Governance and Community Conservation

Community Conservation
Research Network

Community Conservation Research Network (CCRN)

The CCRN is an international initiative to understand and support the links between communities, conservation and livelihoods, and to seek out best governance practices to support the combination of community-based conservation and sustainable livelihoods.

The CCRN is a partnership of indigenous, community, university, governmental and nongovernmental organizations, with a base at Saint Mary's University in Halifax, Canada. The CCRN undertakes local-level community-based research and capacity building activities at our sites around the world, and works globally to provide a focal point on the crucial themes of Communities, Conservation and Livelihoods.

The CCRN's research, which applies a consistent social-ecological systems lens, is producing a range of insights – on such themes as regional and community environmental governance, indigenous self-governance, local networking and the success of conservation initiatives – that will yield important lessons for communities, policy makers and decision makers at all levels, from local to global.

As a global network we are able to bring together a wide range of community experiences in conservation for the benefit and well-being of local residents. The results being produced will enable researchers, governments and communities to make changes that will empower communities and enhance their natural environments and local economies for decades to come.

For more information regarding the work conducted by the CCRN please visit our website at http://www.communityconservation.net/ or email us at ccrn@smu.ca.

Governance and Community Conservation

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Introduction

The Community Conservation Research Network (CCRN), as an international initiative to understand and support the links between communities, conservation and livelihoods, seeks out best governance practices to support the combination of community-based conservation and sustainable livelihoods. A key goal of the CCRN is to determine how the choice of governance arrangements can promote conservation that sustains communities and the ecosystem services upon which they depend. In this regard, we consider a number of related questions:

1. How does one recognise and support effective and equitable local conservation initiatives/practices?

2. To what extent are the interests of local resource users in conservation practices matched by meaningful involvement in decision-making processes?

3. How can governance arrangements deal with the reality that household and community livelihoods are often based on portfolios of multiple resources, while individual resources are managed in silos constrained by institutional structures?

4. To what extent are the governance processes emerging in complex conservation situations adaptive to social-ecological change and uncertainty?

This paper does not seek to answer all of these questions, but rather to focus on certain key 'ingredients' of governance arrangements that seem to work to promote conservation objectives while achieving a fundamental balance between food and livelihood needs and ecosystems. We draw on the experiences and outcomes from CCRN researchers and research sites around the world to generate broad insights into governance for community conservation. In this way, we hope to produce a better understanding of what governance means, what challenges it faces, and how we can support more effective governance arrangements in the CCRN context and beyond.

What is Governance?

The term governance describes the manner by which communities, societies and organizations of many kinds choose to organize themselves to make decisions about a goal or issue (such as the environment), including a concern with politics and the way power is distributed between different actors in society. The concept of governance is widely applied in fields such as political science, corporate affairs, international relations and public management sector (Stoker 1998, Van Kersbergen and Van Waarden 2004). There are many perspectives on governance, reflecting different disciplinary orientations, values and varied experiences (see Rhodes 1997, Stoker 1998). Much is written about the desirability of 'good governance', which includes key benchmarks such as accountability, transparency, responsiveness, equity and inclusiveness, rights-based approaches, participation, consensus-oriented decision-making, following the rule of law, effectiveness and efficiency (e.g., Crabbe´and LeRoy 2008, Charles 2011).

Environmental governance is a subset of the broader governance literature and it is concerned primarily with sustainability or environmental protection (Berkes et al. 2003, Folke et al. 2005) (see Box 1). In relation to decision-making about natural resources (concerning fisheries, forestry, water resources, etc.), it should be noted that there is a long history of discussions about 'governance', but until the past decade or so, most of the discourse and published literature on the subject was labelled 'natural resource management' (or specifically 'fishery management', 'forest management', etc.). The latter terms include the 'nitty-gritty' operational aspects, such as the setting of fishing seasons and the annual allowable cut of trees, but also includes issues around who makes the decisions and what processes are used – the essence of governance. In other words, the field of 'natural resource management' has traditionally covered all of what is in the above definitions of 'environmental governance'. The recent emergence of governance discourse in the field is essentially replacing the term 'management' with 'governance'. It should be noted, however, that there is some confusion in the literature on the subject, with some viewing governance as only dealing with processes, participation and underlying values in decision-making, leaving the operational decisions (such as those noted above) to 'natural resource management'. Readers must be aware of these differences in interpreting the available writing on the subject.

