

Watershed Management in New South Wales, Australia:

A Case of Constrained Decentralization?

Pedro I. J. Fidelman*

School of Earth and Environmental Sciences
and Centre for Maritime Policy
University of Wollongong, Australia

Decentralization includes different types of policy reforms aiming to shift powers from centralized to more localized institutions, such as sub-national units of administration, local government, the civil society and/or local user groups. It has gained increasing support, particularly in the realm of natural resources management (NRM). Moving towards more decentralized forms of NRM can, however, involve remarkable institutional challenges. Understanding the factors that can facilitate and/or constrain decentralization is, therefore, critical in overcoming such institutional challenges, as well as (re)designing and implementing more suitable policies.

In Australia, catchment management – a watershed management initiative – is an example of moving decision-making for NRM from the State to the catchment (watershed) level. New South Wales (NSW) was the first Australian State to adopt, in the late 1980s, catchment management as a state-wide statutory policy. Catchment management has since undergone a number of institutional changes. Specific legislation, for instance, has been introduced and reformed, such as the Catchment Management Act 1989, the Catchment Management Regulation 1999, and the Catchment Management Authorities Act 2003. Consequently, Catchment Management Committees, which operated in the 1990s were replaced by Catchment Management Boards in 2000, which in turn, have recently been replaced with Catchment Management Authorities.

This paper presents preliminary findings from a broader study on the NSW catchment management initiative, and examines decentralized approaches to NRM as part of such a NSW initiative. Catchment management institutions are analyzed by applying the

* Environmental Science Unit (Building 19), University of Wollongong, NSW 2522, Australia. Tel. + 61 2 4221 4044; fax: + 61 2 4221 4665. Email: pedro.fidelman@gmail.com

Institutional Analysis and Development (IAD) framework in combination with the recent theorizing on decentralization of NRM.

Decentralized Approaches to NRM: The NSW Catchment Management Initiative

Decentralized approaches have gained increasing support in several countries, particularly in the realm of NRM (Agrawal and Ribot, 1999; Ribot, 2002b; Larson and Ribot, 2004). In Australia, catchment management – a watershed management initiative – is an example of moving decision-making for NRM from the State¹ to the catchment (watershed) level.

As noted above, New South Wales (NSW) was the first Australian State to adopt catchment management as a state-wide statutory policy. Catchment management has since undergone a number of institutional changes (Table 1). It was initially adopted as an institutional response to ineffective NRM regimes characterized by sectoral and fragmented approaches. Catchment management aimed at improving the coordinated use of land, water, vegetation and other natural resources on a watershed basis, emphasizing community participation and voluntary implementation (NSWSCS, 1987).

Table 1: Catchment Management Institutions in NSW.

Institutional levels	YEAR			
	< 1980s	1989	1999	2003
Constitutional-choice	Sectoral and fragmented NRM institutions	Catchment Management Act	Catchment Management Regulation	Catchment Management Authorities Act
Collective-choice	(at all levels)	Catchment Management Trusts and Committees	Catchment Management Boards	Catchment Management Authorities
Operational-choice		Local groups, resource users, government agencies, catchment management bodies, Local government etc.		

Catchment management was legally institutionalized in 1989, with the introduction of the NSW Catchment Management Act. Under this Act, Catchment Management Committees (CMCs) were established to coordinate NRM at the watershed level². Each CMC was formed

¹ In Australia, States and Territories have primary responsibility for natural resources management. Nevertheless, the Federal government has exerted significant influence through national programs jointly funded with State and Territories governments (e.g., the National Heritage Trust).

² A few Catchment Management Trusts were also established under the Catchment Management Act. Such Trusts are not examined in this paper.

by land holders or resource users (normally a majority of the members), environmental interests and Local and State government representatives. Committee members were appointed by the responsible Minister, usually from a panel nominated by particular interest groups (e.g., Nature Conservation Council, industry groups) and/or through public advertisement (i.e., self nomination). Despite being statutory, the CMCs were advisory bodies only, e.g., the catchment management plans had no legal authority; implementation relied mostly on voluntary action and, to some extent, on the provisions of related policies.

The Catchment Management Regulation 1999 replaced the CMCs with 18 Catchment Management Boards (CMBs) (NSW, 1999). The membership composition was modified to include representatives from the Aboriginal community, in addition to representatives from resource users, nature conservation, local and state government (DLWC, 2000). The short life of the CMBs was dedicated primarily to the development of an integrated catchment management plan (the Catchment Blueprint) for their respective areas. The Blueprints were also advisory documents. They would, however, guide NRM investments in the catchment (DLWC, 2000).

