

# NRM Regions in Australia: the ‘Haves’ and the ‘Have Nots’

LISA ROBINS\* and STEPHEN DOVERS

*Fenner School of Environment and Society, Australian National University, Acton, ACT 0200, Australia.*

*\*Corresponding author. Email lisa.robins@anu.edu.au*

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## Abstract

This paper identifies external factors affecting the capacity of Australia’s now-formalised 56 regional natural resource management (NRM) bodies and their community-based Boards to meet planning and management responsibilities. It demonstrates that little is known about the basic capacity-related characteristics of NRM regions, despite the lengthy and elaborate process of regionalism that Australia has embarked upon, with its associated and substantial devolution of responsibilities and resources. A suite of indicators is used to develop an ‘exploratory’ capacity typology of NRM regions. The ten regional ‘types’ identified are found to attract varying budget allocations under the Natural Heritage Trust Extension and National Action Plan for Salinity and Water Quality. There are indications that State and regional interests within and outside NRM can significantly influence the distribution of resources. An examination of resources allocated to capacity-building activities shows significant differences between regions in the scale of resources allocated (0–96% of total budget). The paper argues the case for intervention to reduce the gap between ‘have’ and ‘have not’ regions, and for further exploration of disparities in the allocation of resources to capacity-building activities. Clarification is needed of the extent to which capacity-building activities adequately target regional NRM bodies and their Boards.

**KEY WORDS** *capacity; capacity-building; National Action Plan for Salinity and Water Quality (NAP); Natural Heritage Trust Extension (NHT2); natural resource management (NRM); regional organisations; typology*

## ACRONYMS

ACT	Australian Capital Territory
ARIA	Accessibility/Remoteness Index of Australia
NAP	National Action Plan for Salinity and Water Quality
NHT2	Natural Heritage Trust Extension
NLWRA	National Land and Water Resources Audit
NRM	Natural resource management
NSW	New South Wales
SA	South Australia
WA	Western Australia

## Introduction

Strategic planning, priority-setting and resource allocation in natural resource management (NRM) in Australia are increasingly determined at regional

level (Paton *et al.*, 2004). Australia is now formally divided into 56 NRM regions (Figure 1), each with a community-based Board of management with responsibilities for integrated management



strategy (Department of Agriculture, Fisheries and Forestry, 2005; 2006). To June 2005, these programs have allocated over \$392 M to the 56 regions, including \$106 M (~27%) for capacity-building (NRM Ministerial Council, 2005).

Establishing an improved understanding of regional 'capacity', undertaken here through development of an exploratory typology, is important because:

1. effective design and delivery of NHT2 and NAP are dependent upon the capacity of regional NRM bodies and community-based Boards to prepare and implement quality regional NRM plans and investment strategies;
2. external factors outside the control of regional NRM bodies and Boards affect their capacity to design and deliver effective plans and investment strategies, and
3. resource allocations to regions may reflect these external factors, and should be adequately taken into account in the delivery of national programs.

The paper has three parts. Part I discusses capacity-building and external factors affecting the capacity of regional NRM bodies and Boards to meet planning and management responsibilities. Part II draws on these external factors to identify a suite of indicators from which to develop an 'exploratory' capacity typology, and describes the capacity typology comprising ten classes of regions. These classes are used in Part III to examine the distribution of NHT2 and NAP resources across NRM regions, and allocations for capacity-building activities.

## **PART I – External factors affecting regional capacity**

### *What is 'capacity-building'?*

'Capacity-building' describes knowledge and awareness-raising activities to support desired change (Robins *et al.*, 2005). Coutts *et al.* (2005) suggest that capacity-building programs need to provide all 'rungs' of the 'capacity-building ladder', comprising information access, programmed learning, facilitation and empowerment, mentor/consultant and technological development. The NRM capacity-building Framework for the NHT2 and NAP defines 'capacity-building' as 'awareness, skills, knowledge, motivation, commitment and confidence'. It was endorsed in 2002 by the Programs Committee of the Natural Resource Management Ministerial Council as providing 'a common, consistent and com-

plementary approach to capacity-building as a guide to all jurisdictions in planning and implementing capacity-building investments', with a view to also informing other NRM programs (Commonwealth of Australia, 2002).

### *What external factors affect capacity?*

There are similarities and differences among NRM regions that affect the capacity of regional bodies and Boards to develop plans and investment strategies that warrant greater attention than has been the case to date. The external factors are: regional setting and complexity; physical remoteness; access to political and bureaucratic decision-making processes; access to information; profile of regional NRM issues, and proximity to learning and research centres. Surprisingly, such data on the characteristics of NRM regions have not been compiled and analysed previously. This discussion of external factors is exploratory, not exhaustive, and such variables are not necessarily mutually exclusive. We aim to expose the diversity of geographical, social and political settings in which regional NRM bodies operate, and demonstrate the need for consideration of these factors in the design and delivery of national programs.

*Regional setting and complexity* The 56 designated NRM regions vary hugely in area (1840 to 1 850 000 km<sup>2</sup>) and population (4000 to 3 500 000) (Table 2). Area and population have implications for the collection of information about the region's condition, and for engaging with landholders and interest groups. Larger areas complicate catchment planning; stakeholder participation is difficult. Potentially, larger populations provide greater access to human and financial resources; however, very large populations introduce complexity (Robins, 1995).

Regional bodies operating across jurisdictional (State and program) boundaries confront challenges in accessing information and resources, assessing resource condition, engaging with stakeholders and reporting on progress (Crabb, 2003). Several NRM regions share planning and management responsibilities under the NAP with other regions (Department of Agriculture, Fisheries and Forestry, 2005).

*Physical remoteness* The location of a region and its infrastructure influence capacity to fulfil planning and management responsibilities. Remote communities have difficulty attracting

and retaining staff compared to regions with large urban centres. A region with good infrastructure, especially airports, major roads and visitor facilities, has better access to goods and services and is more attractive for staging events like conferences. Regions closest to capital cities have greater access to decision-makers, and therefore more scope to advocate their interests.

*Political and bureaucratic decision-making processes* Regional NRM bodies and Boards need to engage with political and bureaucratic processes at all levels of government to influence NRM programs, including problem definition and priority setting. However, this influence exists within a broader socio-political setting, particularly the priority given to NRM on government agendas. In 2006–2007, the federal budget allocated \$3 billion for NRM, comparable to Transport and Regional Services at \$4.9 billion but substantially less than Health and Ageing (\$41.7 billion) or Defence (\$22.3 billion) (Commonwealth of Australia, 2006b). Watts (2004) suggests that the NHT2 and NAP represent about 0.1% of the federal budget and can only address a small fraction of Australia's environmental needs. Madden *et al.* (2000) estimate that \$3.575 billion are needed each year to meet the federal government's own national targets NRM targets.

