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Research article

A problem of social fit? Assessing the role of bridging organizations in the recoupling of socio-ecological systems

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ABSTRACT

The decoupling of human-ecosystem relationships in underutilized forested or agricultural regions poses a threat to cultural and biological diversities. Some scholars have proposed transformative strategies involving local-led efforts to reconnect social and ecological systems with the support of bridging organizations (BOs). However, empirically-based understandings about how and under what conditions BOs can address context-specific social conditions to enable transformation work remain limited. Using the concept of social fit – how institutional arrangements address contextual social conditions to enhance governance effectiveness – this study examines the work of the Kyoto Model Forest Association (KMFA), a BO, in improving the relationship between forests and people in Kyoto, Japan. We employed a mixed method approach involving a questionnaire survey, document review, semi-structured interviews, and direct observations. Our findings showed that to improve human-ecosystem interdependence, the KMFA prioritized the provision of public education; invested in places and systems to reduce participation costs; built trust and reduced value mismatches; provided incentives and built management capacity; provided leadership to diverse local forestry groups; facilitated institutional integration of forest and non-forest organizations; and drew resources from diverse organizations. These roles broadened the participation of different actors with novel connections to local ecosystems, enhanced self-organizing capacities, and streamlined the roles of forest management institutions. To sustain these efforts, the KMFA needs to continuously adapt to meet the needs and perceptions of diverse and dynamic actors and to broaden participation. Our analysis provides evidence of the efficacy of BOs to recouple human-ecosystem relationships and improve governance outcomes in underutilized social-ecological systems.

1. Introduction

In some regions of the world, the underutilization of rural forested or farming landscapes, combined with changes in industrial structures and increased external dependence on agricultural and energy products, has led to a decoupling of human-ecosystem interactions and relationships (Fischer et al., 2012; Berge and McKean, 2015; Shimada, 2015; Takeuchi et al., 2016). Examples of systems undergoing such changes include *milpa* cropping systems in Mesoamerica (Robson and Berkes, 2011a), semi-natural grasslands in Europe (Hartel et al., 2016), and the *Satoyama*[1] landscapes of Japan (Takeuchi et al., 2016). Also, in Japan, evidence is widespread that reduced human activities in coastal areas are causing deteriorations in biocultural diversity and diverse ecosystem functions and services of *Satoumi*[2] (Yanagi, 2012). The decoupling of such relationships at the local level poses a threat to biocultural diversities that are built on the interdependencies between people and nature (Queiroz et al., 2014) and reduces the incentives, such as the benefits people derive from these systems, for sustainable use (Dorresteijn et al., 2015). Accompanied by a weakening of local social capacities (Robson and Berkes, 2011b; Fischer et al., 2012), the decoupling process brings to the fore issues of social fit, or how the institutions that govern landscape use and management reflect the underlying (and dynamic) social conditions (Olsson et al., 2007; Epstein et al., 2015). The concept of social fit draws attention to the need to match environmental institutions to their social context and the problems they are meant to address (DeCaro and Stokes, 2013). Thus, good social fit should enhance management effectiveness and improve the sustainability of social-ecological systems (SESs) (Treml et al., 2015).

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[1] *Satoyama* landscapes comprise a mosaic of different ecosystem types including secondary forests, agricultural lands, irrigation ponds and grasslands, along with human settlements which has been managed to produce bundles of ecosystem services (Takeuchi et al., 2016).

[2] *Satoumi* refers to coastal landscapes with high biological productivity and high biodiversity due to harmonized human activities (Yanagi, 2012).

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To enhance the sustainability of underutilized landscapes, some scholars have suggested alternative ways to frame and implement their management; namely, to move away from efforts that preserve or protect traditional landscape characteristics, to ones that seek to transform or revitalize resource use (see Fischer et al., 2012; Takeuchi et al., 2016). Compared to a preservation or protection strategy, a transformation strategy seeks to protect and conserve ecosystems by supporting local-led efforts to create novel, direct long-term links between social and ecological systems (Fischer et al., 2012; Takeuchi et al., 2016). In Japan, such thinking is akin to broader *Satoyama* and *Satoumi* management strategies involving the creation of new forms of relationships between people and ecosystems as a culturally appropriate ways to support the management and promote sustainable ecosystem use (Yanagi, 2012). Where this has taken place, non-governmental organizations (NGOs) and local governments can play a vital supporting role. In Japan, Takeuchi et al. (2016) explain how NGOs and local governments have connected volunteers including urban residents and employees of private corporations to provide funding and volunteer labour in support of local woodland management.