Box 1 - Select definitions of environmental governance (adapted from Armitage et al. 2012)

- Environmental governance refers to the set of regulatory processes, mechanisms and organizations through which political actors influence environmental actions and outcomes (Lemos and Agrawal 2006, p. 298)
- Environmental governance should be understood broadly so as to include all institutional solutions for resolving conflicts over environmental resources (Paavola 2007, p. 97)
- Earth system governance is defined here as: The interrelated and increasingly integrated system of formal and informal rules, rule-making systems, and actor-networks at all levels of human society (from local to global) that are set up to steer societies towards preventing, mitigating, and adapting to global and local environmental change and, in particular, earth system transformation, within the normative context of sustainable development (Biermann et al. 2009, p. 3)

Whatever terminology is used, there has been a clear shift in the way environmental decisions are made in countries around the world. This shift is often referred to as a transition from government to governance (Stoker 1998, Van Kersbergen and Van Waarden 2004), and it reflects a recognition that governments no longer are – and in many cases cannot be – the sole decision-making authority. Rhodes (1997) and others term this situation the 'hollowing out of the state'. This transition is reshaping the ways in which societies are thinking about the 'hows' and 'whos' of governance – how society should be organized, how problems should be addressed and by whom. Greater emphasis is being placed on governing processes more than structures, broadening to multiple forums of decision-making ('pluralism'), and changes in the manner in which organizations and actors relate to each other (Van Kersbergen and Van Waarden 2004). A broad array of hybrid governance arrangements are now being practiced that afford opportunities for innovative collaborations between the state, market actors and communities, with a greater role for non-state actors such as resource users, private sector organizations and non-government organizations (Lemos and Agrawal 2006 – see Figure 1).

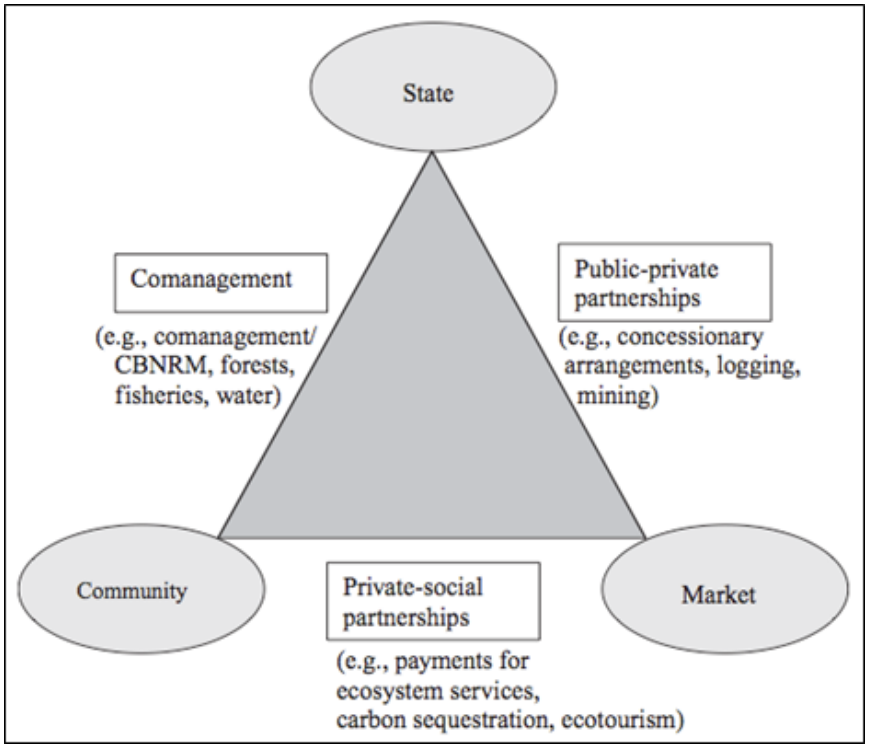

Figure 1. Hybrid environmental governance arrangements (Lemos and Agrawal 2006)

