than the establishment of specific RCTs.

Victoria – Second Regional Catchment Strategies

The second Victorian Regional Catchment Strategies, developed in 2002/2003 were required to develop outcomes, objectives and targets for prioritised issues (VCMC 2002). While SMART targets were not mandated, there was a requirement for regional objectives and targets to support those targets agreed at State and National levels and identified in statewide policy frameworks. The assessment of RCTs for each CMA is outlined in Table 1 and targets across theme areas presented in Table 2.

Of the 184 RCTs set by Victorian CMAs in RCS2, 26% were specific, measurable and time-bound (Table 2). The region with the most SMT targets, North-East, had 67% SMT targets while the region with the least, East Gippsland, had none. Half of the regions had less than 50% SMT targets. Of the three criteria used to assess the targets, measurability (60%) and time-boundedness (55%) were higher than specificity of targets (40%). There were differences in performance between CMAs with four regions (West Gippsland, North-East, Corangamite and Goulburn Broken) having 50% or more of their targets satisfying the SMT criteria, and four regions (North Central, East Gippsland, Glenelg-Hopkins and Mallee) having less than 20% SMT targets (Table 2).

Table 2 Percentage of targets meeting assessment criteria in Victorian Regional Catchment Strategy 2

CMA	No. of targets	Specific (S) %	Measurable (M) %	Time-bound (T) %	All three (SMT) %
North Central	21	42	42	14	10
West Gippsland	7	86	86	86	71
East Gippsland	19	0	37	95	0
Port Phillip & Western Port	18	44	72	67	39
Corangamite	10	50	70	90	50
Glenelg Hopkins	22	64	82	41	18
Goulburn Broken	17	76	88	76	59
Mallee	32	13	28	3	3
North East	15	67	93	93	67
Wimmera	23	22	57	74	13

Table 3 presents the RCT data across the three theme areas (with results for different CMAs combined). The water theme had many more targets set than for biodiversity, and there were fewer still community targets. Community targets were the least SMT (4%) and biodiversity the most SMT (38%). As shown in Table 3, the specific criterion was the one that was met least often.

Table 3 Quality of Victorian Regional Catchment Strategy 2 targets across theme areas

Target theme	No. of Targets	Specific (S) %	Measurable (M) %	Time-bound (T) %	SMT %
Community	25	12	20	56	4
Biodiversity	56	46	64	66	38
Water	103	44	68	50	24
Total	184	40	60	55	26

Many targets met one or two out of the three criteria but 137 of 184 (74%) did not satisfy all three. For example the following target is measurable and time-bound but non-specific;

“Improve condition of 6 rivers to ecologically health status by 2013, as measured by ISC.”

Goulburn Broken RCS2 p.11

While there is no analysis of achievability, it is clear that some RCTs assessed as SMT were not achievable.

“Maintain the region’s total ecological footprint at or below the 2003 level, and reduce the average ecological footprint (per capita) for the region by 25 per cent by 2030.”

Port Phillip & Western Port RCS2 p. 247

Thus, the percentage of targets meeting the full set of SMART criteria would be less than the disappointing 26% meeting SMT criteria in RCS2.

New South Wales – Catchment Blueprints

The assessment of RCTs, described in the Blueprints as Catchment Targets, is outlined in Table 4. Table 5 provides an aggregated summary over the three theme areas.

Table 4 Percentage of targets meeting assessment criteria in New South Wales Catchment Blueprint

CMA	No. of targets	Specific (S) %	Measurable (M) %	Time-bound (T) %	SMT %
Central West	8	25	63	100	25
Namoi	4	50	75	100	50
Murray	3	33	67	100	33
Murrumbidgee	4	25	25	75	25
Lachlan	10	50	70	100	50
Lower Murray Darling	5	40	60	100	40
Border Rivers-Gwydir	9	67	89	100	67
Northern Rivers	7	14	29	100	14
Hunter-Central Rivers	10	40	80	80	40
Sydney Metropolitan	31	13	20	77	10
Southern Rivers	7	0	29	100	0
Hawkesbury-Nepean	10	40	70	100	40
Western	7	29	57	57	29