High-level political trade-offs are largely outside the influence of regional NRM bodies and Boards. For example, Commonwealth resourcing for NRM increased in 1996 when the Liberal Party made an election promise to allocate \$1.25 billion over five years, conditional upon the partial sale of Telstra (a publicly-owned telecommunications business) as part of its broader platform of privatisation. An Independent Senator, Brian Harradine, negotiated a disproportionate share (\$353 million over five years) for Tasmania in return for passing the Telstra bill (Kingston, 2004). Similarly, in 1999 the Victorian Government reached a unique political agreement with the Independent member for East Gippsland, Craig Ingram, to restore Snowy River flows to 28% (O'Brien, 1999).

Regional bodies and Boards have limited influence on high-level political and bureaucratic negotiations. The signing of Intergovernmental and Bilateral Agreements between State/Territory and Australian Governments is central to these programs (WalterTurnbull, 2005). In the case of the NAP, the South Australian Government

signed the first Bilateral Agreement in June 2001, while the Western Australian Government was last in September 2003 (Department of Agriculture, Fisheries and Forestry, 2005). This process can be delayed by state NRM issues, such as old-growth logging in Tasmania or land clearing in Queensland. Politicians and bureaucrats play a powerful role in regional decision-making following Bilateral Agreement signing. With NHT2 and NAP, Commonwealth Ministers accredit regional plans and investment strategies following recommendations from state Joint Steering Committees (which include, and generally are chaired by, Australian Government agency representatives).

*Access to information* Planning processes conducted by regional bodies and Boards should be informed by current science and thinking. However, there are factors limiting access to information about programs and research outcomes (Sinclair Knight Merz, 2006; WalterTurnbull, 2005). While internet access, as a major information network, varies considerably among regions, the form and timeliness of information from government agencies and research bodies which generate knowledge also influence availability. Thus, proximity to research centres, government bureaus and industry association central offices, for example, will influence regional NRM capacities. Program managers typically have limited budgets for knowledge transfer, and tend to be skilled at generating but not transferring knowledge. Experts in knowledge-transfer generally form a separate arm of the organisation. This sees reports published years after research completion (sometimes never), especially from multi-organisational teams. Publication often marks the end of the communication process.

Incentives for researchers to communicate are limited. The promotional system in research rewards publishing in scientific journals and securing research contracts. This is despite the fact that government research purchasers have increasingly encouraged 'action research', with formal requirements for community consultation (for example, Murray-Darling Basin Ministerial Council, 2001).

*The profile of regional NRM issues* While State/Territory Governments have responsibility for land and water management, the Australian Government increasingly sets the agenda and resource allocation through large-scale centralised

programs, like the NHT2 and NAP (Paton *et al.*, 2004). Regional bodies may be driven more by the need to access these resources than by addressing their most pressing issues, and face the same planning and reporting requirements irrespective of their resource share. Other cross-jurisdictional institutional structures, like the Murray-Darling Basin Commission or National Water Commission, superimpose their own multi-jurisdiction agendas and budget allocations.

Regional NRM bodies and Boards have a role to play in debating priorities and determining resource sharing between and within States/Territories. These decisions are, however, strongly influenced by high profile issues (such as salinity) (Commonwealth of Australia, 2001a), the extent of impacts (for example vegetation clearance) (Commonwealth of Australia, 2001b), and government agendas (such as climate change) (AAP, 2005). Previous programs (for example, salinity focus catchments, biodiversity hotspots) influence identification of priority localities. Regional bodies confronting local, lower profile or politically unpalatable issues have less leverage for accessing available funds or arguing for additional resources. State/Territory Government cost-shifting can further limit timely access to resources (Morrison *et al.*, 2004) as well as the magnitude of available resources (human and financial).

Research also influences perceptions of problems and solutions and thus resource allocation. In particular, the Research and Development Corporation (RDC) model (Agriculture, Fisheries and Forestry Australia, 2004) is strongly weighted towards large-scale, traditional agricultural industries through dollar-for-dollar matching of industry levies by the Australian Government. The questions that researchers believe are worth investigating may not align with the highest priorities for NRM or apply the cross-disciplinary, integrative approaches needed (Morrison *et al.*, 2004). Some researchers access funding because they are skilled communicators and networkers. Ideas and technologies are funded that may be overstated, such as airborne geophysics in the case of salinity management (Commonwealth of Australia, 2001c; 2006a), or inappropriate, such as clean coal technologies (some would suggest) in the case of climate change (Beeby, 2006). Some disciplinary areas capture more resources, typically the physical and economic sciences, despite the crucial importance of 'the social' (Higgins and Lockie, 2002). Accessing funds

for longer-term studies and new ideas can be difficult.

*Proximity to learning and research centres* The presence of learning and research centres in a region facilitates information generation and exchange, networking to support regional NRM bodies, and increases the likelihood of location-specific (and thus more relevant) research being undertaken. Regions including capital and other cities have greater access to these benefits. Research is often 'curiosity-driven' and focused nearby, governed by researchers' agendas and priorities, unlike 'mission-directed' research to meet an agenda defined by external stakeholders (Barber, 2004; Graham, 2004). The outcomes of research often fuel further studies, through the identification of research gaps and availability of data.

Universities and research providers monitor funding opportunities. Open call application processes allow researchers to frame problems and advance ideas. Their networking with funding bodies and selection panel members can be important in the awarding of contracts. Panel members have preferences they bring to decision-making processes, especially when representing particular interest groups (such as a regional body).

## **PART II – 'Baseline' capacity typology**

Indicator development to inform 'capacity-building' of regional organisations is in its infancy (Fenton, 2004c; Australian Bureau of Statistics, 2005). The National Land and Water Resources Audit (NLWRA) has conducted indicator trials to assess the capacity of regional organisations and the social and institutional foundations of NRM (Fenton, 2004a; b; Fenton and Rickert, 2006a; b). An Australia-wide assessment using some 50 indicators (in four categories of recognition, partnerships, engagement and capacity) is scheduled in 2006–2007 (Karen Cody, NLWRA, personal communication, 25 July 2006). The 'exploratory' indicators used in this study (shown in Table 1) are surrogate measures of external factors outside the control of regional NRM bodies and Boards (such as remoteness, profile of issues) for which data are readily available, while the NLWRA indicators primarily reflect internal factors within their sphere of influence (such as knowledge of NRM, leadership competency, and financial management performance).

Typologies have been used to inform the design and delivery of NRM programs and research in Australia in the case of landholders

Table 1 Summary of methods and background information on the exploratory indicators used to examine external factors affecting the capacity of regional NRM bodies.