To illustrate the specifics of what is involved in governance, consider two examples from a marine (or 'aquatic') perspective:

1. There is a long history globally of fisheries in which local communities (or local groups of fishers) take the lead in making decisions on who can take part in the fishery, how decisions are made about the fishery's operations, and how the resulting benefits will be distributed (see, e.g., Johannes 1978, Berkes 1989, Pinkerton and Weinstein 1995, Pomeroy 1995). This may be referred to as 'self-governance' or as 'community-based management', but whichever term is used, it focuses strongly on the processes of and participation in fisheries decision-making. Guidelines to support such decision-making in fishery management are available (e.g., IIRR 1998, Graham et al. 2006), particularly aiming to empower fishing communities to be involved in what otherwise is often considered a governmental task. For example, Graham et al. (2006) provide guidance to fishing organizations and communities on such aspects of governance as policy-making, enforcement and compliance, and information acquisition. In modern fisheries discourse, community-based management is often seen as a sub-set of another governance approach, namely 'co-management', which focuses on the sharing of decision-making responsibilities between government and either local communities or

groups of fishers, e.g. fishing associations (Jentoft 1989, Pinkerton 1989). Co-management has become widely implemented and widely studied (e.g., Sen and Nielsen 1996, Pomeroy and Berkes 1997, Jentoft et al. 1998), with co-management that involves communities being more common in developing countries, and that involving fishing sectors prevalent in industrialized countries.

2. The idea of setting aside areas of land or sea for conservation purposes (e.g. to protect fragile habitats for wildlife, or to safeguard fish spawning locations) has also been common among societies globally. In marine settings, these areas have come to be known as Marine Protected Areas (MPAs). Some MPAs are established specifically for the purpose of improving over time the yield of fish from the sea (e.g. by ensuring that adult fish are left alone to reproduce in their spawning grounds, or that juvenile fish are left to mature before being exploited). Other MPAs are meant for broader purposes of biodiversity conservation and/or ecosystem health. Governance of MPA design, creation and operation can be complex (Garcia et al. 2014), especially in the latter situations noted above, in which the MPA goals are not fishery-specific but fishery impacts are likely, whether positive or negative (Hilborn et al. 2004). Much discussion exists about 'best practices' in MPAs, and in particular, the importance of instituting participatory approaches to MPAs has been emphasized (White et al. 2002, Pomeroy et al. 2007, Charles and Wilson 2009), a point that will be explored in detail later in this paper.

These examples illustrate both the progress and the challenges in the ongoing shift from government to governance, which, it must be said, is not straightforward. Of particular interest to the CCRN is to understand what these shifts in governance mean for communities generally, and for community conservation specifically.

Governance and Community Conservation

From a CCRN perspective, local ('place-based') communities are a key component of any governance system. For some CCRN members, 'community is the abode of governance' and is where 'governance should come to life' to address real world challenges (P. Nayak, personal communication 2014). Others have argued that strong local-scale governance increases the likelihood that governance will succeed at other scales (Dietz et al. 2003).

The role of communities within governance systems arises clearly in terms of decision-making about desired responses to environmental and natural resource challenges that can have a negative impact on local ecosystems and livelihoods. Responses, in the form of conservation and stewardship initiatives, reflect – when undertaken by local communities – what is called 'community conservation' (or 'community-based conservation'). Berkes (2004) stated that community conservation is about governance and conservation action that 'starts from the ground up but deals with cross-scale relations'. Western and Wright (1994) suggested that, in the broadest sense, community conservation refers to "…natural resources or biodiversity protection by, for, and with the local community". The central precept is "the coexistence of people and nature, as distinct from protectionism and the segregation of people and nature" (Western and Wright 1994: 8). Western and Wright argue that because community-based conservation includes a range of activities practiced in various parts of the world (both formalized and not), defining it in a more precise manner is not possible.

While the role of community in natural resource conservation has been highly variable (Western and Wright 1994), today communities have become the locus of conservation thinking. Advocates of community-oriented conservation point to the limits of state-centered policy, a push for decentralization, and increasing prominence of indigenous and ethnic claims about stewardship for justification. At

the same time, changing forms of governance can influence communities in their efforts to maintain livelihoods and protect ecosystems, and the capacity of communities for community conservation is an important consideration (Berkes 2007).

