

Engaging multiple stakeholders to reconcile climate, conservation and development objectives in tropical landscapes

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**This is an edited version of an article previously published in the journal Biological Conservation (Reed et al. 2019)*

Introduction

This chapter can be considered an evidence-based “toolkit” for engaging multiple stakeholders. We hope it is of practical use to researchers and practitioners involved in landscape decision-making – and that those involved in complex landscape management continue to record and share their experiences to improve the evidence of what works.

Despite the appeal and increasing prominence of integrated landscape approaches, empirical evidence is limited for the performance or process related to the operationalization and outcomes in practice (Estrada-Carmona et al. 2014; Reed et al. 2017; Sayer et al. 2016). Further, very few assessments have explored the specific challenges facing these initiatives.

We address this knowledge gap by combining our experiences from a comprehensive systematic review (Reed et al. 2016); consultation workshops (Cairns Australia May 2012; Lake Eacham, Australia, June 2015; Bogor, Indonesia, July 2018, amongst others); to practical experience in leading multi-scale social and ecological research networks in the Amazon (Gardner et al. 2013) and Mekong delta (Sunderland et al. 2012) amongst others; and the evolving literature on social-ecological systems and landscape approaches. The aim is to learn from the successes and failures of previous attempts at

integrating conservation and development, and to understand why the integration of multiple stakeholders remains problematic. We identify a number of constraints and opportunities facing attempts to engage multiple stakeholders in tropical landscapes that we have broadly categorized below.

4.1 Navigating complexity

Landscapes are often highly complex social-ecological systems; they hold poorly understood ecological interactions responding to both fast and slow drivers of change (Fischer et al. 2015), and the impacts of multiple – and often contradictory – socio-economic institutions (Carmenta and Vira 2018). Political, environmental, social and commercial interactions at the landscape scale further amplify system complexity and, therefore, the degree of difficulty for investigation, management and disentanglement (Demek 1978; Mollinga 2010). This complexity is exacerbated by the expanding spatial scales at which contemporary socio-economic interactions take place (Carrasco et al. 2017; Hull and Liu 2018; Liu et al. 2013).

One approach to managing complexity is framing it as a “wicked problem” (Balint et al. 2011; Defries and Nagendra 2017), which means a satisfactory conclusion is unattainable because any given “solution” will generate new challenges (Rittel and Webber 1973). This should not, however, discourage research that attempts to provide solutions that are “better” than previous solutions – although “better” is subjective and open to (mis) interpretation (Carmenta et al. 2017). That is, what is good for one set of stakeholders may not be good for others.

Meanwhile, centralized management is increasingly considered a poor fit for complex systems where issues need to be addressed simultaneously at various scales (Berkes 2004; Hodge 2007; Kremen et al. 2000) and hybrid governance arrangements are increasingly common (Kozar et al. 2014; Viana et al. 2016). Therefore, researchers and practitioners must not simply ask at which scale should land-use decision-making, policies and management structures be conceived and implemented, but they must also consider how institutions, sectors and policies interact and integrate, and determine the processes that will enhance recognition, understanding and adequate amelioration of conflicted aspirations and preferences. This is particularly relevant in landscapes of rapid change and transformation, such as the agricultural forest frontiers of the global South.

A systemic approach to dealing with complexity suggests that navigating, not solely managing or planning for complexity, is preferable (Armitage et al. 2009; Sayer et al. 2016). The inherent complexity of landscapes makes formal management and planning problematic; therefore, an element of “muddling through” will always be necessary (Chazdon et al. 2017; Lindblom 1959; Sayer et al. 2008). Still, developing institutions that can accommodate diverse stakeholders with conflicting interests is challenging and hints at what Brown (2003) termed a case of institutional misfit. Greater fluidity of actors and institutional interplay across sectors and scales may require changes to both top-down and bottom-up governance structures to minimize scale conflicts (Foli et al. 2018; Olsson et al. 2006; Young 2002).

