Research article

Engagement takes a (fishing) village to manage a resource: Principles and practice of effective stakeholder engagement

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1. Introduction

As human communities face increasingly complex and pressing environmental challenges, engaging those communities in resource management decision-making to sustain socio-ecological systems is an imperative. Research and practice have demonstrated the value of stakeholder engagement for improving the social, economic, political, and cultural outcomes of decision-making when stakeholder voices are being heard (Mikalsen and Jentoft, 2001; Layzer, 2008; Reed, 2008; Wendt and Starr, 2009; Sayce et al., 2013). Public involvement allows resource managers to explore issues, concerns, and management measures from various viewpoints, and gather a wide range of perspectives and information. In theory (and in many cases, practice), by incorporating a greater quantity and diversity of knowledge and perspectives, managers are driven to more equitable, socially-relevant, and ecologically-sound decisions. This study explores the state of the practice around stakeholder engagement, where practitioners are stumbling, and lessons learned that may be applicable across management contexts.

Employing the key principles of stakeholder engagement, such as using a transparent process that engages stakeholders early and often, has been shown to be valuable in improving process or project outcomes in many contexts (Pomeroy and Douvere, 2008; Reed et al., 2009; Gopnik et al., 2012). Effective environmental decision-making thus requires government agencies to transparently and inclusively engage those likely to be affected by decision outcomes. To inform decisions, engagement must continually capture relevant knowledge that reflects the needs of human communities who often have changing values (Reed, 2008). Such engagement is required to account for complex human-natural feedbacks, assess resource sustainability, anticipate unintended consequences of decisions, and gain legitimacy to ensure effective governance (Beratan and Karl, 2012). Stakeholder engagement, however, is a messy process—it is often characterized by conflict, disagreement, and diverging viewpoints (McCool and Guthrie, 2001). This is in part because science alone cannot determine good policy, as many of the environmental and social challenges we face require solutions that balance societal values and norms (Tippett et al., 2007). However, despite the social and ecological benefits, limited practical guidance exists on precisely *how* to implement effective stakeholder engagement within marine resource management. This study investigates what processes are being deployed to improve decision-making for 29 resource managers and distills clear guidelines for practitioners across a variety of natural resource management sectors.

1.1. What is stakeholder engagement?

Stakeholders are any group or individual that has a 'stake' in a decision-making process because they are somehow affected by or interested in an activity (Reed, 2008). Primary categories of stakeholders include (1) those who have an influence on the activity (e.g., other regulators, the press), (2) those who have (or are perceived to have) an impact on the resource (e.g., resource users, communities adjacent to resources), (3) those who have a common interest in the activity (e.g., other indirect beneficiaries of the resource, such as consumers), and (4) the broader public.

A growing body of literature on stakeholder engagement strategies (e.g., Rowe and Frewer, 2000; Richards et al., 2004), principles of engagement (e.g., Rowe and Frewer, 2000; Udall, 2011), and

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the theoretical underpinnings of engagement (e.g., reviewed in Reed, 2008) is emerging from the academic research community. Public agencies that improve public participation processes are demonstrated to be more informed, trusted, and able to incorporate diverse interests, thus improving their decision-making capacity (NRC, 2008). One study evaluated 239 case studies of stakeholder participation in environmental decision-making and found that, in most cases, their involvement enhanced the quality of decisions by adding and improving access to information, ideas, and analyses (Beierle, 2002). Finally, engagement leads to an increased likelihood that stakeholders will comply with and support management decisions if they have opportunities to inform the process (Hanna et al., 1995).

When implemented poorly, stakeholder engagement can exacerbate contentious resource management issues and degrade public trust in government (Burton et al., 2004). Often an agency's greater interest in, attention to, and funding for stakeholder engagement follows negative backlash from stakeholders when decisions were made without adequate engagement. Since the rise of public participation within natural resource management in the 1990s, engagement failures have led to a "post-participation disillusionment" due to the lack of metrics and evaluation demonstrating positive decision-making outcomes (Rowe and Frewer, 2000; Beierle, 2002; Reed, 2008). In recent decades, research has documented a growing consensus around the value of stakeholder engagement for achieving target management outcomes and the critical need to integrate it across natural resource management sectors (e.g., Beierle, 2002; Pomeroy and Douvere, 2008; Reed, 2008), highlighting its ability to add to the legitimacy and quality of government decisions (Rowe and Frewer, 2000; NRC, 2008).

