



Analysis

Collaborative approaches to water management and planning: An institutional perspective

Jayanath Ananda^{a,*}, Wendy Proctor^b

^a School of Economics, La Trobe University, Wodonga VIC 3690, Australia

^b CSIRO Ecosystem Sciences, Crace ACT 2911, Australia

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ABSTRACT

Despite the popularity and rhetoric of collaborative approaches, the successes of such initiatives are not widespread and remain elusive. Some commentators argue that without ‘the noise of participation’, a return to centralised governance should be reconsidered. Whilst this conclusion may be premature given the lack of rigorous analysis of collaborative approaches, it calls for a closer examination of contexts and processes that are conducive to the success of collaborative initiatives. This paper evaluates the scope of collaborative watershed management and planning in the Howard River Catchment in northern Australia. The findings depict the challenges of collaborative planning in a nested hierarchy with multiple institutions. The existing institutional apparatus can potentially constrain the collaborative initiatives to water planning. They include the norms of agency authority, administrative inflexibility and power structures in a nested institutional hierarchy. Delegating decision making responsibility to decentralized structures should be backed up by the development of the capacity of such structures. Considerable transaction costs exist in overlaying collaborative approaches across a nested hierarchy of multiple institutions.

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1. Introduction

The importance of collaborative institutions in managing complex natural resources such as river catchments is widely acknowledged. However, the current understanding of collaborative institutions is imperfect and still evolving (Barreteau et al., 2012; Poirier and de Loë, 2010). Collaborative approaches are ‘typically defined as inclusive decision processes that bring together multiple stakeholders, help build networks and trust, and emphasise consensus decision procedures and voluntary compliance’ (Lubell et al., 2010, p. 288). Gray (1985) defines a collaborative relationship as the ‘pooling of appreciations and/or tangible resources, e.g. information, money, labour, etc., by two or more stakeholders to solve a set of problems which neither can solve individually’ (Gray, 1985, p. 912). Collaborative watershed management as a broad strategy emphasises voluntary multi-party relationships including partnerships¹ (Moote, 1996), face-to-face engagement processes (Bingham, 1986), interdependence and common goal seeking (Wondolleck and Yaffee, 2000).

There is a growing body of literature which discusses the effectiveness of collaborative approaches (Conley and Moote, 2003; Leach et al., 2002). Collaboration is professed to achieve multiple objectives:

building understanding between public agencies and communities, manage uncertainty through joint research and fact finding and lead to decisions that are more likely to be implemented effectively (Wondolleck and Yaffee, 2000). Collaborative approaches have also been effective in adaptive governance initiatives (Scholz and Stiffler, 2005), in integrating different types of knowledge and expertise in watershed partnerships (Barreteau et al., 2012; Ferreyra and Beard, 2007). In a nutshell, collaborative approaches tend to reduce transaction costs of cooperation among multiple policy actors and stand in stark contrast to the traditional top-down approach in which each government agency pursues its own narrow legal mandate. Despite these grandiose claims, the gap between the collaborative vision of natural resource management and its realisation remains wide (Lubell et al., 2010; Marshall, 2001).

As collaborative approaches have become widespread and are incorporated into existing policy frameworks, the level of scrutiny of the approach has also been increased in recent times (Conley and Moote, 2003). Under what conditions, do collaborative approaches lead to efficient agreements between parties or improved water resource management outcomes? What can and cannot be expected from these approaches? What factors may influence the effectiveness of collaboration. For instance, Lubell (2004) found that the collaborative institutions indirectly increase the levels of consensus by changing collective beliefs, but may not change the levels of cooperative behaviour. Kenney (2000) also drew a similar conclusion arguing that collaborative approaches have led to attitudinal changes without behavioural cooperation. Lubell et al. (2010), using an ‘Ecology of

* Corresponding author at: School of Economics, La Trobe University, Albury–Wodonga Campus, Wodonga VIC 3690, Australia. Tel.: +61 2 6024 9848; fax: +61 2 6024 9833.

E-mail address: j.ananda@latrobe.edu.au (J. Ananda).

¹ Possible examples include CALFED superagency in California and Murray–Darling Basin Authority in Australia.

Games' (Long, 1958) framework,² reported a negative interaction between collaborative institutions and traditional planning institutions in terms of their effects of cooperative attitudes and behaviours.

Policies that manage river basin resources encompass conflicting interests and evolve constantly due to changes in the environment and people's production and consumption choices. Such choices are essentially guided by the prevailing institutional set up.³ Understanding how the existing institutional settings impact the collaborative approaches is important in designing adaptive water institutions. There is a compelling need to take a fresh look at the scope of collaborative initiatives at the community level water planning processes, especially how they relate to, and are influenced by, the existing institutional structures. In this article, we examine how the existing institutional configurations impact on water management and planning. In particular, institutional dynamics that influence the collaborative possibilities in a nested hierarchy of water governance are examined using a case study in Northern Territory, Australia.

The paper is organised in the following manner. The paper begins by providing a brief synopsis of the Institutional Analysis and Development (IAD) frameworks that can be used to analyse collaborative approaches in water management. In Section 3, the framework is applied to a case study in Northern Australia. Institutional barriers to collaboration at the catchment level water planning are discussed in Section 4. The final section provides some concluding remarks.