Human-nature connections are complex involving multiple values such as material (e.g. resource extraction), experiential (e.g. activities), cognitive (e.g. attitudes, values), emotional (e.g. fear, joy) and philosophical (e.g. ontological frameworks) (Ives et al., 2017, 106). Often, transformation processes go beyond the local to include multi-level actors and institutions (Fischer et al., 2012; Takeuchi et al., 2016), thus requiring governance arrangements to integrate a plurality of interests, opinions, and values with regard to human-nature connections at different scales (Hobbs, 2009; Duraiappah et al., 2014). While some scholars have contributed to the theoretical and conceptual framings of such transformation strategies, our empirically-based understanding remains limited (Fischer et al., 2012; Takeuchi et al., 2016). For example, little is known about how, and under what conditions, NGOs can address context-specific social conditions in underutilized landscapes to enable recoupling of human-ecosystem relationships. In Japan, landscape services and benefits (e.g., experiential and cognitive services) enjoyed by outsiders can contrast markedly with the values and benefits (e.g., resource extraction including firewood and wildlife) perceived by local communities (Berge and McKean, 2015). The subsequent layering and interplay of human-nature connections not only makes governance arrangements more convoluted but increases the potential for mismatches to arise (Duraiappah et al., 2014). Thus, as multi-level institutions and actors increasingly shape decisions regarding the management and utilization of underutilized local landscapes, we need to understand how NGOs can work as bridging organizations (BOs) to facilitate and sustain these processes.

This paper examines how BOs might fit governance arrangements to the complex governance challenges and social conditions characteristic of underutilized landscapes. It then discusses the implications that alignment holds for improving human-ecosystem relationships in such settings. We draw on empirical research conducted in Japan, specifically focusing on the role of the Kyoto *Model Forest*[3] Association (KMFA), as a BO that is looking to improve forest-people relationships through the engagement of multi-level actors and institutions. By examining the work of the KMFA through the lens of social fit, we elucidate how engagement with multi-level actors can provide a pathway to recouple people-forest relationships and enhance management outcomes. Specifically, we examine how KMFA's governance arrangements align with the culture and values of groups and also satisfies the needs and expectations of actors at different levels of social organization.

[3] Generally, Model Forest (MF) organizations function as non-profit organizations that build voluntary and partnerships with diverse forestry related stakeholders including communities, government and private organizations to support sustainable forest management (IMFN, 2016). Thus, MFs function as BOs that link local actors with multi-actor and level organizations.

2. Linking understandings of social fit and bridging organizations

The concept of social fit has roots in theories of democratic decentralization and polycentric governance (DeCaro and Stokes, 2013; Meek, 2013; Epstein et al., 2015). Social fit suggests that the effectiveness of institutions depends on how well governance arrangements align with the interests, values, beliefs, and expectations of resource actors (Meek, 2013; Epstein et al., 2015). Social fit has been examined differently in diverse resource governance contexts. DeCaro and Stokes (2013) used institutional acceptance – how much individuals endorse a system of governance – as a measure of social fit. According to the authors, public participation that support a sense of procedural justice and self-determination among participants can improve social fit. In Alaska, Meek (2013) used the extent to which public policy reflects local constructions of legitimacy, such as congruence between informal and formal networks of whale harvesting, to measure social fit. Practices that promote social fit can enhance intrinsic motivation (DeCaro and Stokes, 2013) and provide legitimacy (Green et al., 2015) for the design and implementation of environmental decisions while reducing the likelihood of negative impacts (Berdej and Armitage, 2016). Negative outcomes could arise from poor consideration of community norms, perceptions, or livelihood needs.

Although the concept of fit, particularly social fit, offers an intuitive SES diagnostic appeal, how it can be achieved or diagnosed is not empirically clear (DeCaro and Stokes, 2013). DeCaro and Stokes (2013) for instance, explain that little is known about how best to match types of public engagement to specific SES problems. Indeed, because SESs are complex, and involve multiple actor interests and values, institutional arrangements rarely fit with respect to all stakeholder groups (DeCaro and Stokes, 2013; Epstein et al., 2015). To improve understanding of the concept of fit, Epstein et al. (2015) comprehensively mapped governance attributes that enhance social fit. Epstein et al. (2015) identified three governance attributes of social fit which are: alignment with the social context, the appropriateness of governance processes and instruments given stakeholder psychological needs and expectations, and alignment with existing levels of social organization (Table 1). To achieve social fit and improve the sustainability of a SES within a particular context, specific institutional arrangements are often required to facilitate this process. For example, researchers have shown that BOs perform several roles and responsibilities to address specific attributes of social fit (Green et al., 2015; Berdej and Armitage, 2016). Crona and Parker (2012) define BOs as “organizations that link diverse actors or groups through some form of strategic bridging process” (p. 32) to offer a flexible organizational concept for the governance of complex SESs (Sternlieb et al., 2013).

Some studies have shown that BOs are effective at designing governance arrangements when they align with specific social contexts and satisfy actor expectations (Hahn et al., 2006; Olsson et al., 2007; Berdej and Armitage, 2016). In Sweden, to reverse the degradation of flooded meadows due to decline in traditional activities, a BO helped to build social support and capacity among a diversity of stakeholders through education and awareness about the importance of the meadows; expanded access to the landscape for educational and recreational purposes; and built participants emotional drives such as sense of place and identity (Schultz et al., 2007). In Romania's Saxon region, characterized by extensive farmland abandonment, NGOs are helping community-based institutions re-establish a sense of land-based identity through the development of new markets for organic farm products (Fischer et al., 2012). Also, to enhance the appropriateness of the rule-making processes in a conservation program in Indonesia, Berdej and Armitage (2016) showed that BOs supported the creation of multiple governing structures and inclusive decision-making processess through public meetings. Thus, the BOs' responsiveness to actor expectations created opportunities for meaningful participation of several actors.

BOs are also critical in connecting, coordinating and supporting different levels and scales of governance – community, regional,