Shifting to alternative governance arrangements is far from straightforward: entrenched power structures, institutional stickiness and socio-political inertia are hard to break down (Brockhaus and Angelsen 2012). Governance transformations often require political will and a political window of opportunity (Folke et al. 2005) that may be opened by a pressing environmental concern (problem-driven) or an administration that seeks a problem to justify change (politically-driven) (Kingdon and Thurber 1984). Olsson et al. (2006) suggest that “key leaders and shadow networks can prepare a system for change by exploring alternative system configurations and developing strategies for choosing from among possible futures”. Effective network building that integrates actors from across disciplines and sectors can improve our understanding of system-wide dynamics and enhance our “ability to exploit economies of scale in shared resources and technical expertise” (Barlow et al. 2011, p.4). Yet effectively bridging disciplinary divides and linking science with action has, at best, been only partially successful (Brown 2003; Clark et al. 2011). One strategy is to build networks with a shared thematic or geographic focus (Gardner et al. 2013). However, overcoming entrenched differences requires careful, dedicated facilitation and long-term engagement, and may only be possible within a favorable political economy.

A potentially powerful approach to facilitate dialogue, enhance links between disciplines and navigate the ‘space’ between science and policy (c.f. Toomey et al. 2016) involves adding boundary, or bridging, organizations (Cash et al. 2006; Cash and Moser 2000; Clark et al. 2011; Guston 2001). Boundary organizations fulfill the complex task of considering the objectives of, and being accountable to, actors from across social-ecological system boundaries, while aiming for impartiality (Guston 2001) and co-production of knowledge and social order (Jasonoff 1996a, 1996b). Boundary organizations can link global research and environmental objectives with national commitments and local socio-economic and cultural realities. They support dialogue between experts and decision-makers by facilitating open communication, mutual understanding of problems and proposed solutions, and mediating conflicts (Cash et al. 2003). Their value, therefore, depends on the production of salient, credible and legitimate ‘boundary objects’ (i.e. maps, reports, protocols) that are sufficiently adaptable (to different viewpoints) and robust (to maintain identity) to satisfy the intentions of multiple parties (Cash et al. 2003; Star and Griesemer 1989). Recent evidence has demonstrated the incorporation of boundary organizations across a range of countries and contexts (Clark et al. 2011; Mollinga 2010; Pohl et al. 2010; Polsky and Cash 2005; Reyers et al. 2015). However, ascertaining effectiveness of such incorporation remains challenging (Clark et al. 2011) and the inclusion of boundary organizations will not automatically lead to positive change if they lack credibility or legitimacy, or are embedded in unfavorable political economy contexts (Graham and Mitchell 2016).

4.2 Overcoming siloed thinking

Many efforts to improve conservation and development outcomes highlight the critical importance of meaningful and long-term local stakeholder engagement (Bürgi et al. 2017; Sayer et al. 2013). For example, recent reviews of landscape approaches found

community engagement in decision-making, and inclusion of people-based strategies, to be the most significant contributing factor to successful outcomes (Reed et al. 2017, Carmenta et al. 2020). Similarly, an assessment of a long-term landscape approach in the Sangha Trinational landscape in the Congo Basin found that participants considered multi-stakeholder processes vital to enhance the capacity to share and comprehend complex challenges (Sayer et al. 2016 p.137). These examples are further supported by assertions from the literature, which stress the value of community engagement and empowerment to the long-term sustainability of joint conservation and development interventions (Ostrom 1990; Persha et al. 2011).

Despite conceptual recognition and growing evidence of the importance of bridging sectoral and disciplinary divides in decision-making, practical progress remains slow (Agrawal and Gibson, 1999; Lund 2015; Ribot et al. 2010; Carmenta and Vira 2018) with scant reporting on the means of implementation or methods for evaluation (Stenseke 2009; Bixler et al. 2016). The following constraints complicate integration and the practical implementation of integrated approaches.

First, attempts to balance the objectives of multiple stakeholders are often hindered by “the political process of decision-making, differing values and norms, and power imbalances” (Defries and Nagendra 2017). A lack of incentives for real change can result in “elite capture” or the further marginalization of some of the most vulnerable people (Viana et al. 2016). Participation can also fail due to the reluctance of local stakeholders themselves to engage in what may be perceived as a divisive, threatening, or burdensome intervention (Cheng et al. 2006; Green et al. 2018). Second, practical advances have failed as stakeholder engagement is often only a box-ticking exercise to satisfy project or donor demands (Enengel et al. 2011; German et al. 2007; Castella et al. 2014). Finally, multi-stakeholder engagement processes have high transaction costs (Enengel et al. 2011) also borne by local stakeholders. Thus, effective – and sustainable – engagement is likely to occur only if the long-term rewards are perceived as potentially outweighing initial short-term gains, or costs associated with investments/compliance.