In early 2004, the CMBs were disbanded and 13 Catchment Management Authorities (CMAs) were established under the Catchment Authorities Act 2003. The CMAs are independent bodies that report directly to the Minister, and are no longer under the responsibility of a State government agency, as were the CMCs and CMBs. Each CMA board comprises of between five and seven non-ministerial office holders, appointed based on their knowledge and skills, rather than on representation of particular interest groups. In addition to an advisory role similar to their predecessors, the CMAs have governing and operational roles (NSW, 2003). A distinguishing feature of the CMAs is the application of a corporate governance approach, i.e., the use of private sector management methods, operating thus as public enterprises.

The development of catchment management in NSW has been characterized by major institutional changes. Such changes include the creation, review and reform of the arrangements defining the participants in catchment management institutions and the type of authority/power transferred to these institutions. Institutional challenges to decentralization of NRM related to these arrangements are the focus of this study. A framework for analyzing these institutional arrangements is presented below.

A Framework of Decentralized NRM Institutions

Decentralization involves the formal transfer of powers from a central government to actors and institutions at lower levels in a political-administrative and territory hierarchy (Agrawal and Ribot, 1999; Ribot, 2002a; Larson and Ribot, 2004). It includes different types of policy reforms aiming to shift powers from centralized to more localized institutions, such as sub-national units of administration, local government, the civil society and/or local user groups (Meinzen-Dick and Knox, 2001). Current thinking on decentralization of NRM has promoted more democratic and rights-based approaches (Larson and Ribot, 2004). Political or democratic decentralization (referred hereafter as decentralization) takes place when powers and resources are transferred to institutions representative of, and accountable to, local populations (Agrawal and Ribot, 1999; Ribot, 2002a). It is regarded as a strategy of governance to facilitate power shifts closer to those who are most affected by the exercise of power (Agrawal and Ribot, 1999). By bringing decision-making closer and making it open and accountable to local populations, decentralization is believed to lead to increased equity and efficiency in NRM (Agrawal and Ribot, 1999; Ribot, 2002a; Larson and Ribot, 2004). In this context, effective decentralization is defined by inclusive and accountable processes where local entities are empowered with meaningful discretionary authority over the management of natural resources that are relevant to local populations (Ribot, 2002b, a).

Institutions can be defined in terms of formal rules and informal norms, which constrain or foster human behavior, and are adopted by individuals operating within or across organizations (Ostrom, 1999). Such rules, both formal and informal, can be classified into seven broad categories, i.e., position, boundary, choice, aggregation, information, payoff and scope rules (Ostrom and Crawford, 2005). In this paper these rules are conceptualized as follow:

- *Position* rules specify the participants (individuals or entities) and their roles in a decentralized institution;
- *Boundary* rules define who is eligible to take part in this institution and how participants are selected;
- *Choice* rules specify the authority transferred to the institution;
- *Aggregation* rules refer to decision-making procedures, including arrangements to aggregate the preferences of the public and stakeholders into decision-making;

- *Information* rules define the arrangements for information exchange among participants, and between participants and other stakeholders, the public and other institutions;
- *Payoff* rules refer to the incentives and disincentives in terms of resources (e.g., human resources and funding) available for the institution to exercise its authority;
- *Scope* rules define the functional scope and the geographic domain that can be affected by a decentralized institution.

To analyze decentralized approaches to NRM in the context of this study, a set of evaluative criteria was developed by combining the recent theorizing on decentralization of NRM (e.g., Agrawal and Ribot, 1999; Meinzen-Dick et al., 2001; Ribot, 2002a, b; Larson and Ribot, 2004) and the institutional aspects of the IAD framework (Ostrom, 2005), as conceptualized above. The resulting evaluative framework is presented in Table 2.

Table 2: Evaluative framework of decentralized NRM institutions

RULES	EVALUATIVE CRITERIA
Position	Participation is representative of and accountable to local populations and all relevant stakeholders. Participation is thus inclusive in nature.
Boundary	Selection of participants allows for representative and accountable participation. Selection processes are deemed to be as legitimate and democratic as possible.
Choice	Meaningful authority to affect NRM outcomes is transferred from the central government to decentralized institutions. Such authority is exercised in an independent fashion.
Aggregation	Decision-making aggregates the preferences, values and needs of those who are mainly affected by the exercise of power
Information	Communication and interaction with local populations, stakeholders and the central government entail mechanisms for reporting and monitoring performance, enhancing accountability particularly to local populations.
Payoff	Adequate resources are transferred allowing decentralized institutions to exercise their authority.
Scope	Authority is transferred to a lower political-administrative and territory hierarchy, e.g., sub-national units of administration; local government; the civil society and/or local user groups; watersheds, sub-watersheds or bioregions.