Table 5 Quality of New South Wales Catchment Blueprint targets across theme areas

Target theme	No. of Targets	Specific (S) %	Measurable (M) %	Time- bound (T) %	SMT %
Community	4	0	0	100	0
Biodiversity	55	17	22	81	15
Water	56	43	82	96	45
Total	115	29	51	89	29

The results show differences between CMAs (Table 4) with three regions (Namoi, Lachlan and Border Rivers-Gwydir) having 50% or more SMT targets, while three CMAs (Northern Rivers, Sydney Metropolitan and Southern Rivers) had less than 15% SMT targets. Across the three theme areas, 29% of targets met all SMT criteria. In contrast to RCS2 in Victoria, which were contemporaneous with the Catchment Blueprints, community targets were almost absent in NSW Catchment Blueprints. The performance of water targets was much better than the biodiversity targets: 45% compared to 15%.

Overall NSW Catchment Blueprint targets, with only 29% meeting SMT criteria (Table 5), were similarly poor compared to those in the second iteration of Victorian catchment strategies (26%, Table 3).

NSW – First Catchment Action Plans

The assessment of RCTs for each CMA in CAP1 is presented in Table 6, while Table 7 provides an aggregated summary across the three selected theme areas.

Table 6 Percentage of targets meeting assessment criteria in New South Wales Catchment Action Plan 1

CMA	No. of targets	Specific (S) %	Measurable (M) %	Time-bound (T) %	SMT %
Central West	6	0	0	100	0
Namoi	3	0	0	0	0
Murray	7	0	14	71	0
Murrumbidgee	9	22	22	100	22
Lachlan	4	0	0	100	0
Lower Murray Darling	5	40	60	60	20
Border Rivers-Gwydir	3	0	33	100	0
Northern Rivers	3	0	0	100	0
Hunter-Central Rivers	2	0	0	100	0
Sydney Metro	13	0	0	77	0
Southern Rivers	5	0	0	100	0
Hawkesbury-Nepean	9	11	11	100	11
Western	4	25	50	75	50

Table 7 Quality of New South Wales Catchment Action Plan 1 targets across theme areas

Target theme	No. of Targets	Specific (S) %	Measurable (M) %	Time- bound (T) %	SMT %
Community	21	5	5	86	5
Biodiversity	26	4	8	88	4
Water	26	15	27	81	15
Total	73	8	14	85	8

Performance was almost universally poor for CAP1 with only three CMAs equaling or exceeding 20% SMT targets (Murrumbidgee, Lower Murray Darling and Western). Only the Western CMA exceeded 50% SMT. Nine of the 13 CMAs had no targets that met all three criteria. In aggregate only 8% of the 73 targets were SMT. The number of SMT water targets declined from 45% in the Blueprints to 15% in CAP1 and SMT biodiversity targets declined from 15% to 4%.

New South Wales – Second Catchment Action Plans

In NSW, pilot development of new Catchment Action Plans, CAP2, has been undertaken with two CMAs, Namoi and Central West. Draft CAPs were submitted to the NSW government for approval in 2011. Following this pilot the remaining CAPs will be developed in other regions.

Table 8 Summary of target quality for the Central West and Namoi Catchment Management Authorities within Catchment Action Plan 2

Target theme	No of Targets	Specific (S) %	Measurable (M) %	Time- bound (T) %	SMT %
Community	4	0	0	25	0
Biodiversity	4	0	0	100	0
Water	3	0	33	100	0
Total	11	0	9	73	0

While these results represent CAP2 RCTs for only two of 13 NSW CMAs, the early trend is further decline in the proportion of SMT targets (Table 8). In CAP2, all biodiversity and water targets were at least time-bound but only one of four community targets was so. Disturbingly none of the 11 targets in CAP2 was specific, meaning that no target met all three SMT criteria. Only the water theme had some measurable targets (33%). It appears that the trend of steeply declining RCT quality from Catchment Blueprints to CAP1 is continuing.