Overcoming these issues means recognizing that multiple stakeholder engagement is much more than simply supporting or empowering local communities. Increasingly, the concept of knowledge co-production that integrates communities of knowledge with communities of action is seen to have significant potential for confronting the kinds of “wicked problems” presented by social-ecological systems (Cash et al. 2003). Engagement platforms must confront issues of inequity, avoid elite capture and encourage democratic forms of co-governance. Context is also important; imbalances of power are often seen as detrimental to multi-stakeholder dialogue, yet there may be instances when asymmetrical power relationships could help promote the agendas of marginalized groups (Hendriks 2009; Moeliono et al. 2014). However, ethically, and to maintain accordance with UN declarations (e.g. Declaration on Human Rights and Declaration on the Rights of Indigenous People) attempts should be made to dissolve power asymmetries such that power is evenly distributed with decisions negotiated fairly in order to encourage co-productive governance arrangements.

Although working effectively across disciplinary and sectoral divides is fraught with difficulty (Sandbrook et al. 2013), previous experiences provide valuable lessons. One key insight is that interdisciplinarity can be enhanced via multiple pathways. For example, multi-stakeholder fora can be incentivized through triple loop learning (i.e. not only questioning if we are doing things right but also understanding if we are doing things right, and how to know what is the right thing to do) (Biggs et al. 2011) and seeking consensus on problem definition objectives, and solutions (Blackstock 2007). Developing a robust theory of change in a participatory manner can be useful in this regard (Qiu et al. 2018; Sayer et al. 2016; see also Chapter 5). Generating a shared understanding amongst stakeholders of their respective requirements or objectives and the implications of actions can help to highlight potential areas of synergy and also enhance empathy and trust amongst participants. Diverse collectives could then develop, built on an acknowledgement of the interdependency of actions and the need to collectively work towards an agreed outcome (Steyaert and Jiggins 2007).

Previous attempts at working across disciplines have also shown the importance of ensuring public consultation venues are accessible to all stakeholders (or legitimate representatives) (Sessin-Dilascio et al. 2016); negotiations are held in a common language (Bennett and Dearden 2014); and strategies developed to enable equitable participation of all concerned stakeholders, including women and marginalized groups (Ling et al. 2009). There must be genuine potential for collective development of alternative pathways. Independent facilitation and support from external agencies – whether political, technical, or financial – can inspire more effective stakeholder engagement (Balint and Mashinya 2006; Sayer et al. 2016). Commitments must be long-term, as capacity building can be a lengthy process, demanding up to 20 years of external support.^{1,2} Nor does external support guarantee enhanced equity; in one study, internal capacity was shown to exist before externally induced programs disrupted equitable stakeholder engagement (Guillaume 2017). A robust baseline or pilot study to determine contextual nuance, social norms and behaviors can therefore be valuable. Encouragingly, some donors have recognized this and offer seed money for such initiatives.

Effective engagement processes that are adapted to specific contexts, structured in an accessible manner and cognizant of historic or potential conflict and power hierarchies should be encouraged. Furthermore, the dynamism of complex ecosystems and associated stakeholders means that system shocks and fluctuations will inevitably occur, increasing the susceptibility to uncertainty and risk over time (Cooke and Kothari 2001; Smith 2008). Engagement structures must be an iterative process of periodically informing, evaluating and updating knowledge and objectives to stimulate feedback (Carpenter and Gunderson 2001; Folke et al. 2005; Gunderson et al. 2001) with methods to assess both the satisfaction of participants (Enengel et al. 2011) and the effectiveness of governance platforms (Bixler et al. 2016; Hassenforder et al. 2016; Kusters et al. 2018).

1 <https://forestsnews.cifor.org/51411/a-promising-but-uncertain-future-for-tenure-rights-devolution?fnl=en>

2 Jennie Barron (IWMI/SLU) presentation: Feasibility of green water management and rainwater harvesting in drylands. Falkenmark Symposium – Achieving SDG in Africa: Scaling green-blue revolution. World Water Week 2017.