External factor	Exploratory indicator	Method and background information
Regional setting and complexity	Area and population	Area and population data were sourced from 'regional report cards' posted on the Department of Agriculture, Fisheries and Forestry's webpage ( <a href="http://www.nrm.gov.au/publications/index.html#nsw-report-cards">http://www.nrm.gov.au/publications/index.html#nsw-report-cards</a> ; accessed 9–10 May 2006), with the exception of figures footnoted.
	Program boundaries and state boundaries	Regional maps were used to identify regions with cross-regional and cross-State boundary responsibilities under the NAP ( <a href="http://www.nrm.gov.au">www.nrm.gov.au</a> >About NRM regions, then go to each State/Territory). Those with cross-boundary responsibilities are recorded as '1', those without as '0'.
Physical remoteness	Physical remoteness (ARIA+)	The Accessibility/Remoteness Index of Australia (ARIA+) is the standard Australian Bureau of Statistics (ABS) endorsed measure of geographic remoteness. The index is derived from road distance between populated localities and service centres, and quantifies accessibility in non-metropolitan areas. ARIA+ scores are based on the inclusion of five service centres (rather than four in the case of the earlier ARIA score), providing a slightly more detailed representation of remoteness across Australia. The ARIA+ index ranges from 0 to 15 (compared to 0–12 in the case of ARIA), which the ABS classifies as: major cities of Australia (0–0.20), inner regional Australia (>0.20–2.40), outer regional Australia (>2.40–5.92), remote Australia (>5.92–10.53) and very remote Australia (>10.53). The location of the head office of each regional NRM body was used to generate ARIA+ scores using the calculator available at <a href="http://www.gisca.adelaide.edu.au">www.gisca.adelaide.edu.au</a> (accessed 17 May 2006). Further description of the method can also be found at this site.
Political and bureaucratic decision-making processes	Remoteness from decision-makers	An estimate is made of the sum of the time and expense for the general manager of a regional body to travel from their head office to the State/Territory capital and to Canberra, as the seat of national government and its agencies (for one-day meetings on separate occasions), including airfare, vehicle mileage, taxi, accommodation and meal/sundry expenses.
Access to information	Electronic remoteness	The Telstra BigPond broadband search facility ( <a href="http://my.bigpond.com/internetplans/broadband/">http://my.bigpond.com/internetplans/broadband/</a> >Check Broadband Availability) was used to determine the availability of internet access from regional bodies head offices). This indicates potential rather than actual internet services, and only accounts for the region's head office (some regions have more than one office location).
The profile of regional NRM issues	Profile of issues	Two indicators are used to identify regions with NRM issues with higher political and public profile – whether it has been designated under the NAP, or falls within the Murray-Darling Basin (and therefore within the Murray-Darling Basin Initiative). The Commission has, under various guises, existed since 1915, and has a long history of Basin-specific policies and research (Murray-Darling Basin Commission, 2006). The figures '2' and '1' are used to denote whether the NRM region is wholly or partly within NAP designation and/or the Murray-Darling Basin, and '0' if neither.
Proximity to learning and research centres	Learning centres	A web-based search was conducted of all Australian universities to identify the regions in which NRM courses are available. A complete list of universities is available at <a href="http://www.australian-universities.com/list/">www.australian-universities.com/list/</a> , and is directly linked to their webpages. A list of campuses and locations was identified for each university, followed by a course search to elicit the availability of NRM-related courses in the region. This indicator only measures the number of universities delivering NRM courses in a region, not quantity, diversity or quality.
	Research centres	A web-based search of CSIRO and State government research centres was used to identify the location of facilities engaged in NRM research. CSIRO's 57 research centres are listed at <a href="http://www.csiro.au">www.csiro.au</a> >Where we are (accessed 18 May 2006). Individual State agency webpages were interrogated to identify main research institutes, coupled with email correspondence with State researchers where web-based information was inadequate (sources footnoted in Table 2).

(Emtage *et al.*, 2006), and local governments (Wild River, 2005), but not in the case of regional organisations. The exploratory capacity typology described in this section is based on the indicators shown in Table 1 and illustrated using aircraft metaphors. Data are presented in Table 2 according to the ten regional classes. The ten classes (Figure 2) are grouped on the basis of the principal attributes highlighted in the table, and described below. Further aggregation could produce a smaller number of classes; however, we consider that the ten based on the principal attributes shown are sufficiently different to warrant separate classification for the purposes of this exploratory study. Attempts to use a statistical method called 'k-mean clustering' to identify classes did not result in logical groupings, and was therefore not pursued further. This is not to imply that statistical approaches could

not be applied in further exploration of capacity typologies, especially as data are improved and enlarged, but we argue that a non-statistical approach in this case is not necessarily any less valid. This capacity typology is robust but could be further developed following completion of the NLWRA Australia-wide assessment of the capacity of regional organisations in 2007.

*Class 1 – 'Jumbo' regions*

The defining attributes denoting the seven 'Jumbo' regions are very high population (945 000–3.5 million people), a relatively small area (1840–37 000 km<sup>2</sup>), and a high number of research centres and universities (5–19 in total). They have ready access to services (ARIA+ score 0.00–0.57: refer Table 1) and low travel costs (with the exception of travel to Canberra for the Swan region in Western Australia (WA)).

