

**Challenges to Decentralization of Watershed Management:
The Case of New South Wales, Australia**

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Challenges to Decentralization of Watershed Management:

The Case of New South Wales, Australia¹

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Decentralization includes different types of policy reforms aiming to shift powers from centralized to more localized institutions. 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 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.

¹ This paper is a modified version of the paper “Watershed Management in New South Wales, Australia: A Case of Constrained Decentralization?” presented at the 11th Biennial Conference of the International Association for the Study of Common Property (IASCP), Bali, Indonesia, 19-23 June, 2006. This study was undertaken as part of a Ph.D. program at the School of Earth and Environmental Sciences of the University of Wollongong, Australia, and benefited from a Ph.D. scholarship provided by CAPES, Government of Brazil.

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This paper summarizes some of the findings from a broader study on the NSW catchment management initiative (see Fidelman, 2006), and examines decentralized approaches to NRM as part of such a NSW initiative. Building on the Ostrom's institutional rule sets and the recent theorizing on decentralization of NRM, an evaluative framework was developed to examine catchment management in NSW.

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 State³ 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: Development of Catchment Management in NSW.

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

³ 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, National Action Plan for Salinity and Water Quality).

Catchment management was legally institutionalized in the late 1980s, with the introduction of the NSW *Catchment Management Act 1989*. Under this Act, Catchment Management Committees (CMCs) were established to coordinate NRM at the watershed level⁴. Each CMC was formed by land holders or resource users (normally a majority of the members), environmental interests and Local and State government representatives (NSW, 1989). 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) (AACM, 1996). Despite being statutory, the CMCs were advisory bodies only (NSW, 1997), i.e., the catchment management plans had no legal authority; implementation relied, therefore, on voluntary and collaborative action and/or 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, 1999, 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 were, however, aimed to 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 (DIPNR, 2004), 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 on the basis of knowledge and skills, rather than of 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 their *modus operandi*, which includes the use of corporate governance approaches from the private sector, as part of the “New Public Management” model.

⁴ A few Catchment Management Trusts were also established under the Catchment Management Act. Such Trusts are not examined in this paper.

The development of catchment management in NSW has, therefore, 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 next.

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).

Different concepts and definitions of the term *institution* exist. In this paper, institutions are 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). Institutions are system of rules, decision-making procedures, and programs that cause social practices, assign roles to participants in such practices, and guide interactions among occupants of relevant roles (Young, 2005). 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 the context of this study, these rule categories are conceptualized as follow:

- *Position* rules specify the participants (individuals or organizations) 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.

In order to analyze decentralized approaches to watershed management, a framework was developed by combining the recent theorizing on decentralization of natural resources (e.g., Agrawal and Ribot, 1999; Meinzen-Dick et al., 2001; Ribot, 2002b, a; Larson and Ribot, 2004) and the institutional rule categories (Ostrom and Crawford, 2005), conceptualized above. Specifically, the concept and principles of decentralization of natural

resources were categorized into Ostrom and Crawford's seven sets of institutional rules⁵. The resulting 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.

It is important to recognize the normative and prescriptive nature of the framework. A true decentralized NRM institution may, therefore, be an ideal to be pursued. A more realistic situation is one where decentralized institutions meet the evaluative criteria to varying degrees.

Data and Methods

The framework of decentralization of NRM conceptualized above was used to examine institutional challenges to catchment management in NSW. The institutional rules comprising the CMCs, CMBs and CMAs were assessed against the evaluative framework. Sources of information and data for this study included documentation and archival records (legislation,

⁵ See Fidelman (2006) for details on the development of the framework.

reports, meeting minutes etc.) and interviews and observations⁶. 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 Australian cases available in the literature (e.g., AACM, 1996; Margerum, 1996; Bellamy et al., 2002).

Examining Challenges 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 (AACM, 1996; DLWC, 2000) and, in the case of the CMBs, Aboriginal interests (DLWC, 2000). Despite the relatively large number of participants and the somewhat diverse background of these participants, these institutions were not perceived as largely inclusive. Aboriginal groups and people of non-English background, for example, were under-represented in CMCs (AACM, 1996), such as the Illawarra CMC in South East NSW. In contrast, landholders and/or resource users were usually “over-represented” in CMCs and CMBs. Participation has become less inclusive in the current CMAs, as they comprise of between 5 and 7 non-ministerial position holders with expertise in areas related to NRM, rather than representatives of particular stakeholders⁷. Participation in the catchment management institutions analyzed has, therefore, been limited in terms of representation and inclusiveness.