The following examples highlight the lack of specificity and measurability of this most recent set of catchment targets;

“By 2021, there is an increase in the contribution of natural resource managers to regionally relevant natural resource management.”

Community theme: Central West CMA CAP2 p.8

“Improve extent, connectivity and condition of vegetation communities to good condition stable state, and improve habitat for native fauna.”

Biodiversity theme: Central West CMA CAP2 p.8

“There is an increase in the adaptive capacity of the Catchment Community.”

Community theme: Namoi CMA CAP2 p. 64

“By 2020 there is an improvement in the condition of those riverine ecosystems that have not crossed defined geomorphic thresholds as at the 2010 baseline.”

Water theme: Namoi CMA CAP2 p.71

Discussion

The overall quality of RCTs is poor in both states and in NSW has declined. This is of concern because the quality of targets reflects to some degree the quality of decision making about priorities for environmental investments. If targets are vaguely defined, it is impossible to evaluate whether they are worth pursuing. Poor definition of targets also reduces the potential for monitoring and evaluation of investments to be meaningful and useful for improving management practices.

Although this study has focused on whether targets are specific, measureable and time-bound, we emphasise that the other two SMART criteria – attainable and relevant – are at least as important. They are tightly bound to, and dependent on, the quality of the decision making process and the evidence used to support it. If we had been able to include these two additional criteria, our judgment is that the number of targets assessed as satisfying all criteria would have been significantly lower (in cases where it was not already zero).

We suggest there are at least three reasons for the low observed quality of targets: 1) a lack of appropriate standards and guidelines from governments to foster high-quality target setting; 2) a lack of realism/‘culture of hope’ amongst those involved in natural resource management; and 3) a lack of adequate focus on outcomes by both CMAs and governments.

Lack of appropriate standards and guidelines for target setting

The importance of setting effective performance goals/targets, including SMT criteria, is well known both internationally (Metzenbaum 2002) and in Australia (Lockwood et al. 2002, McDonald & Roberts 2006). Given that catchment strategies in both Victoria and NSW are endorsed by the respective state governments, the failure of governments to provide sufficient guidance and standards is a direct contributor to the poor quality of targets.

In Victoria, CMA responsibilities are outlined under the Catchment and Land Protection (CALP) Act (1994). Section 24 of the Act states that the RCS must “identify objectives for the quality of the land and water resources of the catchments in the region;” and “specify procedures for monitoring the implementation of the strategy, achieving the land and water resource quality objectives”. The CALP Act’s dominant emphasis is on planning, with no actual requirement for CMAs to actually implement environmental plans/strategies under the Act (Roberts & Craig 2012).

Further guidance on target setting has been given by the Victorian Catchment Management Council (VCMC), the State Government’s key advisory body on catchment management. It is important to note, however, that the VCMC is not responsible for the operation of CMAs and does not oversee their work¹. The VCMC Guidelines (VCMC 2002) that accompanied development of RCS2 provided weak guidance about targets to CMAs, indicating only that ‘high-level objectives or outcomes across NRM issues’ were required. Detailed targeting was left to CMA action plans. Viewed in this light, it is perhaps encouraging that as many as 26% of targets actually met SMT criteria in 2002/03.

¹ www.vcmc.vic.gov.au, accessed 6 March 2012

Guidance to Victorian CMAs for current RCS preparation is improving. The current guidelines (VCMC 2011) state that a criterion for approval of an RCS is to establish “High-level objectives for significant assets, using SMART objectives where possible”. Whilst this is an improvement from 2002, the words ‘where possible’ provide ample room for regions to continue setting vague targets. Given the prominence given to previous critical reports (particularly Auditor General 2008), and given the large amount of public funding spent by CMAs, more decisive guidelines could have been expected.

