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Goal specificity: A proxy measure for improvements in environmental outcomes in collaborative governance

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ABSTRACT

Collaborative governance critics continually call for evidence to support its prevalent use. As is often the case in environmental policy, environmental outcomes occur at a rate incompatible with political agendas. In addition, a multitude of possibly confounding variables makes it difficult to correlate collaborative governance processes with environmental outcomes. The findings of this study offer empirical evidence that collaborative processes have a measurable, beneficial effect on environmental outcomes. Through the use of a unique paired-waterbody design, our dataset reduced the potential for confounding variables to impact our environmental outcome measurements. The results of a path analysis indicate that the output of setting specific pollutant reduction goals is significantly related to watershed partnerships' level of attainment of their environmental improvement goals. The action of setting specific goals (e.g. percentage of load reductions in pollutant levels) is fostered by sustained participation from partnership members throughout the lifecycle of the collaborative. In addition, this study demonstrates the utility of logic modeling for environmental planning and management, and suggests that the process of setting specific pollutant reduction goals is a useful proxy measure for reporting progress towards improvements in environmental outcomes when long-term environmental data are not available.

1. Introduction

Proponents of collaborative management approaches have argued that collaborative governance can lead to effective solutions through increasing partnerships' capacity to achieve environmental outcomes. However, many of the criticisms of collaborative governance revolve around the lack of clear indicators of improved environmental conditions resulting from collaboration (Kenney, 2001; Koontz and Thomas, 2006). While existing research has measured and compared collaborative outputs, to date, few studies have empirically linked collaborative processes to end outcomes. This gap in the collaborative governance literature exists for three primary reasons. First, in order to determine whether environmental improvements occurred, environmental data must be collected over relatively long time periods (Koontz and Thomas, 2006; Sabatier et al., 2005). For example, the lag time between implemented best management practices (BMPs) to control pollution and measurable improvements in environmental outcomes often occurs at rates incompatible with political agendas. As a result, policy makers frequently have to make decisions without complete data. Second, collecting these data is often cost prohibitive. Monitoring environmental conditions is expensive and requires technical expertise, and is often the first line item cut in environmental management budgets. The lack of monitoring resources exacerbates the issue of incomplete data sets. Third, it is difficult to empirically control for confounding influences on environmental conditions, which limits analysts' ability to attribute environmental changes to particular processes (Born and Genskow, 2006). These confounding influences may affect environmental conditions and yet have little to do with the efficacy of collaborative governance. For example, changes in land use within the watershed may result in water quality improvements in the absence of collaborative governance.

At present, literature on collaborative governance is mostly explanatory, not evaluative, explaining the antecedents to collaborative governance partnerships, but not linking processes to outcomes directly. Research has examined the role institutions play (Koontz et al., 2004; Ostrom, 1990; Leach et al., 2002), the importance of leadership (Thomas, 2003; Ansell and Gash, 2007;

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Emerson et al., 2012), financial and technical resources (Koontz et al., 2004; Bidwell and Ryan, 2006), member diversity (Koontz and Johnson, 2004; Weber, 2003), stakeholder perceptions (Sabatier et al., 2005), mutual trust (Leach and Sabatier, 2005; Ansell and Gash, 2007; Emerson et al., 2012), scientific understanding (Thomas, 2003), and collaborative outputs (e.g. plans) (Mandarano, 2008; Wilkinson, 2007); however, little research has empirically linked collaborative outputs with environmental outcomes. Outcome literature begins to unpack this "black box" with regards to governance outcomes (Rogers and Weber, 2010) and social outcomes (Leach and Sabatier, 2005; Lubell, 2002), but not to environmental outcomes.

This study investigates whether collaborative processes have a beneficial effect on environmental outcomes. To do so, we use a logic model to examine the degree to which collaborative partnerships attain their environmental improvement goals. In addition, this study addresses the constraints facing public managers of natural resources when trying to determine environmental outcomes in the absence of complete data. The findings of this study contribute to outcome and collaboration literature through the evaluation of relationships between collaborative governance processes, outputs and outcomes.