4.3 Incentivizing behavioral change at the local level

Effectively engaging stakeholders to integrate climate, conservation and development goals will be influenced by the application of appropriate incentive structures designed to reduce the overexploitation of natural resources (Fischer et al. 2012). Determining the “right” or “best” incentives in complex landscapes with multiple stakeholders requires consideration of many issues. Furthermore, transitions to sustainability demands interventions across scales and sectors, including off-site interventions (e.g. changing diet preferences, redistribution, reducing consumption of processed foods and waste in GDP-rich countries) (Martin et al. 2018; Tilman and Clark 2014).

Incentive effectiveness is highly dependent on the socio-economic, cultural and political context, and an adequate incentive in one landscape – or for one group – may be inappropriate or insufficient elsewhere (Luttrell et al. 2013; Newton et al. 2013). Incentive structures targeted at either the individual (e.g. direct cash payments) or community level (e.g. investment in health services or education) will generate variable responses depending on context (e.g. the impact on motivations for behavioral change) (Muradian et al. 2013). This raises questions about the equitable distribution and appropriateness of incentive structures (Dietz et al. 2003; Ostrom et al. 1999).

Incentives for pro-conservation behavior can take many forms, from providing financial compensation to clarifying property or access rights, to addressing issues of equity, health, infrastructure, or power asymmetries of class or gender (Carmenta et al. 2020). Again, context is important; for example, market-based incentives rely on market forces to incentivize behavioral change and may therefore be biased toward middle-income actors with good market access.

One approach to incentives involves providing alternative livelihood options that reduce threats to the natural resource base (Roe et al. 2015); for example, encouraging seaweed farming as an alternative to artisanal fishing (Hill et al. 2011). However, the effectiveness in delivering positive outcomes for conservation or ecosystem services remains poorly understood, largely because the impact of such projects is rarely evaluated (Ferraro and Pattanayak 2006; Sainsbury et al. 2015). Indeed, a recent review of alternative livelihood projects found that less than 20 percent of studies sufficiently analyzed or evaluated project impacts, while fewer than 10 percent resulted in positive conservation outcomes (Roe et al. 2015). A similar lack of evidence of effectiveness is found when examining the impact of alternative livelihood projects on socio-economic outcomes in Ghana (Hilson and Banchirigah 2009) and Africa more broadly (Wicander and Coad 2015). As with compensatory incentives, alternative livelihood strategies must be carefully contextualized. For example, livelihood options for a bushmeat hunter (Chaves et al. 2017), may involve more than simply a financial or environmental consideration as a hunter may command a certain social respect within the community that he is reluctant to relinquish (John Fa, personal communication). Nevertheless, when applied effectively, alternative livelihood programs can empower local communities, enhance local agency and reduce threats to local biodiversity (Lotter and Clark 2014; Roe 2015).

4.3.1 Perverse incentives

Research has illustrated the perils of perverse incentives – that is, well-intended pro-conservation incentives that have the paradoxical effect of accelerating natural resource depletion, or crowding out intrinsic motivations (Ferraro and Kramer 1995; Langholz 1999; Wunder 2001). Perverse incentives may occur when the opportunity costs of ecosystem conservation are underappreciated and the financial returns for the end users from ecosystem conversion are greater (or perceived as greater) than those generated from conservation. Rudimentary cost-benefit analysis may not account for the broader implications of conserving, or converting. The challenge is to develop a more nuanced understanding of the complex interactions between people, nature and institutions and then attempt to identify which incentive structure will likely deliver optimal outcomes for the highest number of stakeholders, to achieve more winners and fewer losers (Sayer et al. 2014).