Methods

The framework of decentralization of NRM conceptualized above was used to examine challenges to catchment management institutions in NSW. Institutional rules comprising the CMCs, CMBs and CMAs were assessed against this evaluative framework. Sources of information and data for this study included relevant documents, such as legislation, reports, reviews, as well as consultations with individuals and organizations involved with catchment management in NSW. Data collection and analysis followed the tradition of qualitative research methods (e.g., Miles and Huberman, 1994; Patton, 2002). In addition, this paper drew on case studies undertaken by this author as part of a broader study on NSW catchment management, as well as other Australian cases available in the literature.

Examining Constraints to Catchment Management Institutions

Position Rules

CMCs and CMBs comprised around 20 representatives of selected stakeholder groups, i.e., as seen above, landholders and/or resource users, Local government authorities, officers of State government agencies, representatives of environmental interests and, in the case of the CMBs, Aboriginal interests. Participation in CMCs and CMBs was limited in terms of representation and inclusiveness. Aboriginal groups and people of non-English background, for example, were under-represented in CMCs (AACM, 1996). In contrast, landholders and/or resource users were over-represented in CMCs and CMBs. Participation in the current CMAs comprises of between 5 and 7 non-ministerial position holders with expertise in areas related to NRM, regardless of the membership they might have to any interest group³.

Boundary Rules

The constraints to participation and representation outlined above are explained primarily by boundary rules. The 1989 Catchment Management Act required that the majority of members of the CMCs and CMBs comprised landholders or resource users (NSW, 1989), which resulted in over-representation of these stakeholder groups. Boundary rules, as specified in the legislation, applied to all CMCs and CMBs across NSW, which were therefore limited in

³ Board members of CMAs may come from a diverse background, such as Aboriginal and Farmer backgrounds. They, however, are not to represent the stakeholder group they come from.

catering for the different socioeconomic and political realities of the catchments, and, consequently, for representative and accountable participation. Selection of participants of the current CMAs on the basis of expertise is exclusive and contravenes representation.

Ministerial appointment of participants to decentralized institutions is not a democratic process and raises questions about legitimacy and accountability to local populations. In the past, the legitimacy of the selection process of catchment management institutions were undermined by interventions of elected officials in the selection process of some CMCs, in order to fit political interests (Margerum, 1996). Appointed boards, as part of the corporate governance arrangements currently used in the Australian public sector, have been questioned in terms of accountability, formal authority and safeguards to protect the public interest (see e.g., Howard and Seth-Purdie, 2005).

Choice Rules

The roles of the CMCs and CMBs were primarily advisory in nature. As mentioned above, the catchment management plans, for instance, despite being statutory documents, were not legally binding. The much needed commitment, collaboration and responsibility to voluntary implementation comprised some of the major challenges. Participants in CMCs and CMBs usually did not have the authority to commit on behalf of their organizations. Furthermore, the roles of catchment management institutions, such as the CMCs, were usually ignored particularly by State government agencies (AACM, 1996).

In contrast, CMAs have been considerably empowered in terms of authority to implement NRM decisions and actions, as they have been assigned governing and operational roles. However, such powers can be constrained due to the influence of State and Federal government in setting requirements and priorities at the strategic level. Furthermore, the emphasis on the use of corporate governance procedures, where activities may be largely rationalized – i.e., closely planned, organized, coordinated and controlled – can result in processes that are overly driven and controlled by the central government (Boxelaar et al., 2006). Autonomy and flexibility occurs, therefore, within the rules set by the government, as CMAs need to comply with procedures that are aligned with and reinforce government powers.

