The Coral Triangle Initiative and regional exchanges: Strengthening capacity through a regional learning network

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ABSTRACT

Natural resource management and conservation programs that promote building capacity and social learning among participants often lead to the formation of learning networks: a type of social network where learning is both a goal and potential outcome of the network. Through forming relationships and sharing information, participants in a learning network build social capital that can help a network achieve social and environmental goals. In this study, we explored social capital in a learning network that emerged through a large-scale marine governance effort, the Coral Triangle Initiative on Coral Reefs, Fisheries, and Food Security. Through a mixture of social network analysis and key informant interviews, we examined the major patterns of information exchange among individuals who had participated in regional learning exchanges; evaluated whether the network's structure resulted in information sharing; and considered implications for strengthening network sustainability, capacity building, and learning. We found that the Regional Exchange network fostered information sharing among participants across national and organizational boundaries. While the network had individuals who were more central to information sharing, the network structure was generally decentralized, indicating potential resilience to changes in leadership and membership. Participants stressed the importance of the knowledge and connections they had acquired through the learning network; however, they expressed doubts regarding its sustainability and stressed the need for a strong coordinating entity. Our findings suggest that conservation learning networks have the ability to bridge cultural divides and promote social learning; however, a strong network coordinator and continuing efforts to support information sharing and learning are crucial to the network's strength and sustainability. The tangible learning and capacity development outcomes cultivated through Regional Exchange network underscore the value of and need to invest in conservation networks that support peer-to-peer learning.

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1. Introduction

Programs that increase capacity and foster learning among participants are an integral component of many natural resource conservation and management initiatives. In general, these efforts are known as "capacity building," processes wherein participants strengthen skills, knowledge, and relationships to promote the realization of joint goals (NRC, 2008). Capacity building activities may range from technical trainings with scientific experts to site visits where communities or agencies involved in resource management visit similar sites to exchange lessons learned (NRC, 2008).

By creating venues where individuals working toward common goals share ideas, capacity building programs often prompt the formation of learning networks: a type of social network where learning is a primary network objective and potential outcome (The Heinz Center, 2004). There are many different terms used to describe networks of individuals and/or organizations who come together to share ideas, from formal knowledge networks (Creech and Willard, 2001; Scarf and Hutchinson, 2003) to learning organizations (Manring, 2007) to learning communities and communities of practices (Davidson-Hunt, 2006; Berkes, 2009). Because these different types of programs all emphasize learning, the term "learning network" is used to encompass various networks that emphasize knowledge transfer, promote peer-to-peer learning, and help build capacity (The Heinz Center, 2004).

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Learning networks that offer tangible opportunities for peer-to-peer interactions (e.g., fisherman-to-fisherman, farmer-to-farmer), as opposed to participants solely receiving information from technical experts (who are often foreigners), are increasingly common in both marine and terrestrial management efforts. Programs like the *Campesino-a-Campesino* farmer-to-farmer network in Central and South America and the Locally Managed Marine Area (LMMA) network in the Indo-Pacific emphasize the importance of local knowledge and community-based management (LMMA Network, 2014; Rosset et al., 2011). Peer-to-peer learning networks operate at multiple scales. In addition to the regional LLMA network, for instance, there are also national LMMA networks, such as those in Fiji and the Solomon Islands, which link national and local governments, non-governmental organizations (NGOs), and communities (Cohen et al., 2012; Govan, 2009; Keen and Mahanty, 2006; Veitayaki et al., 2003).

When individuals with common interests and goals come together in a learning network, they have the opportunity to engage in social learning, a process of developing collective knowledge and shared values, which spurs behavioral and attitudinal change (e.g., Keen et al., 2005). Social learning in theory facilitates environmental program sustainability by fostering collective action; encouraging reflection and adaptation; and spurring changes in understanding and behavior that transcend participants and are diffused to wider communities (Keen et al., 2005; Muro and Jeffrey, 2008; Berkes, 2009; Reed et al., 2010).

Repeated interactions, sharing of ideas, and development of collective knowledge lead not only to learning, but also to the development of social capital: goodwill generated through repeated interactions among members of social network (e.g., Coleman, 1988; Adler and Kwon, 2002). Network participants get to know each other, form relationships, and build trust. Trust creates group cohesion, and groups that have more trust are able to work more efficiently toward achieving joint goals (Burt, 1997, 2005; Coleman, 1988; Ostrom, 1990). Relationships and trust built within a network help actors feel comfortable sharing information and engaging in social learning (Adler and Kwon, 2002; Lowry et al., 2009).