These concerns benefit from a social-ecological system (SES) perspective (Berkes et al. 2014). An SES lens contributes to a way of thinking about governance that acknowledges the importance of ensuring that conservation-focused institutions and governance arrangements match complex social-ecological systems, adapt as these systems change over time, and help steer these systems towards sustainability (Berkes et al. 2014). In the following sections we identify and describe some key ingredients for governance with implications for communities and conservation objectives. These ingredients follow from a recognition of the multi-level and uncertain context in which governance for community conservation occurs.

Governance and the Problem of Fit

The governance of social-ecological systems is inherently difficult since both natural systems and human societies are (1) interconnected and nested within one another (Berkes and Folke 1998), and (2) characterized by uncertainty, cross-scale interactions and feedbacks (Berkes et al. 2003, Cash et al. 2006). Governing under conditions of uncertainty and adapting to change requires some major shifts in the ways in which we consider human-nature interactions, and in how we perceive and practice conservation (see Berkes 2010, Charles 2012). Recognizing people and nature as integrated social-ecological systems is helpful in this regard (Berkes and Folke 1998).

A decade ago Berkes (2004: 628) argued, in relation to community conservation, that a more nuanced understanding is needed of people, communities, institutions, and their interrelations at various levels. Practitioners and scholars need to better understand what kind of governance arrangements promote and support community conservation. What works well in one context may not work well in a second context. In particular, understanding how community conservation is influencing and being influenced by new governance arrangements is particularly important (Armitage et al. 2012). A better understanding of governance – and new forms, such as emergent hybrid (e.g., public-private) and network arrangements – may suggest ways of successful incorporation of community conservation into formal conservation strategies. A key concern for the CCRN is thus to identify the key ingredients of governance for community conservation that foster a balance between livelihood needs and ecosystem health.

Many of our environmental problems, including those related to conservation, do not lend themselves to conventional assumptions about social and ecological control and stability, or scientific certainty. A propensity for short-term, top-down

management approaches to environmental problems has serious limitations – often prompting unforeseen social and environmental costs and contributing to a 'pathology of natural resource management' (Holling and Meffe 1996, Ludwig 2001). The limitations of linear thinking and centralized, command-and-control governance approaches have received increasing attention in governance research, notably drawing on studies of non-equilibrium ecology and complex adaptive systems (e.g., Holling and Meffe 1996, Ludwig 2001).

Furthermore, the persistence of 'silo' and 'stovepipe' thinking – that is, the separation that occurs when people or institutions work solely within the confines of their discipline or organization (Dale 2001) – restricts integrated, pluralistic thinking. Some CCRN members point to the "rigidity of policies…that does not allow for the recognition of a diversity of situations and problems" and the 'balkanization' of governments as serious hindrances to coordination and responsiveness (Anonymous, personal communication 2014). Issues of scale have proven especially challenging; conventional management approaches often struggle with cross-scale and cross-level environmental challenges and interactions (e.g., Cash et al. 2006, Armitage 2008, Charles 2012). These problems contribute to an interest in new ways of governing, and have emphasized the importance of addressing problems of fit – how the effectiveness of institutions and governance arrangements is dependent to a great extent on how they 'fit' with the conditions of the relevant social-ecological system.

Concerns about fit are gaining prominence in the scholarly literature on environmental change (e.g., Folke et al. 1997/2008, Young 2002, Galaz et al. 2008). It is argued that institutions that perform well in one time and place are not necessarily right for dealing with problems that operate at different scales or which involve different types of resources, user groups, drivers of change, or ecosystem behavior(s) (Young 2002). As a result, in any community conservation setting, it is important to ask whether the scope of the governance arrangement is a good match to address the problem at hand. Can the governance arrangement respond in a timely fashion to changes in the social-ecological system? Is the arrangement sensitive to the local context? These questions highlight three key challenges in terms of governance fit:

(a) spatial fit – finding an appropriate spatial match between institutions/governance and the environmental problem,
(b) temporal fit – being able to respond to environmental problems in a timely manner, such as matching the speed of impacts of invasive species,
(c) functional fit – finding an appropriate connection between the governance and scope of the environmental problem (i.e., the nature, functionality, and dynamics of the ecosystem).