Aggregation Rules

Direct representation of certain stakeholder groups in decision-making might have comprised the main aggregation mechanism in the CMCs and CMBs. Communication and interaction (information rules) between participants with their “constituency” would lead to the aggregation of their preferences, values and needs into decision-making. As seen above, achieving accountable representation has, however, been an issue in catchment management institutions. Input from the public and stakeholders was also sought by using *ad hoc* aggregation mechanisms such working groups, sub-committees, stakeholders’ fora, and consultations. Government priorities and requirements as well as the corporate governance approach applied to CMAs might not always provide opportunities for adequate aggregation of public and stakeholder preferences (Boxelaar et al., 2006). Additional challenges to aggregation results from the larger areas of operation of CMAs. These areas can encompass more diverse NRM issues and actors, whose preferences should be aggregated into decision-making (see scope rules below).

Information Rules

Despite using various procedures (both formal and informal) for information exchange, communication and interaction with the public and stakeholders has, in some instances, been perceived to be similar to traditional approaches undertaken in less participatory initiatives. As the Wentworth Group puts it, “*Despite the rhetoric, communities continue to be consulted rather than engaged*” (TWG, 2002). That is, public and stakeholders consultations have, in many cases, figured primarily as a single centralized mechanism. The consultations undertaken during the development of the Catchment Blueprints by the CMBs, for example, have been considered by participants as time consuming and ineffective. Furthermore, the somewhat frequent changes in NRM institutions have resulted in “burn-out” of participants and the public, driving them away from the process.

Other important aspects of the information rules refer to arrangements for reporting and monitoring performance. In contrast to CMCs that presented loose mechanisms for reporting and monitoring (AACM, 1996), CMAs are required to produce a number of reports and plans. These reports and plans are subject to recommendation and/or approval by other entities. CMAs are also subject to external financial and performance audits. These reporting, monitoring and auditing processes aim to ensure that State and Federal government priorities are met and that stronger accountability within the organization and to central governments is

in place. The emphasis on upward accountability can, however, undermine its downward dimension (i.e., the accountability to local populations and stakeholders).

Payoff Rules

Catchment management has in the past been characterized by limited resources, both in terms of support staff and funding. CMCs, for example, were usually supported by only one or two staff. The funding available for catchment management was largely captured by State government agencies (AACM, 1996). At present, catchment management institutions have, on the other hand, been given substantially more resources. Some of the CMAs, for instance, employ some 40 staff. The initial announced budget for CMAs was of A\$ 436.5 million over a period of 4 years (DIPNR, 2004). These allocations have been provided jointly by the NSW and Federal governments largely from national programs (e.g., the Natural Heritage Trust [NHT] and the National Action Plan for Salinity and Water Quality [NAP]). In addition, A\$ 100 million would be transferred, over 4 years, in staff and resources from the NSW Department of Infrastructure, Planning and Natural Resources to the CMAs (DIPNR, 2004). The use of these resources, however, needs to comply with the requirements and priorities of the NSW and Federal programs.

Scope Rules

The overall functional scope of catchment management institutions in NSW has been the coordination of NRM at the catchment or regional level. The geographical domain has, however, been enlarged over time, shifting from local to regional scales. Several CMCs, east of the Great Dividing Range⁴, operated within discrete local catchment or sub-catchment areas. CMAs have, on the other hand, jurisdiction over large regional domains. The Southern Rivers CMA, for example, encompasses an area which was once the responsibility of 7 CMCs. The larger geographic domains of the CMAs allow for a more regional and strategic focus in addressing problems of regional, State and National significance (e.g., biodiversity and vegetation management). Larger geographical scopes, however, have implications and can pose challenges to other institutional rules, such as position, boundaries, information, aggregation and payoff rules. These challenges include achieving accountable and

⁴ The Great Dividing Range is a main watershed in Eastern Australia, comprising a series of plateaus and mountain ranges parallel the Eastern coast.

representative participation of potentially more diverse populations and stakeholders; communicating and interacting with these populations and stakeholders; aggregating their preferences into decision-making; and securing adequate resources to carry out NRM actions and activities.

Conclusions

Institutional arrangements used in the NSW catchment management initiative have failed, to some extent, to meet each of the criteria of a decentralized institution. Achieving accountable representation of catchment populations and stakeholders; securing meaningful and, in particular, more independent powers from the NSW and Federal governments; and establishing effective arrangements for aggregating the preferences of the catchment populations and stakeholders into decision-making, were the major challenges identified in moving towards more democratic forms of decentralization. This paper suggests that, despite the rhetoric of decentralization, the NSW and Federal governments are still resisting true transfer of powers to local/regional NRM institutions.