In practice, implementing networks that promote social learning and social capital development requires substantial investment of time and resources from network organizers and participants (e.g., Creech and Willard, 2001; The Heinz Center, 2004; Muro and Jeffrey, 2008). Information exchange and learning among network members are influenced by participants' availability constraints: network activities are often ancillary to the daily demands of participants' jobs (The Heinz Center, 2004). In the developing world, it is common for network coordinators to be foreign entities who may impose Western frameworks on learning activities, thus creating information and power imbalances in the network and limiting participant learning (Scarf and Hutchinson, 2003; Rosset et al., 2011). Even in groups of peers in a network, there are likely to be inherent power imbalances. In resource management networks, for instance, individuals operating at larger scales (e.g., national government actors) may exert influence over smaller scale (e.g., local government) actors, leading to inequitable learning outcomes (Reed et al., 2010). The realization of social learning in a network is further influenced by the participants themselves and how they interact with each other – e.g., whether the network is dominated by a few key individuals, or if participants split into smaller groups according to shared characteristics (e.g. Bodin and Crona, 2009; Newig et al., 2010; Belaire et al., 2011). In networks dominated by a few individuals, the central actors are in positions of power and can influence other network members (e.g., Bodin and Crona, 2009; Muñoz-Erickson et al., 2010; Weiss et al., 2012). Power and influence can be applied for the good of the network to coordinate activities and promote information sharing (Isaac et al., 2007; Weiss et al., 2012). However, in a network with power vested in too few individuals the resulting power imbalances can be detrimental to network function, creating barriers to collaboration and leading to the disenfranchisement of peripheral actors (Bodin and Crona, 2009; Muñoz-Erickson et al., 2010; Reed et al., 2010).

In order to assess relationships within a learning network and evaluate its ability to promote learning outcomes, a commonly used tool is social network analysis (SNA). SNA applies social network theory to describe patterns among a group of interlinked individuals and/or organizations (Wasserman and Faust, 1994). Using SNA to examine interactions among learning network participants helps elucidate relationships, network structure and function, and the network's ability to achieve its social, management, and environmental goals (e.g., Vance-Borland and Holley, 2011; Belaire et al., 2011; Smythe et al., 2014). SNA also highlights the particular role of various actors in the network and identifies potential power imbalances among actors (Bodin and Crona, 2009).

We undertook a study of a learning network formed under the umbrella of the Coral Triangle Initiative on Coral Reefs, Fisheries, and Food Security (CTI-CFF) – a collaboration among six countries (Indonesia, Malaysia, Papua New Guinea, the Philippines, the Solomon Islands, and Timor Leste) to better manage the marine resources of the Coral Triangle region (CTI-CFF, 2009). CTI-CFF is an ambitious experiment in multinational marine governance, addressing a diverse set of goals from improved fisheries management to climate change adaptation. The operational scale and breadth of CTI-CFF – as well as the effort to have countries with such diverse cultural, political, and management contexts collaborate – is unprecedented (Fidelman et al., 2012; Mills et al., 2010). An innovative component of CTI-CFF activities were topical regional exchanges (REXs): multi-day meetings where individuals from the Coral Triangle countries (the CT6) and technical experts worked together toward implementing CTI-CFF's main goals, such as designing a regional system of marine protected areas (MPAs). The meetings were supported by the U.S. Coral Triangle Initiative (USCTI) Support Program, a five-year effort that ended in 2014, was funded through the U.S. Agency for International Development, and provided over $40 million USD to support CTI-CFF activities. The REXs emphasized fostering interactions among CT6 nationals and providing participants with opportunities to meet their regional peers and learn from each other. Though the meetings were funded with U.S. support, CT6 participants were involved in their implementation through giving presentations, chairing official sessions, and voting on future actions and responsibilities. An important outcome of the REXs was the development and distribution of products to advance marine conservation in the CT region, including a detailed framework for a regional system of MPAs (CTI-CFF, 2013), an early action climate change planning framework and guidelines (CTI-CFF, 2011), and a framework for implementing an ecosystem approach to fisheries management endorsed by CT6 government officials (Pomeroy et al., 2015).

Our exploration of information exchange within the REX network offers insights regarding conservation learning network design and sustainability, as well as strategies that can be used to encourage social learning and capacity building. In this study, we explored the following research questions in relation to the REX network and conservation learning networks in general: (1) What are the major characteristics of the REX network (e.g., emergent leaders, network groups)? (2) For conservation learning networks, what characteristics promote sharing lessons among divergent network groups? (3) What actions can be taken to strengthen conservation learning networks, improve capacity, and promote network sustainability?