The trend of declining quality of target setting in NSW correlates with changes in government guidelines. In the late 1990s, the quality of targets was similar in the two states. The NSW government of the day intended the Blueprints to be ten-year plans for integrated catchment management and stated that Blueprints “contain specific and measurable targets to be achieved in a set period of time, and the management actions required in meeting these targets” (Namoi Catchment Management Board, 2003). While this exaggerated the reality (Table 4), the expressed intent was positive, and provided stronger signals to CMAs than in Victoria.

The Natural Resources Commission (NRC) was established in NSW in 2003². Its function is to provide independent advice to the NSW government on natural resource management. It reports directly to the NSW Premier, giving it more power than the Victorian VCMC. It developed a ‘Standard for Quality Natural Resource Management’ (NRC 2005) to provide guidance to CMAs, which provided an opportunity to address the quality of RCTs. However, the ‘Standard’ provides no guidance on the development of high-quality targets – no suggestion that targets should be SMART. Further, the state-wide targets³ developed by the NRC at the time did not role model good practice as none of the 13 state-wide targets are SMART. The lack of strong direction to CMAs on this point may have contributed to the result that the first two second generation NSW Catchment Action Plans (CAP2) developed under the guidance of the NRC contain no SMT targets.

Lack of realism – a ‘culture of hope’

We have observed a lack of realism among some NRM professionals about what can be achieved with limited public funding. We hypothesise that one factor contributing to this is what we call a ‘culture of hope’ encouraged by governments. Various programs have encouraged regional NRM bodies to aim unrealistically high, such as through the specification of ‘aspirational’ targets. For example, nationally accredited catchment strategies developed for funding under the Natural Heritage Trust and the National Action Plan for Salinity and Water Quality were required to include aspirational targets. These corresponded to RCS2 in Victoria and the Catchment Blueprints in NSW. The NRC has an aspirational target of its own⁴.

Our aspirational goal is to achieve: “Resilient, ecologically sustainable landscapes, functioning effectively at all scales and supporting the environmental, economic, social and cultural values of communities”.

In our judgment, the specification of aspirational environmental targets in this way is counter-productive to environmental outcomes. It encourages a disconnection between target setting and assessment of technical and financial feasibility that seems to have spread to the setting of other

² www.nrc.nsw.gov.au/AboutTheNRC/OurFunctionsAndStructure.aspx, accessed 6 March 2012

³ <http://www.nrc.nsw.gov.au/Workwedo/Standardandtargets.aspx>, accessed 20 March 2012

⁴ <http://www.nrc.nsw.gov.au/content/documents/Brochure%20-%20Resilient%20landscapes.pdf>, accessed 20 March 2012

types of targets that are intended to be more realistic. It encourages a culture of hope in which people are encouraged to believe that, despite very limited resourcing of environmental programs, and despite the absence of any technical evidence to support such hope, it will be possible to achieve extremely ambitious environmental outcomes.

Lack of outcome focus

Specification of high-quality SMART targets for catchment strategies facilitates monitoring of outcomes from NRM programs. However, NRM programs in Australia have generally not required regional bodies to monitor for outcomes. Instead, they have tended to focus on reporting of inputs, outputs and activities. Although NRM bodies allocate high levels of resources to this reporting task, (Lockwood et al. 2007; Lockwood et al. 2009; Roberts et al. 2011), without a requirement to measure outcomes, there is less imperative for targets to be SMART.

Pressure on governments to make NRM programs more focused on outcomes has grown, in part from criticism of the lack of measurable outcomes from previous programs (Auditor General 2008). There are signs that there is increased intent in this area, as illustrated by the following excerpt from the Caring for Our Country Business Plan⁵:

“Caring for our Country is based on measurable, strategic outcomes at a national scale for the medium-term (five-years) in the context of longer term (20-year) projections.”

Improving future target setting?