2. Institutional Analysis and Development (IAD) Framework

The Institutional Analysis and Development (IAD) framework developed by Ostrom and her colleagues from an institutional rational choice perspective provides a useful platform to examine the intricacies of collaboration at the watershed level. According to the IAD framework (Fig. 1), three broad categories of variables: (i) the attributes of institutions, (ii) the attributes of the resource, and (iii) the attributes of the community, affect the structure of the decision arena. The framework models an action arena as a function of both the attributes of the individual (values and resources), and the decision situation (Kiser and Ostrom, 1982). Both the attributes of the individual and the decision situation interact to produce outcomes in a particular policy setting. The attributes of the individual specify the assumptions concerning the individual's preferences, information processing capabilities, current information, personal resources and decision rules. The decision situation comprises a set of resources and constraints defining which actors are allowed to participate in a policy game, the positions, moves and information available to them, the outcomes for various patterns of individual actions and associated payoffs for the actors for each outcome (Sabatier et al., 2005a,b). The decision situation is a product of institutional rules, the nature or the biophysical condition of the relevant resource, and the attributes of the community (Kiser and Ostrom, 1982). The biophysical condition of the resource indicates the status of the resource (whether the resource is overexploited) and the nature of relationship between the anthropogenic behaviour and its environmental impact. Community attributes cover behavioural norms, discount rates, and aggregate cultural and social capital (Kiser and Ostrom, 1982). Institutional rules determine who and what are included in decision situations, how information is structured, what actions can be taken and in what

sequence and how individual actions will be aggregated into collective decisions.

Sabatier (1991) extended Ostrom's institutional analysis by defining three nested levels of policy action: the operational level (e.g. catchment management authority decisions), the collective choice level (e.g. the statute governing the catchment management authority) and constitutional level (e.g. the constitution governing the legislature). Nested governance is seen as a logical solution to large-scale common pool resource problems from several theoretical fronts including collective action and a 'robustness' perspective⁴ (Marshall, 2008). Nested governance allows decentralised decision making as opposed to centralised decision making common in mono-centric governance structures (Marshall, 2008). Ostrom (1999) highlighted the merits of decentralised decision making in managing large-scale common property resources. They include enhanced access to local knowledge, the ability to harness informal institutional arrangements to exclude untrustworthy elements, the ability to capture feedback on the performance of institutional rules in a disaggregated way, enabling rules to be adapted to local situation, lowered enforcement costs and reduces the possibility of failure in institutional rules for an entire region (Ostrom, 1999). The feedback capture property of the decentralised system can be a double-edged sword. The local feedback on rules might strengthen the robustness of a socio-ecological system against localised disturbances. At the same time it might weaken the robustness to larger-scale disturbances (Marshall, 2008).

The decisions made at each level of institutional hierarchy are bound by the institutional rule set of the preceding level. For instance, state institutional mechanisms determine the regional and local level institutional design. Federal⁵ institutions determine the state institutional arrangements. Decisions at the regional and local level determine individual actions and resource use patterns at the grassroots level. In the watershed management setting, the operational responsibility is bestowed upon the catchment management authorities.⁶ The operational rules affect the resource consumption behaviour of the general public and business enterprises'. They also affect the resource supply decisions including the amount of water to be extracted, the amount of water that should be assigned to safeguard fragile river systems and watersheds.

At the next level of the institutional hierarchy, collective choice rules establish the management policies and programmes that direct or constrain the water agency production decisions. Moreover, the factual information and opinions held by various interested parties (actors) may shape the policy. At the federal and state level, for example, specialised groups such as the media, research institutions, influential lobby groups and forums can not only exert pressure on decisions but they also provide substantive policy information to the choice situation. They may also propose innovative policy options for consideration and thereby enhance the policy choice. Combined with these groups, three other factors, namely institutional arrangements, resource status and community characteristics, frame the choice set.

The success of collaboration greatly depends on the collaborative process design. Deliberations related to collaborative water planning represent a major part of the feedback in the policy process. Public and stakeholder involvement in water policy is also critical from an

² The Ecology of Games framework purports that a collaborative institution may increase transaction costs because it represents a new 'game' overlaid on existing policy 'games' (Lubell et al., 2010).

³ At a general level, institutions can be defined as 'the rules of the game in a society or, more formally, the humanly devised constraints that shape human interaction' (North, 1995, p. 3). Institutions can be hierarchical, nested or embedded with, and complementary to, other institutions whilst featuring path dependence, stability and durability (Saleth and Dinar, 2004). Institutional arrangements are rule sets that direct or constrain actions at multiple, nested levels (Ostrom, 1986).

⁴ A socio-ecological system is said to be robust if it prevents the ecological system upon which it relies from moving into a domain which cannot support human population (Andries et al., 2004).

⁵ Australia has a three-tiered governance system: Federal, state and local governments. The system is characterised by a single national government, several state governments, depending on demographic and spatial factors, and various local governments (Dollery et al., 2006).

⁶ Catchment Management Authorities are regional natural resource management bodies established under state governments. They are responsible for coordinating a range of activities including integrated catchment management and sustainable land and water use within specified catchments.

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