Boundary Rules

The constraints to participation and representation discussed above are explained primarily by boundary rules. Boundary rules, as specified in the legislation, applied to all CMCs and CMBs across NSW, which were therefore limited in catering for the different socioeconomic and political realities of the catchments, and, consequently, for representative participation. The *Catchment Management Act 1989*, for example, required that the majority of members of the CMCs and CMBs comprised landholders or resource users (NSW, 1989), which resulted

⁶ See Fidelman (2006) for detailed information on the data and methods used in this study.

⁷ Board members of CMAs may come from diverse backgrounds, such as Aboriginal and Farmer backgrounds. They, however, are not to represent the stakeholder group they come from, rather, they are expected to provide knowledge and expertise derived from their background.

in disproportionate representation of these stakeholder groups. Selection of participants of the current CMAs on the basis of expertise – where only those individuals with the skills and knowledge in relevant areas of NRM are eligible to participate in the CMAs board – 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, similar to the CMAs, 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).

Boundary rules have been characterized by constraints to inclusive, representative and accountable participation in NSW catchment management institutions. The selection process of participants to these institutions has not been perceived as democratic and conducive to downward accountability.

Choice Rules

The authority assigned to CMCs and CMBs was limited in nature as their roles were primarily advisory. As mentioned above, the catchment management plans they were required to develop, for instance, despite being statutory documents, were not legally binding. Furthermore, CMCs and CMBs did not have adequate human resources and funding to implement these plans. Lacking meaningful authority and powers, the mandate of catchment management institutions such as the CMCs was, in general, naturally ignored by other organizations and institutions (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 somewhat constrained due to the influence of State and Federal government in setting requirements and priorities at the strategic level. Furthermore, the emphasis of the CMAs on the use of corporate governance procedures, where activities are 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 (see e.g., Boxelaar et al., 2006). Autonomy and flexibility may occur, therefore, within the rules set by the government, as CMAs need to comply with procedures that are aligned with and reinforce government powers.

Authority and powers transferred to catchment management institutions in NSW have been characterized as constrained for the NSW initiative. These institutions are unlikely to be effective unless they have appropriate authority and powers to affect the management of natural resources in the catchment.

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, short political timeframes, as well as the corporate governance approach applied to CMAs may not always provide opportunities for adequate aggregation of public and stakeholder preferences. Additional challenges to aggregation result 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).

Aggregating the preferences, needs and values of catchment populations in decision-making has been challenging for the institutions examined. Challenges to aggregation include shortcomings in participation (i.e., limited inclusiveness and representation), constraints to communicating and interacting with populations and stakeholders, and large geographic domains.

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 are believed to 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, however, is not followed by the downward dimension (i.e., the accountability to local populations and stakeholders), which has been given lower priority.

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. In addition, the funding available for catchment management was, in some cases, largely captured by State government agencies (AACM, 1996). The level of financial support was, therefore, perceived as inadequate to support the activities and projects of CMCs and CMBs (AACM and CWPR, 1995; AACM, 1996; SCMB, 2003). 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 then 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. Over-dependence on government funding, and the attached requirements and priorities for expenditures, has obvious implications for the autonomy, flexibility and sustainability of the CMAs.

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 Range⁸, operated within discrete local catchment or sub-catchment areas. The NSW catchment management review concluded that the scale of those CMCs was too small to benefit from economies of scale or to achieve strategic focus (AACM, 1996; Anonymous, n.d.). 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 6 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 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. In terms of accountability, representation and participation, some political or administrative jurisdictions may be too large to be considered local (Ribot, 2004).

⁸ The Great Dividing Range is a main watershed in Eastern Australia, comprising a series of plateaus and mountain ranges parallel the Eastern coast.

Concluding Remarks

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.

In fact, the current catchment management institutions in NSW conform largely to the concept of deconcentration (i.e., administrative decentralization) rather than to that of democratic decentralization. Deconcentration is a form of administrative decentralization by which responsibilities are transferred to local/regional branches of the central government, such as regional offices of state government agencies (Agrawal and Ribot, 1999; Ribot, 2002b, a). These entities are local/regional administrative extensions of the central state, which may have some downward accountability built in their functions, but the primary responsibility is to the central government (Ribot, 2002b). Because it lacks some of the local accountability that theorists believe is key to make decentralization work, deconcentration is regarded as a weak form of decentralization (Ribot, 2004).

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. In this context, understanding why and how these rules have been created and changed is also critical so that adequate forms of intervention can be devised.⁹

⁹ This is examined in Fidelman (2006).

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