4.3.2 Modeling approaches

One strategy to facilitate forecasting is via simulation models, which have long been a feature of joint conservation and development discourse (Holling and Chambers 1973; Sayer and Campbell 2004; Walters 1986; Wu and Hobbs 2002). Rather than attempting to predict the future, their value is in generating potential outcomes that enable a better understanding of social-ecological system function. Participatory modeling can make explicit the assumptions and preferences of a diversity of participants, thereby enabling more transparent decision-making processes (Holling and Chambers 1973; Sayer et al. 2016; Wu and Hobbs 2002). Importantly, it can support better understanding of the bio-physical and socio-economic processes within the landscape, and how these interact (Musacchio 2009; O'Farrell and Anderson 2010b). Coupled with participatory historical trend analysis – consulting inhabitants to collect historical landscape information – it can be particularly effective for identifying patterns of change. Understanding both ecological processes derived from landscape configuration and function, as well as structural hierarchies, social conflicts, and political agendas, can strengthen measures for safeguarding natural resources and enhance the efficacy of collaborative decision-making (Marlier et al. 2013).

However, many modeling approaches have shortfalls, with projections characterized by a high degree of uncertainty (Prestele et al. 2016), and seldom capturing real world complexity. Most models retain a large number of assumptions, the parameters are subject to modeler bias and – particularly for long-term projections – are limited to the known or anticipated variables of the time. For example, a model designed today to forecast future forest cover in Indonesia for the next 30 years would certainly include oil palm production as an independent variable – something that might not have been the case 30 years previously and would (as we now know) have represented a significant oversight.

Nevertheless, participatory modeling has been shown to be extremely effective in enhancing stakeholder discussion, helping to illustrate potential synergies or trade-offs and stimulating development of innovative solutions. For example, Castella et al. (2014) describe the use of a boundary object (in the form of a 3D model representing a Laotian

village landscape) to encourage local stakeholder participation in land-use planning. The model enabled those stakeholders lacking the capacity to adequately convey landscape features or interpret GIS maps to maintain an active role in scenario visualizing. Model outputs (as GIS maps) were then coupled with simple cost-benefit analyses (with locally determined parameters) so that community members could iteratively negotiate potential outcomes and ultimately, influence decision-making processes (Sayer et al. 2007).

4.4 Enhancing engagement to address complex challenges

Governance that seeks to reconcile climate, conservation and development agendas must first reconcile disconnects across scales, sectors, and disciplines such that the grand theories of international policy and academia more closely align with messier local realities (Barlow et al. 2018; Boedhihartono et al. 2018). We have identified important opportunities for future research and practice.

First, greater recognition of the need to navigate complex challenges, as opposed to applying rigid management and log-frame approaches, should be encouraged. Careful construction of multi-stakeholder dialogue fora enlisting the support of boundary organizations and independent facilitation that applies established principles (Brouwer et al. 2016) offers potential (Larsen et al. 2018).

Second, the sustainability of multi-stakeholder engagement will be enhanced through the development of inclusive and transparent theories of change that identify desired outcomes and measurable process indicators (Qiu et al. 2018 and see Chapter 5). Including local communities and policymakers in the design and subsequent implementation and monitoring can bring to light trade-offs and synergies early in the process and iteratively inform adaptive co-governance. Academia, donors and scientific journals increasingly recognize the value and potential impact of incorporating citizen science, indigenous knowledge and other non-traditional Western science approaches in social-ecological system research design and application (Ban et al. 2018; Mistry and Berardi 2016).

Third, greater effort is needed in evaluating the process and impact of multi-stakeholder engagement. This means rather than merely monitoring social and biophysical indicators, attention must be paid to the functioning and contribution of the governance platform itself (Bixler et al. 2016; Kusters et al. 2018).

Finally, incentives that reward pro-conservation behavior must be encouraged. Incentives are often fundamental to influencing perceptions, actions and outcomes and can therefore lead to positive and negative or perverse changes. Engaging stakeholders in forecasting exercises and role-playing games can position actors in unfamiliar roles and decision-making environments, simultaneously building knowledge, capacity and empathy.

While the challenges and opportunities identified here may have independent and collective value in terms of moving toward operationalizing landscape approaches and closing knowledge-practice gaps, obstacles to progress remain and new challenges will undoubtedly arise. Innovations in theory, developing new and further development of existing tools, and greater understanding of the precise functioning of landscape approaches must be encouraged. Crucially, the evidence base must continue to be developed with robust monitoring of the biophysical, social and governance processes within the landscape; this is vital to keep pace with unprecedented global environmental change, and ensure multiple stakeholder engagement remains effective.

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