2. Collaborative governance logic model

This study investigates the linkages between planning and implementation processes and the corresponding outputs for improving environmental conditions utilizing a collaborative governance logic model. Collaborative outputs and outcomes are affected by the inputs and processes executed by the participants in the collaborative governance effort. Therefore assessing the relationship between collaborative governance processes and outputs and their capacity to achieve environmental improvement goals will better our understanding of the variables affecting collaborative governance effectiveness. The use of a logic model allows us to assess the causal linkages between the steps in collaborative processes and outcomes. Logic modeling is widely used in the business community and gaining traction in the natural conservation community of scholars studying "adaptive management."

Thomas and Koontz (2011) suggest evaluating the performance of collaborative governance by using a logic model that carefully distinguishes collaborative processes from the outputs and outcomes of those processes (Fig. 1). Modeling the logical structure of collaborative governance partnerships provides the methodological benefit of specifying, a priori, what to measure. This emphasizes the development of valid measures of specific outputs and outcomes, rather than collecting whatever data are available (Thomas and Koontz, 2011). The attention to causality allows for the determination of linkages between program outputs and desired policy outcomes as well as identification of potential shortcomings of a management strategy when conducted prior to implementation, thereby linking evaluation with accountability (Imperial, 2005). The program assessed in this study, the United States Environmental Protection Agency's National Nonpoint Source Monitoring Program (USEPA NNPSMP), defined the goals and output measures prior to implementation of practices designed to meet end outcomes of improving environmental outcomes, providing a clear baseline to assess linkages between the steps in the logic model. The longitudinal and structured nature of EPA's NNPSMP provided a dataset with which to assess the utility of logic modeling as a policy analysis tool for environmental planning and management.

Fig. 1 depicts Thomas and Koontz (2011) logic model, adapted for evaluating collaborative governance in the USEPA NNPSMP. The testing of multiple linkages between inputs, processes, and intermediate outputs and outcomes, reduces confounding influences by directly linking individual steps (i.e. inputs to processes, processes to outputs, outputs, to outcomes).

The first component of the collaborative governance model is inputs (box 1 in Fig. 1). Inputs are defined as the resources used in collaborative governance and include the elements or characteristics of the collaborative partnership (e.g., stakeholder involvement, financial and technical resources).

The second component of the collaborative governance model is processes (box 2 in Fig. 1). Collaborative governance processes are the activities performed by the collaborative partnership, including local watershed knowledge provided by partners, communication amongst partners, sustained participation by partners, information sharing inside and outside the collaborative, and collective documentation. Several characteristics of box 2 have been found to be important for collaborative processes, and our data analysis described below suggests three key items: sustained participation, information sharing, and collective documentation.

2.1. Sustained participation

Collaborative governance requires committed time from salient stakeholders who are affected by or express concern about the issue (Ansell and Gash, 2007). Such participation is viewed as a key component to collaborative governance and failure to represent salient stakeholders has the potential to undermine the legitimacy of the collaborative governance (Ansell and Gash, 2007). Handbooks and guidelines for collaborative decision making frequently emphasize the value of citizen involvement (Koehler and Koontz, 2008). Participation by local citizens is important as they provide essential information about that area's natural and sociopolitical systems (e.g., history of development and land use changes within a watershed) and often times possess a profound concern over the impact of nonpoint sources of pollution on their waters (Sabatier et al., 2005; Koehler and Koontz, 2008). Sustained involvement throughout the lifecycle of the collaborative governance is a critical aspect of participation.

2.2. Information sharing

With the exchange of information comes a shared knowledge base necessary to resolve complex, environmental problems (Imperial, 2005). Organizational structures (such as scientific panels and citizen-based committees) produce and communicate scientific and technical information about the issues facing the collaborative governance. These structures promote continued information sharing and help identify alternative approaches for solving their problems (Gerlak and Heikkila, 2007). Scientific panels may consist of in-house participants of the partnership or outside, independent partners such as a university or nongovernmental organization.

2.3. Collective documentation

Information exchange is not possible without communication, however the knowledge acquired through direct communication may only be retained for a limited time before it is forgotten. Therefore written, formal documentation is viewed as another important measure of information sharing and organizational learning (Mishra and Mishra, 2009). Communication involves the production of documents that convey information gathered and assessed by the watershed partnership, facilitating a shared understanding (Ansell and Gash, 2007). Transmission of knowledge through written, formal documentation provides participants with an opportunity for consultation and dialogue (Asthana et al., 2002),