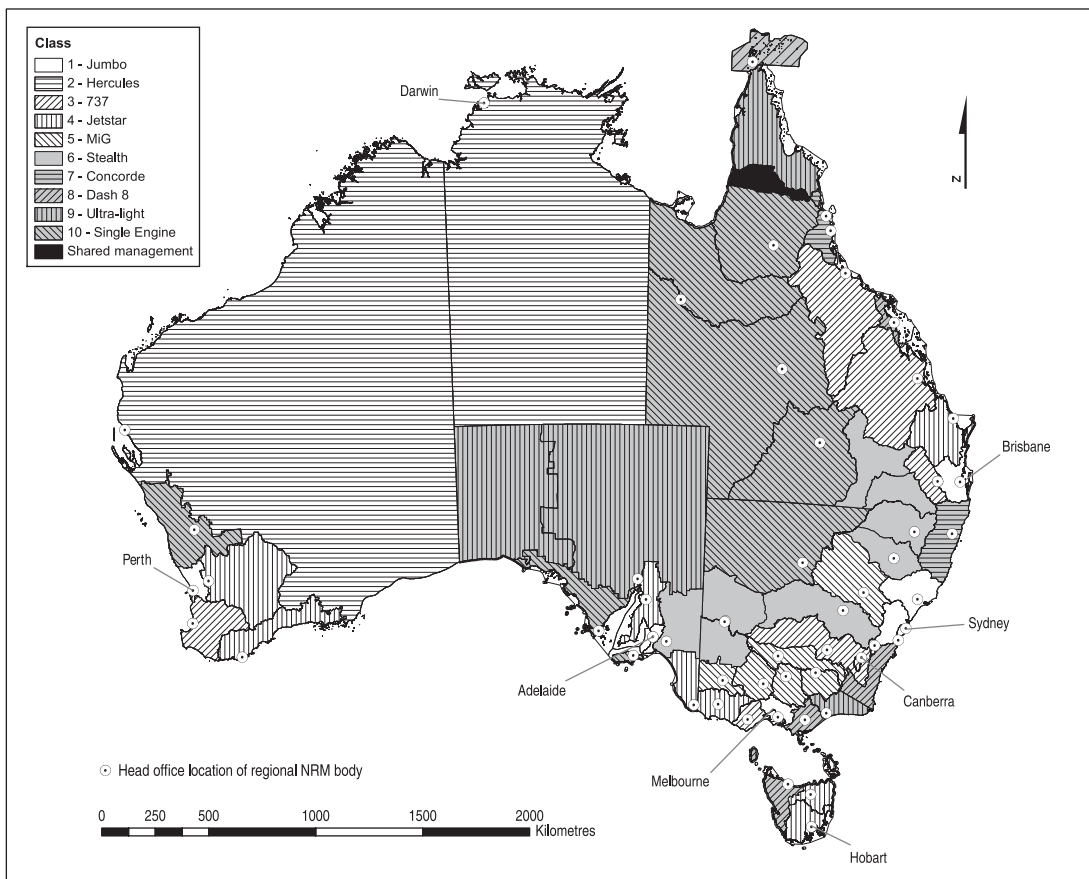


Figure 2 Distribution of the ten 'exploratory' capacity classes across Australia's 56 NRM regions. (Prepared by Karl Nissen, Centre for Resource and Environmental Studies, Australian National University, September 2006. Regional boundary and label data sourced from <http://www.deh.gov.au/metadataexplorer/explorer.jsp>.)

Table 2 Data for 56 NRM regions according to 'exploratory' capacity indicators (and grouped on the basis of the principal attributes highlighted).

State	NHT region	Exploratory capacity indicators											
		Area (km <sup>2</sup> )	Pop. (no.)	ARIA+ (0–15)	Travel (State) (\$)	Travel (Cbr) (\$)	BBD (0–2)	NAP (0–2)	MDB (0–2)	Cross-NAP (0 or 1)	Cross-State (0 or 1)	NRM Unis (no.)	Res. Ctrs (no.)
<b>Class 1 – 'Jumbo' regions</b>													
NSW	Hunter-Central Rivers	37 000	945 000 <sup>^</sup>	0.56	729	1741	1	0	0	0	0	1	4
NSW	Sydney Metropolitan	1 840	3 000 000	0.00	710	1375	1	0	0	0	0	9	5
NSW	Hawkesbury-Nepean <sup>^</sup>	22 000	800 000	0.57	1448	933	0	0	0	0	0	0	0
QLD	South East	23 000	2 500 000	0.00	650	2004	1	2	0	1	0	8	11
SA	Adelaide and Mount Lofty Ranges	3 880 <sup>^</sup>	1 000 000	0.00	650	1741	1	2	0	1	0	2	11 <sup>^</sup>
VIC	Port Phillip and Westernport	13 000	3 500 000	0.00	693	1475	0	0	0	0	0	9	9
WA	Swan	7 700	1 400 000	0.00	650	4482	0	1	0	1	0	4	9 <sup>#</sup>
<b>Class 2 – 'Hercules' regions</b>													
NT	Northern Territory	1 346 200	200 000	3.00	650	4304	1	1	0	0	1	8	11 <sup>*</sup>
WA	Rangelands	1 850 000	133 000	8.10	1468	5190	0	1	0	1	1	1	4 <sup>#</sup>
<b>Class 3 – '737' regions</b>													
ACT	Australian Capital Territory	2 358	320 000	0.00	600	600	1	2	2	1	1	4	7
NSW	Murrumbidgee	84 000	520 000	1.01	1020	1995	1	2	2	1	1	1	7
QLD	Burdekin	133 432 <sup>#</sup>	190 000 <sup>#</sup>	3.00	1449	3090	1	2	0	1	0	1	6
QLD	Condamine	27 500 <sup>*</sup>	162 000 <sup>*</sup>	0.19	1339	2125	1	2	2	1	1	1	8
QLD	Fitzroy	300 000	200 000	1.35	1459	2814	0	2	0	1	0	3	5
VIC	Corangamite	13 340	330 000	1.11	1395	2497	0	2	0	1	0	4	2
WA	South West	50 000	193 000	0.92	1440	5232	0	2	0	0	0	2	8 <sup>#</sup>
<b>Class 4 – 'Jetstar' regions</b>													
QLD	Burnett Mary	88 000	257 000	1.73	1303	3032	1	2	0	1	0	1	3
SA	Northern and Yorke	37 800	100 000	2.70	1437	2978	0	2	0	1	0	1	3 <sup>^</sup>
SA	South East	21 000	63 000	2.32	1088	3039	0	2	0	0	0	1	4 <sup>^</sup>
TAS	South	25 000	232 000	1.80	650	2205	0	1	0	1	0	1	4
TAS	North	25 000	135 000	1.80	1438	2078	1	2	0	1	0	1	2
VIC	Glenelg Hopkins	26 000	95 850	2.10	1938	3040	1	2	0	1	0	2	1
WA	South Coast	54 000	57 000	2.70	1122	4844	0	2	0	0	0	1	2 <sup>#</sup>
WA	Avon	118 000	46 000	0.96	787	4609	0	2	0	1	0	1	3 <sup>#</sup>