We propose that the quality of targets is closely related to the quality of decision making. Efforts to improve the specification of targets should go hand in hand with efforts to improve the planning and prioritisation process, including improvements in the use of evidence, the handling of knowledge gaps, the assessment of risks to project success, the selection of delivery mechanisms and the assessment of the value for money offered by different potential investments. Without this, targets cannot be SMART because there will be no evidence about whether they are attainable and relevant. Conversely, making targets specific and time-bound is a pre-requisite to evaluating whether they are worth pursuing.

Another requirement is to reform the relationship between long-term, medium-term and short-term targets. Logically, medium-term targets should depend directly on long-term targets and should not be specified until after long-term targets have been determined. Similarly, short-term targets should flow directly from medium-term targets. The current processes of Program Logic and the Monitoring Evaluation, Reporting and Improvement Plan⁶ used by the Australian Government could be improved to encourage and support this hierarchical structure of targets. As part of this reform, aspirational targets would not be accepted, due to them failing to satisfy SMART criteria.

Pannell and Roberts (2010) highlighted the importance of governments creating incentives for regional NRM bodies to adopt high quality planning processes. However, this has been a distinct weakness in past programs. For example, The Senate (2006) recommended that the Australian Government should “strengthen the accreditation process for regional bodies” and “ensure that funding is conditional on rigorous investment planning” (The Senate, 2006, p. 221), but this did not occur. In our view, governments need to insist on sound target setting (as part of a strong planning

⁵ <http://www.nrm.gov.au/resources/publications/bp-2012-13/pubs/bp-2012-13.pdf>, accessed 6 March 2012

⁶ www.nrm.gov.au/funding/meri/guidelines-meri-plan.html, accessed 6 March 2012

and decision making process) as a prerequisite for public environmental funding. Resource condition targets meeting the criteria of being SMART should be a minimum requirement.

Governments need to take more responsibility for the quality of regional target setting and decision making, through auditing of performance, compliance checking and taking appropriate measures for non-compliance. A mechanism to hold governments accountable for failing to comply with their own obligations would assist with accountability (Roberts & Craig 2012).

As well as a stick approach, we suggest the use of carrots –rewarding good performance in this area. This should take the form of greater funding for regional bodies that adopt sound practices of target setting and decision making. An example of a framework that could be used to assist regional NRM bodies to improve their performance is the Investment Framework for Environmental Resources (INFFER, Pannell et al. 2011). INFFER requires the setting of SMART goals as part of its process of evaluating the value for money of proposed environmental investments.

There are some early signs that improved performance is being rewarded. The North Central CMA in Victoria (one of the poorest SMT target setters in 2003), has now used INFFER for four funding cycles. This has transformed the way that the CMA invests to achieve environmental outcomes in general. Examples of success include receipt of large funding of projects – much larger than had been previously attempted or received. Examples include a grant of A\$2.3 million from the Victorian government to protect the York Plains wetlands. Another project received the third largest funding amount nationally under the Competitive Grants component of the Australian Government's Caring for Our Country Program in 2011, this being A\$0.9 million to help protect the Moolort wetland complex.

As well as carrots and sticks, the transition to improved target setting and decision making would benefit from formal training and capacity-building programs to address the issues identified here. Problems with lack of institutional capacity in regional NRM bodies have previously been identified as constraints on their performance (Seymour et al. 2008; Robins and Dovers 2007).

Conclusion

The process of setting targets for environmental outcomes from public investments is closely related to the process of planning and prioritising those investments. The overall quality of resource condition targets was poor across Victorian and NSW CMAs, with less than 30% of targets being specific, measurable and time-bound (Achievability and relevance could not be assessed). The quality of targets in NSW has declined since the 1990s. We identify three reasons for poor target setting: a lack of appropriate standards and guidelines from governments to enable high quality target setting; a lack of realism about the budgetary and technical feasibility of ambitious environmental targets amongst those involved in natural resource management; and a lack of adequate focus on outcomes by both CMAs and governments. To improve target-setting and decision making, we identify the need for incentives for good performance, penalties for non-compliance and support for capacity building. Under current arrangements, governments and most regional bodies are highly exposed to criticism on this front, weakening their cases for public investment to achieve environmental outcomes.

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