Efforts to improve governance fit seek to avoid or overcome negative impacts resulting from a lack of fit. Two of these that have been identified by Galaz and colleagues (2008) relate to (a) threshold behaviour, when governance systems are unable to recognize or avoid irreversible shifts in social-ecological systems, and, (b) cascading effects, where governance systems are unable to buffer or trigger the flow of effects across biophysical, social and economic systems (e.g., climate change, rapid sea ice loss).

Improving governance fit is considered a 'wicked' problem (Ludwig 2001) with no single, straightforward solution. Instead, there is typically a need to go beyond 'idealized' approaches to instead use 'hybrid' models of governance that incorporate varied perspectives and actors; enable and support effective collective-choice arrangements at varied (e.g., community and sub-national) levels of decision-making; and involve diverse institutions across scales and levels (Dietz et al. 2003, Armitage 2008, Berkes 2010). These models can include co-management, public-private partnerships and private-social partnerships (see Lemos and Agrawal 2006).

Key Ingredients of Governance

Governance for community conservation is becoming more complex. Practitioners and scholars need to better understand what kind of governance arrangements promote and support community conservation in the best possible way, so that social-ecological challenges are tackled through innovative governance approaches that take advantage of new understandings and ways of thinking about complex social-ecological systems (Berkes et al. 2003, Dietz et al. 2003).

To identify 'key ingredients' of governance helpful in engaging communities in conservation, we surveyed CCRN members (academic researchers and community practitioners), who were asked to reflect on their individual experiences with governance and community conservation, in order to answer seven open-ended questions on a range of governance-related themes. CCRN members identified a diversity of key ingredients of governance from their sites and projects (Figure 2).

Figure 2. Visualization of key ingredients of governance identified by CCRN members in 2014 (generated using Wordle software). The size of the word is proportional to the number of times the word appeared in surveys; i.e. the larger the word, the more frequently mentioned.

Responses were compiled and synthesized, serving to guide the framing of this paper. We focus in-depth below on a sub-set of key ingredients of governance, to highlight some necessary (but insufficient) conditions for effective community conservation.

Participatory governance (deliberative and informed)

Greater civil society involvement has become a significant theme in governance over the last several decades (Béné and Neiland 2006, Armitage et al. 2007, Armitage 2008). The rationales for participation of diverse sets of non-state actors include: increased legitimacy, more effective and efficient governance, and improved access to knowledge and expertise (Cash and Moser 2000). Participation is often advocated as a means to improve equity (see Reed 2008) and rights (e.g., Charles 2011); for example, survey respondents argued that including local stakeholders in decision-making processes reduces the likelihood of marginalizing those at the periphery. This is consistent with Reed (2008) who argued that stakeholder participation must be underpinned by a philosophy of empowerment, equity, trust and learning. Related to this is the benefit of participatory governance in building social relationships and, implicitly, *social capital* or trust (Folke et al. 2005), with the latter a determinant of success in many cases of governance, being often a prelude to building a working relationship.

Although participatory approaches are seen to have many benefits, there is ongoing criticism of some participatory models, notably when this is merely part of a top-down process of co-option and 'consultation' (see Reed 2008). Box 2 (below) gives an illustration of this problem, from a CCRN partner, the Nuu-chah-nulth Tribal Council in British Columbia, Canada. In considering the criticisms, many survey respondents called for a *deliberative approach* to participation, that is, a focus on communication and engagement to collectively consider issues and explore the diversity of positions and assumptions held by participants. For example, one CCRN member noted that 'true' participatory processes could only be fostered by 'creating settings for dialogue that are supportive of diverse emotional, cognitive and communicative conditions' and where 'all groups can express their opinion and knowledge and be listened to by others' (C. Seixas, personal communication 2014).