Table 2 *Continued.*

State	NHT region	Exploratory capacity indicators											
		Area (km <sup>2</sup> )	Pop. (no.)	ARIA+ (0–15)	Travel (State) (\$)	Travel (Cbr) (\$)	BBD (0–2)	NAP (0–2)	MDB (0–2)	Cross-NAP (0 or 1)	Cross-State (0 or 1)	NRM Unis (no.)	Res. Ctrs (no.)
<b>Class 5 – ‘MiG’ regions</b>													
NSW	Central West	92 000	180 000	2.63	1079	2004	0	2	2	1	0	1	3
NSW	Murray	35 500	101 000	2.25	2409	2335	0	2	2	1	0	2	1
VIC	Goulburn Broken	23 915	189 500	0.88	1443	2301	0	2	2	0	0	1	3
VIC	North Central	30 000	230 000	0.47	1395	2497	1	2	2	0	0	1	1
VIC	North East	19 800	200 000	0.66	1034	1246	1	0	2	0	0	2	2
VIC	Wimmera	23 500	44 000	2.88	1955	2499	1	2	2	1	1	1	1
<b>Class 6 – ‘Stealth’ regions</b>													
NSW	Border Rivers-Gwydir	50 000	75 000 <sup>@</sup>	3.04	1465	2610	0	2	2	1	1	0	1
NSW	Lachlan	84 700	100 000	2.61	1098	2055	0	2	2	1	1	0	1
NSW	Namoi	42 000	94 000	2.42	1408	2306	0	2	2	1	1	0	3
QLD	Maranoa Balonne Border Rivers	100 670 <sup>*</sup>	54 600 <sup>*</sup>	0.19	1339	2125	1	2	2	1	1	0	2
SA	Lower Murray Darling	63 300	29 000	2.59	1262	2187	0	2	2	1	1	0	1 <sup>^</sup>
SA	South Australian Murray Darling Basin	70 000	81 000	0.94	764	2305	1	2	2	1	1	0	2 <sup>^</sup>
VIC	Mallee	39 256	61 095	2.47	1326	2869	0	2	2	1	1	0	3
<b>Class 7 – ‘Concorde’ regions</b>													
NSW	Northern Rivers	50 000	550 000	1.93	1701	2061	0	0	0	0	0	2	6
QLD	Wet Tropics	22 000	200 000	3.90	2335	3161	0	0	0	0	0	1	8
<b>Class 8 – ‘Dash 8’ regions</b>													
NSW	Southern Rivers	29 000	400 000	0.10	766	1431	1	0	0	0	0	1	0
QLD	Mackay Whitsunday	9 000	113 285	2.16	1501	3263	1	0	0	0	0	2	1
TAS	North West	22 500	107 000	2.67	1933	1999	1	0	0	0	0	1	2
VIC	West Gippsland	17 500	170 000	0.81	1416	2518	0	0	0	0	0	2	1
<b>Class 9 – ‘Ultra-light’ regions</b>													
QLD	Cape York	137 000	18 000	3.00	1731	3092	1	0	0	0	0	0	0
SA	Alinytjara Wilurara	250 000	5 000 <sup>+</sup>	0.00	650	1741	1	0	0	0	0	0	0 <sup>^</sup>
SA	South Australian Arid Lands	538 000	25 000	2.48	990	3041	0	1	1	1	1	0	0 <sup>^</sup>
VIC	East Gippsland	21 300	38 000	2.43	1932	3034	0	0	0	0	0	0	0

Table 2 *Continued.*

State	NHT region	Exploratory capacity indicators											
		Area (km <sup>2</sup> )	Pop. (no.)	ARIA+ (0–15)	Travel (State) (\$)	Travel (Cbr) (\$)	BBD (0–2)	NAP (0–2)	MDB (0–2)	Cross-NAP (0 or 1)	Cross-State (0 or 1)	NRM Unis (no.)	Res. Ctrs (no.)
<b>Class 10 – ‘Single engine’ regions</b>													
NSW	Western	230 000	18 000	9.32	1921	3511	1	1	2	1	1	0	0
QLD	Desert Channels	510 000	16 000	11.67	2628	3930	1	0	0	0	0	0	1
QLD	Northern Gulf	194 000	9 000	13.18	3646	4272	1	0	0	0	0	0	0
QLD	Southern Gulf	230 000	35 000	6.00	2218	3694	1	0	0	0	0	1	1
QLD	South West	187 170	10 000	10.49	2449	3417	1	1	2	1	1	0	1
QLD	Torres Strait	48 000	8 000	15.00	4320	5776	0	0	0	0	0	1	0
SA	Eyre Peninsula	55 000	33 000	6.23	1188	2969	1	0	0	0	0	1	2 <sup>^</sup>
SA	Kangaroo Island	4 370	4 000	6.95	1088	2845	1	2	0	0	0	0	0 <sup>^</sup>
WA	Northern Agricultural	75 000	60 000	9.00	2410	5692	0	2	0	0	0	0	3 <sup>^</sup>

*Notes & sources (by column):*

BBD – Type of broadband connection.

NAP – Designation under the National Action Plan for Salinity and Water Quality.

MDB – Murray-Darling Basin.

Region – <sup>^</sup> Hawkesbury-Nepean (NSW) has been amalgamated with Sydney Metropolitan (NSW) for the purposes of regional categorisation, as it is Sydney’s principal water source catchment Area – <sup>^</sup> K. Good, pers comm, 27 May 2006; # www.burdekindrytropics.org.au/about/region/index.html; accessed 22 May 2006; \* T. Gowdie, Qld Murray-Darling Committee, pers comm, 26 & 31 May 2006.

Population – <sup>^</sup> www.hcr.cma.nsw.gov.au then see ‘blueprints’ for Hunter, Central and Lower North Coast; # www.burdekindrytropics.org.au/about/region/index.html; accessed 22 May 2006; \* T. Gowdie, Qld Murray-Darling Committee, pers comm, 26 & 31 May 2006; @ www.nrm.gov.au/state/nsw then see ‘blueprints’ for Border Rivers and Gwydir; + G. Ormsby, Alinytjara Wilurara NRM region, pers. comm., 30 June 2006.

Research Centres<sup>^</sup> – Northern Territory (S. MacCarthy, Charles Darwin University, NT, pers comm., 22 August 2006); South Australia (B. Munday, CRC for Plant-based Management of Dryland Salinity, pers comm, 26 May 2006; P. Butler, Department of Land, Water and Biodiversity Conservation, SA, pers comm, 1 June 2006); Western Australia (J. Bartle, Conservation and Land Management, WA, pers comm., 26 May 2006; D. Bennett, WA Department of Agriculture and Food, pers. comm., 29 May 2006, J. McGrath, Forest Products Commission, WA, pers. comm., 26 May 2006).

*Class 2 – ‘Hercules’ regions*

The defining feature of a ‘Hercules’ region is its vast area (1 346 200 km<sup>2</sup> and 1 850 000 km<sup>2</sup>). The Northern Territory is somewhat of an anomaly in that it is a ‘State’ rather than a ‘region’. These have a moderate overall population (200 000 and 133 000 people). Access to universities is available throughout the Northern Territory. One university campus and four research centres are located in the Rangelands (WA). There are two NAP regions within the Northern Territory, one of which is shared with the Rangelands. The cost of travel to the State capital is low, but expensive to Canberra, and ARIA+ scores are high (3.00 and 8.10).

*Class 3 – ‘737’ regions*

A ‘737’ region (seven total, three in Queensland) is characterised by high access to resources and services, coupled with the necessity to coordinate planning and management with other regions. They are all priority regions under the NAP (three also within the Murray-Darling Basin), and have high access to research and learning centres (the number of research centres and universities ranges from seven to 11). Travel to the State capital is inexpensive, but moderate to high to Canberra in some regions. The regions have very high access to services, with ARIA+ scores of 0.00–1.35, with the exception of the Burdekin (Qld) at 3.00. All regions, except the South West (WA), have cross-boundary NAP planning issues, and in some cases between States. Population is moderate (162 000–520 000), while area is varied (2358–300 000 km<sup>2</sup>).

