



Review

Assessing the evidence for stakeholder engagement in biodiversity conservation



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ABSTRACT

Engaging local stakeholders is a central feature of many biodiversity conservation and natural resource management projects globally. Current literature on engagement predominantly focuses on individual case studies or specific geographical contexts, making general conclusions regarding the effect of these efforts on conservation outcomes difficult. We reviewed evidence from the peer-reviewed and grey literatures related to the role of stakeholder engagement (both externally-driven and self-organized engagement) in biodiversity conservation at the local scale using both quantitative and qualitative approaches. We critically appraised and extracted data using mixed methods for case studies ($n = 82$) and meta-analyses ($n = 31$) published from 2011 to 2015. We conducted an inductive thematic analysis on background literature references published from 2000 to 2016 ($n = 283$). The quantitative analysis assessed multiple variables, and yielded no significant results, but suggested a possible relationship between success in producing attitudinal change towards conservation and four engagement factors. Our qualitative analysis identified six dimensions of engagement processes that are critical for successful outcomes when a project is externally-driven, and suggests that understanding of governance and social-cultural context plays an important role in all types of stakeholder engagement efforts. Finally, we reflect on the effectiveness of relying primarily on evidence available from published literature to understand links between conservation and stakeholder engagement, in particular with regard to self-organized engagement.

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1. Introduction

Despite at least four decades of calls for increased local stakeholder participation in biodiversity conservation, evidence on the efficacy of these efforts is only beginning to emerge (Reed, 2008, Brooks et al., 2013). Work to date has focused on how the process of engagement, such as group dynamics, communication styles, or transparency, is important to stakeholder engagement (Renn et al., 1995, Rowe and Frewer, 2000, Beierle, 2002). Less attention has focused on how stakeholder engagement impacts outcomes, in part because this can be difficult to evaluate, whether in terms of shifts in individual attitudes and behaviors or ecological effects.

Given continued and even increasing reliance on participatory approaches, the nature of the linkages between methods of engagement and conservation outcomes is a critical area in need of evidence (Danielsen et al., 2009). In order to help address this gap, we compiled, reviewed, and analyzed documented evidence from externally-driven and self-organized efforts around the world over the past 16 years to engage stakeholders at the local scale regarding biodiversity conservation goals. Our objective was to illuminate factors affecting the efficacy of stakeholder engagement for biodiversity conservation goals in order to inform both future research and practice.

1.1. Stakeholder engagement across disciplines

The literature on participation and local stakeholder engagement in decision-making processes spans fields such as business management, international development, community psychology, and natural resources management (Cooke and Kothari, 2001, Berkes, 2004, Hickey and Mohan, 2004, Miles, 2015). Here, we define stakeholders as the people and organizations who affect or are affected by a decision; stakeholders can be directly or indirectly involved in an endeavor (Freeman, 1984, Annan, 2008). In our analysis we distinguish between externally-driven engagement efforts and those that are self-organized. Externally-driven initiatives are those led by individuals or institutional stakeholders (such as regional or national government, national or international non-governmental organizations or researchers) who are organizing local stakeholders. Local stakeholders are individuals or groups (generally place-based) who directly rely on or impact the specific targets of resource management or conservation action (e.g. indigenous landholders, farmers, fishers, local non-governmental organizations, or local researchers). Self-organized efforts are led by local groups that have active control over resources and their management, such as indigenous leadership councils and citizen action groups. Self-organized indigenous peoples and local communities are important leaders in biodiversity conservation efforts, overseeing a significant proportion of the world's biodiversity and carbon stocks (Kothari, 2013, Walker et al., 2014, WHRC and EDF, 2015). Therefore it is critical to understand how and why indigenous peoples and local communities engage with biodiversity conservation efforts (Ruiz-Mallén et al., 2015).

In the environmental and development sectors, the main arguments for the importance of local stakeholder engagement center on democratic and equity aims, such as: 1) reducing marginalization of those underrepresented in decision-making, 2) increasing stakeholder trust in and ability to act on decisions, 3) accounting for diversity of values across stakeholders, and 4) promoting social learning where

stakeholders learn from each other and build new knowledge while developing new relationships (Reed, 2008, Fritsch and Newig, 2012, Young et al., 2013a, Birnbaum et al., 2015). Pragmatic arguments for stakeholder engagement include 1) the possibility that increased diversity in decision-making bodies may lead to higher quality decisions better adapted to the local social-cultural and environmental contexts, 2) development of common ground, trust, and reduction of conflict between stakeholders, 3) stakeholder ownership may increase support and successful implementation, and 4) the potential for reduced implementation costs (Richards et al., 2004, National Audubon Society, 2011). Yet there is a gap in the literature regarding evidence for which engagement approaches are most effective and under what circumstances (Webler, 1999, Beierle, 2002, Blackstock et al., 2012).

“Evidence-based” conservation, which emphasizes the importance of unbiased data gathered through systematic review protocols, is increasingly important in conservation decision-making (Pullin and Knight, 2001, Sutherland et al., 2004). Evidence-based analyses can help to shift conservation practice from often-unqualified assumptions to systematic collection and appraisal of a range of evidence (Haddaway and Pullin, 2013). These approaches in conservation are derived from the more established evidence-based medicine movement, where systematic reviews were developed as a rigorous method for aggregating findings from quantitative randomized control trial studies. In the field of medicine, evidence-based approaches have evolved to recognize the importance of non-quantitative evidence such as clinical expertise and patient preferences (Satterfield et al., 2009). Robust mixed methods and qualitative synthesis approaches allow for non-quantified evidence to inform policy and practice; synthesizing different types of evidence is particularly relevant when addressing complex questions (Dixon-Woods et al., 2005, Noyes and Popay, 2007).

In the case of conservation, since natural systems are connected to so many social-cultural domains, it is important for stakeholder engagement efforts to consider the social dimensions of conservation projects (Billgren and Holmén, 2008, Colvin et al., 2016). Given the integrated nature of conservation practice, in this paper we used a mixed methods approach to assess evidence from the published literature over the past 16 years regarding the contribution of local stakeholder engagement to outcomes in biodiversity conservation initiatives. We developed a search and review protocol to identify relevant, high-quality papers from the primary and grey literature. For a subset of these papers, we extracted information on multiple initiative variables and assessed the success of stakeholder engagement across four outcome domains (success in producing behavioral change, in producing attitudinal change, in conserving biodiversity, and in economic outcomes) drawn from the literature on participatory conservation (Reed, 2008, Brooks et al., 2013, Roe et al., 2015). Our choice of multiple variables reflects the design of many stakeholder engagement biodiversity conservation projects, in that they often use varying methods to achieve multiple goals (Baylis et al., 2016). The selected outcome domains are those commonly focused on by conservation organizations when seeking to assess the impact of a given participatory project (USAID, 2015).

2. Methods and analysis

This review followed an protocol adapted from the “Guidelines for Systematic Reviews in Environmental Management” developed by the

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