Despite the constraints, catchment management institutions have produced some positive outcomes (which were not explored in this paper), such as promoting environmental awareness and education, engaging some sectors of community and industry, and working in collaboration with other organizations and local groups. Overcoming the constraints and improving outcomes will require changes in the institutional rules in use. Future research should focus on why and how these rules have been created and changed so that adequate forms of intervention can be devised.

Acknowledgement

This study has been supported by CAPES Foundation, Government of Brazil, through a PhD scholarship. The author thanks Professor John Morrison and Associate Professor Ron West for discussion of some of the concepts addressed in this paper.

References

- AACM, 1996. Review of Catchment Management in New South Wales. Final Report, Department of Land and Water Conservation, Sydney.
- Agrawal, A. and Ribot, J., 1999. Accountability in Decentralization: A Framework with South Asian and West African Cases. *The Journal of Developing Areas*, 33: 473-502.
- Boxelaar, L., Paine, M. and Beilin, R., 2006. Community Engagement and Public Administration: Of Silos, Overlays and Technologies of Government. *Australian Journal of Public Administration*, 65(1): 113-126.
- DIPNR, 2004. Natural Resource Management \$436.5 Million Boost, Media Release - Ministers Office, Sydney.
- DLWC, 2000. Draft Catchment Management Board Support Package. NSW Department of Land and Water Conservation.
- Howard, C. and Seth-Purdie, R., 2005. Governance Issues for Public Sector Boards. *Australian Journal of Public Administration*, 64(3): 56-68.
- Larson, A.M. and Ribot, J.C., 2004. Democratic Decentralization Through a Natural Resource Lens: An Introduction. *The European Journal of Development Research*, 16(1): 1-25.
- Margerum, R.D., 1996. Integrated Environmental Management: A Framework for Practice. Occasional Paper No. 9, Centre for Water Policy Research/University of New England, Armidale.
- Meinzen-Dick, R. and Knox, A., 2001. Collective Action, Property Rights, and Devolution of Natural Resource Management: A conceptual Framework. In: R. Meinzen-Dick, A. Knox and M.D. Gregorio (Editors), *Collective Action, Property Rights, and Devolution of Natural Resource Management: Exchange of Knowledge and Implications for Policy*, Proceedings of the International Conference, Puerto Azul, The Philipines. 21-25 June 1999. Published by DSE/ZEL, Feldafing, Germany, pp. 41-73.
- Meinzen-Dick, R., Knox, A. and Gregorio, M.D., 2001. Collective Action, Propety Rights and Devolution of Natural Resource Management: Exchange of Knowledge and Implications for Policy, Proceedings of the International Conference - Puerto Azul, The Philipines. 21-25 June 1999. Published by DSE/ZEL, Feldafing, Germany, 249 pp.
- Miles, M.B. and Huberman, A.M., 1994. *Qualitative Data Analysis: An Expanded Source Book*. Sage Publications, Thousand Oaks, CA, 338 pp.
- NSW, 1989. Catchment Management Act, New South Wales, Australia.
- NSW, 1999. Catchment Management Regulation, New South Wales, Australia.

- NSW, 2003. Catchment Management Authorities Act, New South Wales, Australia.
- NSWSCS, 1987. Total Catchment Management: A State Policy, NSW Soil Conservation Service, Sydney.
- Ostrom, E., 1999. An Assessment of the Institutional Analysis and Development Framework. In: P. Sabatier (Editor), *Theories of the Policy Process (Theoretical Lenses on Public Policy)*. Westview Press, Boulder, pp. 35-71.
- Ostrom, E., 2005. *Understanding Institutional Diversity*. Princeton University Press, Princeton, 355 pp.
- Ostrom, E. and Crawford, S., 2005. Classifying Rules. In: E. Ostrom (Editor), *Understanding Institutional Diversity*. Princeton University Press, Princeton, pp. 187-215.
- Patton, M.Q., 2002. *Qualitative Research and Evaluation Methods*. Sage Publications, Thousand Oaks, 598 pp.
- Ribot, J.C., 2002a. African Decentralization: Local Actors, Powers and Accountability. Paper No. 8, United Nations Research Institute on Social Development (UNRISD) Programme on Democracy, Governance, and Human Rights, Geneva.
- Ribot, J.C., 2002b. *Democratic Decentralization of Natural Resources: Institutionalizing Popular Participation*, World Resources Institute.
- TWG, 2002. *Blueprint for a Living Continent: A Way Forward from the Wentworth Group of Concerned Scientists*, WWF Australia, Sydney.