*Class 4 – ‘Jetstar’ regions*

‘Jetstar’ regions closely mirror ‘737’ regions, but have fewer universities and research centres (3–5), including at least one university. Their population is generally smaller (46 000–257 000 people) and access to services lower, but with good access to financial resources. All regions are NAP-designated, but outside the Murray-Darling Basin, and none has State cross-boundary planning responsibilities (although some have NAP responsibilities). Regional area is more uniform (21 000–118 000 km<sup>2</sup>), and travel costs to State capitals are comparable, but travel costs to Canberra higher on average. Class 4 comprises eight regions, with two in each of WA, New South Wales (NSW) and Tasmania.

*Class 5 – ‘MiG’ regions*

‘MiG’ regions (six, of which four are in Victoria) have comparable access to learning and research

centres as ‘737’ regions, but greater potential access to resources and knowledge by virtue of being within the Murray-Darling Basin. Only one (North East, Victoria) is not an NAP region.

*Class 6 – ‘Stealth’ regions*

‘Stealth’ regions (seven, three in NSW) have equivalent access to resources as ‘MiG’ regions, as they are NAP regions and within the Murray-Darling Basin, but face a higher level of planning complexity and more limited access to technical support. ‘Stealth’ regions have cross-boundary issues at both NAP and State levels, and no universities offering NRM courses. They do, however, have between one and three research centres.

*Class 7 – ‘Concorde’ regions*

The defining features of a ‘Concorde’ region are its high number of research centres (six and eight) in a small area, coupled with low potential to access resources. ‘Concorde’ regions are outside the Murray-Darling Basin and not NAP-designated. Population size is moderate to high (550 000 and 200 000), with ARIA+ scores of 1.93 and 3.90. Northern Rivers (NSW) and Wet Tropics (Queensland) comprise this class.

*Class 8 – ‘Dash 8’ regions*

A ‘Dash 8’ region is differentiated from a ‘Concorde’ region by lower access to learning and technical support, with fewer universities and research centres (1–2). They represent moderate to high populations (107 000–400 000 people) in relatively small areas (9000–29 000 km<sup>2</sup>), with good access to services (ARIA+ score 0.10–2.67), but restricted access to resources (not NAP-designated or within Murray-Darling Basin).

*Class 9 – ‘Ultra-light’ regions*

An ‘Ultra-light’ region is denoted by having no universities or research centres. These regions have reasonable access to services (ARIA+ score 0.00–3.00 for head office, which may be outside the region) and low to moderate travel costs to State and federal capitals. The population is small (5000–38 000 people), but the regional area varies in extent (137 000–538 000 km<sup>2</sup>, and only 21 300 km<sup>2</sup> for East Gippsland, Victoria).

*Class 10 – ‘Single engine’ regions*

A ‘Single engine’ region is remote (ARIA+ scores 6.00–15.00). This generally results in higher travel costs to State and federal capitals.

However, almost all have access to broadband or desktop wireless facilities. Universities and research centres are not well represented (0–3), while about half are within the Murray-Darling Basin and/or designated (wholly or partly) under the NAP. Of nine Class 10 regions, five are in Queensland and two in South Australia.

### PART III – NHT2 and NAP budget allocations

We now explore whether regional ‘type’, representing external factors beyond the influence of regional NRM bodies, is reflected in allocated budgets. In the absence of accessible actual regional budgets, total NHT2 and NAP funds (to June 2005) are used as a surrogate indicator of financial resources (Natural Resource Management Ministerial Council, 2005). These budgets allocate spending (self-defined by regions) to resource assessment, planning, capacity-building and on-ground activities. This may underestimate available resources of regions with larger budgets, as they have scope to diversify income sources. The analysis uses \$/km<sup>2</sup> as the unit for examining differences in total NRM budgets between regions, and \$/person to examine differences in capacity-building funding.

#### *Budget allocations between States/Territories*

There are significant disparities in total NHT2 and NAP budgets between States/Territories (see Table 3), ranging from a total of \$2.45 million for the Australian Capital Territory to an average of \$14.24 million per region in Victoria. At the State/Territory level, this is determined to some

extent by the willingness of individual governments to commit resources on a dollar-for-dollar basis with the Australian Government (Part I), but the apportioning of total resources among jurisdictions is still strongly dictated by intra- and inter-governmental decision-making processes. The Australian Capital Territory (ACT) and Victoria received a total budget allocation of \$1021 per km<sup>2</sup> and \$625 per km<sup>2</sup> respectively, whereas the remaining States/Territory range from \$5 to \$118 per km<sup>2</sup>.

The NAP provides substantial resources for targeting salinity, primarily a phenomenon of southern Australia. While this should explain greater resources allocated to the southern States, it does not explain Victoria capturing 36.3% (\$142.43 million) of the total while representing only 3.1% of the land area. The greatest expanse, severity and threat of dryland salinity is in Western Australia, which has a total allocation of \$44.4 million, and is prominent in many New South Wales regions (receiving less than half the allocation of Victoria at \$70.34 million) (Commonwealth of Australia, 2000). Victoria’s disproportionate share of resources is perhaps explained by the maturity of its regional arrangements, formalised by the *Catchment and Land Protection Act 1994*, relative to other States.

#### *Budget allocations between classes*

Table 4 shows combined NHT2 and NAP budget allocations (to June 2005) for each region (in total and per unit area) and adjusted averages for the ten typological classes. Adjusted averages

Table 3 NHT2 and NAP budget allocation by State/Territory (to June 2005) (collated from Natural Resource Management Ministerial Council, 2005).

State	NHT2/NAP budget allocation (to June 2005)				
	State total \$M	Reg. avge \$M	Total area '000 km <sup>2</sup>	Total pop. '000 pers	\$/Area \$/km <sup>2</sup>
ACT	2.45	2.45	2	320	1021
NSW	70.34	5.41	821	6812	86
NT	7.26	7.26	1346	200	5
QLD	49.07	3.77	2010	3773	24
SA	67.76	8.47	980	1313	69
TAS	8.59	2.86	73	474	118
VIC	142.43	14.24	228	4858	625
WA	44.40	7.40	2155	1889	21
	392.3	6.48	7615	19639	246

Table 4 NHT2/NAP budget allocation (to June 2005) in total, by area and for capacity building activities, according to each individual region and typological class (average adjusted). Highlighting indicates anomalies.