Stakeholder engagement is conducted in most public-facing sectors in the United States and internationally under existing mandates (e.g., the Administrative Procedure Act; the National Environmental Policy Act, United Nations Economic Commission for Europe 1998) (Tippett et al., 2007). Resource managers vary significantly in their stakeholder engagement practices based on whether they adhere to the minimum legal requirements of public consultation or go further to engage their constituents. This also depends on the type of management decision being implemented. For example, public participation in federal and state agency rule-making procedures often consists of both public hearings—open meetings that deliver information and solicit public, oral testimony—and written comment—submitted online or mailed in (e.g., requirements dictated by the federal Administrative Procedure Act (Administrative Procedure Act, 5 U.S.C. §553(b)-(d)). Agencies are also often required to respond to each public comment (e.g., National Environmental Policy Act regulations require that "[a]n agency preparing a final environmental impact statement shall assess and consider comments both individually and collectively, and shall respond …" 40 C.F.R. §1503.4). We refer to these approaches as 'traditional' forms of stakeholder engagement. It is widely acknowledged, that the minimum public consultation methods currently required by law are insufficient (Innes and Booher, 2004). Under these status quo requirements, stakeholders often do not feel heard, decisions are poorly informed, and many voices are excluded (Innes and Booher, 2004).

Despite the growing body of research on stakeholder engagement, there is still a paucity of research on the experiences, perceptions, and stated needs of practitioners themselves. This study was motivated, in part, by a state agency requesting greater case study evidence of successes and failures in the field.

1.2. Challenges in stakeholder engagement

Engaging the public in resource decision-making is a wicked problem. Wicked problems are extremely difficult challenges to solve and are often characterized by a lack of information, overlapping and difficult-to-map drivers, and conflicting value systems among the actors involved (Rittel and Webber, 1973; Buchanan, 1992). Stakeholder outreach in resource management is particularly difficult due to a lack of government capacity, the challenge of engaging highly diverse or under-represented populations, a mismatch between the jurisdictional boundaries of governance and the geographic range of the resource, competition for a common pool of resources (e.g., fisheries, air), and the often differing motivations of managers and the public to engage—all challenges relevant, but not unique, to fisheries.

Resource managers and stakeholders often operate from divergent or conflicting socio-cultural contexts (Poncelet, 2004; Hicks et al., 2009, 2013). Managers, for their part, usually require efficient and orderly decision-making characterized by a high degree of certainty and easily implementable actions. On the other hand, it is difficult for many stakeholders to engage in bureaucratic processes structured to restrict their resource use. As fisheries are public, common pool resources, communities have a right to fish that creates a behavioral dilemma—participants do not want their perceived rights to be regulated (Schlager and Ostom, 1992). The large geographic range of many fish stocks also make it more difficult to reach fishery stakeholders. One study in the Great Barrier Reef, Australia, found that only 28% of fishermen participated in public consultation programs and those that did were not representative of the broader recreational fishing community in demographics such as age and centrality of fishing to their lifestyle (Sutton, 2006). This highlights the need for more inclusive tactics, as losing touch with a silent majority may lead managers to exclude critical stakeholder feedback on management alternatives. Although both managers and fishing communities want simple, efficient processes, these deeply rooted disparities in their motivations can work to impede meaningful communications. These differences are often exacerbated within a governance system that is structured to limit interpersonal interaction and influenced by global economic forces. This represents a classic wicked problem: the drivers are numerous, interrelated, and often uncontrollable, and the actors are not able or motivated to shift the status quo.

Managers must balance the attitudes, preferences, and behaviors of stakeholders to increase the compliance and efficiency of their management decisions (Gelcich et al., 2008; Ban et al., 2013) and incorporate the best available science on sustainable resource use. A lack of information about easy methods for identifying sustainable resource allocations hinders effective and inclusive stakeholder engagement. Conflicting goals and disagreement around how increasing scientific uncertainty should be considered in the context of differing public values demands a more nuanced consideration of how engagement in resource decision-making can and should be tackled (McCool and Guthrie, 2001; Beratan and Karl, 2012). Further, management processes often do not capture the spectrum or majority opinion on proposed management decisions because managers often only hear, incorporate, or respond to the loudest and closest voices. Thus, even engagement done with the best of intentions can be done poorly and lead to negative outcomes (Mansuri and Rao, 2004).

In viewing stakeholder engagement in resource decision-making as a wicked problem, it becomes clear there are no silver bullet solutions. Wicked problems require interventions that consider the system, its complex drivers, and the underlying motivations of those with agency to change the status quo. Thus, a critical leverage point addressing the root causes of disagreement and distrust among key actors is to better align the process of stakeholder engagement with the practice (Reed, 2008; Gardner et al., 2009; Udall, 2011). For instance, promoting the principles