State	Region	NAP/NHT2* \$	\$.Area \$/km <sup>2</sup>	Cap. Bldg %	Cap. Bldg* \$	Cap. Bldg \$/person
<b>Class 1 – ‘Jumbo’ regions</b>						
NSW	Hunter-Central Rivers	4 149 486	112	17	705 413	0.75
NSW	Sydney Metropolitan & Hawkesbury-Nepean	4 198 437	176	25	1 049 609	0.28
QLD	South East	5 090 928	221	55	2 800 010	1.12
SA	Adelaide and Mount Lofty Ranges	12 279 202	3165	37	4 543 305	4.54
VIC	Port Phillip and Westernport	5 062 095	389	19	961 798	0.27
WA	Swan	7 341 846	953	48	3 524 086	2.52
	Total Adjusted Average	4 625 237	225	29	1 379 208	1
<b>Class 2 – ‘Hercules’ regions</b>						
NT	Northern Territory	7 258 535	5	30	2 177 561	10.89
WA	Rangelands	10 471 520	6	15	1 570 728	11.81
	Total Adjusted Average	8 865 028	6	23	1 874 144	11
<b>Class 3 – ‘737’ regions</b>						
ACT	Australian Capital Territory	2 454 851	1041	29	711 907	2.22
NSW	Murrumbidgee	12 945 195	154	23	2 977 395	5.73
QLD	Burdekin	3 855 086	29	35	1 349 280	7.10
QLD	Condamine	5 078 281	185	64	3 250 100	20.06
QLD	Fitzroy	8 048 296	27	16	1 287 727	6.44
VIC	Corangamite	15 409 654	1155	30	46 226	14.01
WA	South West	7 093 027	142	49	3 475 583	18.01
	Total Adjusted Average	7 403 977	107	37	2 468 017	11
<b>Class 4 – ‘Jetstar’ regions</b>						
QLD	Burnett Mary	4 122 396	47	21	865 703	3.37
SA	Northern and Yorke	4 295 904	114	50	2 147 952	21.48
SA	South East	5 909 502	281	40	2 363 801	37.52
TAS	South	2 985 025	119	30	895 508	3.86
TAS	North	3 331 708	133	19	633 025	4.69
VIC	Glenelg Hopkins	21 312 865	820	33	7 033 245	73.38
WA	South Coast	6 949 014	129	61	4 238 899	74.37
WA	Avon	6 669 474	57	41	2 734 484	59.45
	Total Adjusted Average	4 894 718	126	37	1 982 767	29
<b>Class 5 – ‘MiG’ regions</b>						
NSW	Central West	2 842 166	31	38	1 080 023	6.00
NSW	Murray	22 319 282	629	4	892 771	8.84
VIC	Goulburn Broken	37 914 560	1585	13	4 928 893	26.01
VIC	North Central	24 689 536	823	16	3 950 326	17.18
VIC	North East	5 111 273	258	13	664 465	3.32
VIC	Wimmera	13 321 196	567	12	1 598 544	36.33
	Total Adjusted Average	16 360 322	569	11	1 776 527	16
<b>Class 6 – ‘Stealth’ regions</b>						
NSW	Border Rivers-Gwydir	2 458 002	49	74	1 818 921	24.25
NSW	Lachlan	3 077 074	36	26	800 039	8.00
NSW	Namoi	1 343 213	32	68	913 385	9.72
QLD	Maranoa Balonne Border Rivers	7 666 495	76	18	1 379 969	25.27
SA	Lower Murray Darling	3 562 079	56	22	783 657	27.02
SA	South Australian Murray Darling Basin	31 196 904	446	17	5 303 474	65.47
VIC	Mallee	10 260 416	261	39	4 001 562	65.50
	Total Adjusted Average	3 621 373	50	42	1 139 194	19
<b>Class 7 – ‘Concorde’ regions</b>						
NT	Northern Rivers	8 239 382	165	27	2 224 633	4.04
QLD	Wet Tropics	3 180 915	145	28	890 656	4.45
	Total Adjusted Average	5 710 149	155	28	1 557 645	4

Table 4 *Continued.*

State	Region	NAP/NHT2* \$	\$.Area \$/km <sup>2</sup>	Cap. Bldg %	Cap. Bldg* \$	Cap. Bldg \$/person
<b>Class 8 – ‘Dash 8’ regions</b>						
NSW	Southern Rivers	4 057 360	140	76	3 083 594	7.71
QLD	Mackay Whitsunday	2 408 962	268	47	1 132 212	9.99
TAS	North West	2 268 838	101	21	476 456	4.45
VIC	West Gippsland	5 492 323	314	32	1 757 543	10.34
	Total Adjusted Average	3 556 871	206	44	1 612 451	8
<b>Class 9 – ‘Ultra-light’ regions</b>						
QLD	Cape York	1 280 403	9	40	512 161	28.45
SA	Alinytjara Wilurara	5 403 547	22	25	1 350 887	270.18
SA	South Australian Arid Lands	2 231 083	4	0	0	0
VIC	East Gippsland	3 853 620	181	14	539 507	14.20
	Total Adjusted Average	2 971 678	12	22	621 016	100
<b>Class 10 – ‘Single engine’ regions</b>						
NSW	Western	1 147 816	5	96	1 101 903	61.22
QLD	Desert Channels	2 230 013	4	48	1 070 406	66.90
QLD	Northern Gulf	1 949 678	10	40	779 871	86.65
QLD	Southern Gulf	1 975 590	9	27	533 409	15.24
QLD	South West	2 181 647	12	62	1 352 621	135.26
QLD	Torres Strait	–	–	–	–	–
SA	Eyre Peninsula	3 372 927	61	55	1 855 110	56.22
SA	Kangaroo Island	3 067 381	702	18	552 129	138.03
SA	Northern Agricultural	5 879 240	78	52	3 057 205	50.95
	Total Adjusted Average	2 342 114	22	48	1 218 816	59

\* Budget data collated from Natural Resource Management Ministerial Council (2005).

exclude significantly higher or, in one case (Central West, NSW), lower budget allocations per unit area within a class. These anomalies (highlighted, Table 4) are discussed below. Table 4 also shows regional budget allocations (total and per person) for capacity-building activities.

‘MiG’ regions are distinctive for having an average total budget of \$16.4 million, and per unit area allocation of \$569/km<sup>2</sup>, about two and half times that of the next nearest type (‘Jumbo’ at \$225/km<sup>2</sup>). ‘Jumbo’, ‘737’, ‘Jetstar’, ‘Concorde’ and ‘Dash 8’ regions have moderate unit area allocations ranging from \$107 to \$225/km<sup>2</sup>, but significantly lower average total budgets (\$3.6–7.4 million). ‘Hercules’ regions have the second highest overall budget (\$8.9 million), but very low expenditure per unit area at \$6/km<sup>2</sup>. The remaining three classes (‘Stealth’, ‘Ultra-light’, ‘Single engine’) have both low average total budgets (\$2.3–3.6 million) and by unit area (\$12–50/km<sup>2</sup>).

The high average total and per unit area budgets for ‘MiG’ regions demonstrate the comparative advantage of both NAP-designation and location in the Murray-Darling Basin, coupled

with low remoteness and proximity to universities and research centres, influencing decision-making processes and accessing information. It was anticipated that the average total budgets for ‘737’ regions would exceed those of ‘MiG’ regions on the basis of having similar characteristics (although there are only three regions within the Murray-Darling Basin), but a much greater presence of universities and research centres. This difference is attributed to the regions in this category being non-Victorian States (excepting Corangamite), although the prevalence of cross-boundary issues within this class may also act as a barrier. Similarly, ‘Jetstar’ regions have comparable attributes to ‘MiG’ regions but are not located within the Murray-Darling. Like ‘737’ regions, the anomaly is in Victoria (Glenelg Hopkins).

‘Jumbo’ and ‘Concorde’ regions exhibit a high prevalence of universities and research centres, and moderate average budgets despite being outside the boundaries of the Murray-Darling (the two anomalies are NAP regions). In the case of ‘Jumbo’ regions, it is likely that proximity to

decision-making processes assists in garnering resources.

'Stealth' regions have a small allocation of \$50/km<sup>2</sup> despite being NAP-designated and within the boundaries of the Murray-Darling. This outcome is attributed to some degree to the complex planning environment, with all regions exhibiting cross-boundary planning issues at both NAP and State levels, and compounded by the scarcity of universities and research centres.

'Ultra-light' regions have an average allocation of \$12/km<sup>2</sup>, which may be attributed to large regional areas compounded by lack of access to resources through the NAP or the Murray-Darling Basin Initiative (except part of South Australian Arid Lands) and the absence of universities and research centres. 'Single engine' regions have an average allocation of \$22/km<sup>2</sup> and a small average total budget of \$2.3 million. This outcome is largely attributed to their high remoteness.

#### *Accounting for within-class anomalies*

Anomalies within classes are highlighted in Table 4. Three classes have no anomalies ('Hercules', 'Concorde', 'Dash 8'). Eleven anomalies are shown in the remaining seven classes, with no more than two in any class. Adelaide and Mount Lofty Ranges (South Australia – SA) is the most extreme, with an allocation of \$3165/km<sup>2</sup>, compared to \$17–\$55/km<sup>2</sup> for the four other regions in the same class; and the Swan (WA) is also an anomaly at \$953/km<sup>2</sup>. The Goulburn Broken (Victoria) stands out within the cohort of generally well-funded 'MiG' regions (\$258–823/km<sup>2</sup>) with a budget of \$1585/km<sup>2</sup>, while the other anomaly in the class, Central West (NSW), received only \$31/km<sup>2</sup>.

The Australian Capital Territory (ACT) and Corangamite (Victoria) have high allocations (\$1041/km<sup>2</sup> and \$1155/km<sup>2</sup>, respectively), whereas the budgets of the other five '737' regions range from \$29 to \$185/km<sup>2</sup>. Another Victorian region, Glenelg Hopkins, received \$820/km<sup>2</sup>, relative to \$47–281/km<sup>2</sup> for the remaining seven regions. The five typical 'Stealth' regions have uniform budgets ranging from \$32 to \$76/km<sup>2</sup>, whereas the two anomaly regions (South Australian Murray Darling Basin and Mallee, Victoria) received \$446/km<sup>2</sup> and \$261/km<sup>2</sup>, respectively. East Gippsland (Victoria) was allocated \$181/km<sup>2</sup>, compared to the other three 'Ultra-light' regions at \$4–22/km<sup>2</sup>. Finally, only one of the nine 'Single engine' regions fell outside the range of \$4–78/km<sup>2</sup> (Kangaroo Island, \$702/km<sup>2</sup>).

As a cohort, five of these anomalies are in Victoria (Corangamite, East Gippsland, Glenelg Hopkins, Goulburn-Broken, Mallee), three in South Australia (Adelaide and Mount Lofty Ranges, Kangaroo Island, South Australian Murray-Darling Basin), and the remainder one each from New South Wales (Central West), Western Australia (Swan) and the ACT. The significant variation in budgets is attributed to influence differences between the States/Territories. In the case of Victoria, this reflects the disproportionate share of total NHT2/NAP resources allocated to the State discussed earlier and, together with the Swan (WA), may relate to the networks developed by these regional organisations over longer histories of operation.

In South Australia, resourcing of the Adelaide and Mount Lofty Ranges and South Australian Murray-Darling Basin regions may be explained by their long-standing role in the deliberations of the Murray-Darling Basin Commission and as recipients of Murray-Darling surface waters (some of these resources have also perhaps flowed to Kangaroo Island by virtue of its proximity to Adelaide). All three are NAP-designated.

The anomaly of the higher ACT allocation probably reflects its power and influence base, with Canberra as both national and Territory capital. Program design, delivery and resourcing are core businesses in Canberra, which is also the location of Australian Government agencies, national research bodies and non-government organisations.

#### *Capacity-building allocations*

Total expenditure on capacity-building activities (self-defined) by regional bodies (to June 2005) was \$106 million (~27% of total allocation). The target audiences for these capacity-building activities may be land managers, Landcare or similar groups, industry organisations, the regional community and/or the regional NRM body and Board itself. While the percentage of actual budgets allocated to building capacity of regional NRM bodies and Boards is not known, an examination of regional budgets allocated to capacity-building (in total and per person) indicates the importance attributed to and scale of capacity-building activities.

The total proportion allocated to capacity-building between regions shows no distinct pattern, ranging very widely from 0 to 96% of total budget (\$0–7.03 million). Within-class variability is also high in either percentage or dollar terms, for example 'Single engine' regions (18–96% of total regional budget) and 'Jetstar'

regions (\$865 000–7.03 million per region). The only clear exception is 'MiG' regions, which range from 4% to 16%, indicating that regions with larger average total budgets can allocate smaller percentages to capacity-building.

Some patterns emerge with respect to total budget allocation to capacity-building on the basis of regional population, although the range is still great at \$0–270 per person. 'Jumbo', 'Hercules', 'Concorde' and 'Dash 8' regions have relatively uniform capacity allocations on a population basis, at \$1, \$11, \$4 and \$8 per person, respectively. 'Single engine' regions stand out with \$59 per person on average (\$15–135). Variability within other classes is more pronounced.

There are significant differences between regions in the apparent importance attributed to capacity-building and thus resources allocated. These variations beg further investigation and clarification, regarding what activities and costs are designated as 'capacity-building', whether regional NRM bodies and their Boards are adequately targeted, and intended outcomes.

### Conclusions

This investigation demonstrates that there are significant differences between NRM regions, that their attributes affect budget allocations (with implications for planning and management outcomes), and that changing these attributes is largely beyond regional influence. Also indicated are strong signs of resource allocation governed by issues other than the management of natural resources, and that delivery of national programs may be compromised by powerful State and regional interests.

The paper suggests that the playing field is uneven and will not right itself without intervention. There is a snowballing effect, where regions with more resources have greater capacity (staff resources, experience, skills and information) to gain further resources. This accentuates the gap between the 'have' and the 'have not' regions. We suggest there is a role for using typological approaches to analyse and guide program and research design and delivery, including resource allocation generally, and specifically in the case of capacity-building. If regional delivery and governance are to continue to develop, these disparities need to be purposefully targeted.

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