Deliberative processes are especially important when dealing with a complex mix of different (and sometimes conflicting) societal values and interests. Community conservation and governance, for example, are intertwined parts in the struggle to simultaneously promote community livelihood viability/sustainability and biological conservation. Engaging stakeholders is a continuous process extending throughout all stages of governance, and ideally considered as early as possible, from planning to management to monitoring and evaluation processes. In one of CCRN's cases, Shiretoko, Japan, the creation of a coordinating system has helped to ensure participation of a wide range of actors in the planning, management, and monitoring of the World Natural Heritage site, from governments, local fisheries cooperatives, academics to scientists and NGOs (Makino et al. 2009). Other mechanisms to involve societies include volunteer engagement, leadership building, collective problem solving, and community monitoring approaches.

Box 2 - Example: the need for deliberative participation in governance, Canada's Nuu-chah-nulth First Nations

Post-contact, the Canadian government appropriated governance authority from Canada's west coast First Nations to implement a new 'disconnected' system to managing the region's coastal-marine resources. Today the Nuu-chah-nulth First Nations remain heavily reliant on local ecosystems for livelihood and survival. Yet, the central government authority for the region is located some five thousand kilometers away in the country's capital. Resource users in this area argue that a federal authority is "…not connected with the landscape, ocean, and the resources in the way that Nuu-chah-nulth Ha'wiih are on a daily basis". They ask: how can decision makers be aware of community conservation issues and the needs faced by First Nations and/or local coastal communities when they have no deep connection to the people or place?

Uu-a-thluk, Nuu-chah-nulth Tribal Council, personal communication, 2014

Multi-level and networked governance

There is little disagreement that communities have an important role to play in the governance of natural resources. Yet, in many parts of the world the

challenge of linking resource users at the local level to decision-makers at other levels persists (e.g. Box 2). Such linkages, both horizontal and vertical, are crucial for effectively addressing cross-scale environmental challenges, as well as for deliberative participation (as above). The linkages are needed between diverse sets of actors – from local users to municipalities to regional and national organizations to international bodies (Young 2002, Dietz et al. 2003, Cash et al. 2006). Neither community conservation nor government-based conservation alone can be a panacea (Berkes 2007); greater attention to linkages and interplay, it is hypothesized, can help social actors and institutions better respond and adapt to change by stimulating communication, collaboration and coordinated actions (Folke et al. 2005, Armitage 2008). At the same time, configurations of multi-level arrangements can take advantage of scale-specific comparative advantages (Cash and Moser 2000) by drawing on the best of the knowledge, technical capacity, and functional specializations at each level. However, numerous challenges with multilevel arrangements are identified in the literature, including ongoing issues with connecting and including communities within governance processes. A CCRN-related example of this, from India's Chilika lagoon, is outlined in Box 3.

The concept of 'multilevel' governance has also expanded to discussions *of networked governance* (as well as *polycentric systems*) (e.g., Ostrom 2010). This recognizes the value of "diversity and redundancy in the partnership and governance networks" (C. Seixas, personal communication 2014) to nurture a variety of responses to address environmental problems while better diffusing negative effects and distributing benefits. In Kristianstad, Sweden, for example, loosely connected horizontal and vertical networks are key to form ad hoc projects when pressing issues arise (Hahn et al. 2006). The idea of networked governance relates closely to a major field of current research, on s*ocial networks*. Research indicates that social networks are key to understanding governance and conservation outcomes (Bodin and Crona 2009, Alexander and Armitage 2014), and to mobilizing social memory, resolving conflicts, acquiring and diffusing knowledge, etc. (see e.g., Bodin and Crona 2009). Networks of collaboration can be formal or informal but, importantly, not all social networks are created equally. It is thus important to assess the nature of these social networks to understand the implications for governance.

Box 3 - Example: recentralization in India's Chilika lagoon

A *de*commonisation or *re*centralization movement in the 1980s and early 1990s in eastern India has had profound implications for local fisher communities. The Chilika lagoon, the largest lagoon in India, has historically supported upwards of 300,000 fishers. It was characterized by various levels of customary management, fishermen cooperatives, and leasing systems that allowed local fishers to regulate access and use over areas of the lagoon. In recent years the creation of two autonomous agencies under the State Fishery Department and the State Forest and Environment Ministry, combined with other policy changes tied to aquaculture and the existing leasing systems, resulted in tighter state control and a shift toward centralized management. In turn, local fishers became isolated from governance processes, cooperatives were disempowered, and multi-level institutional arrangements declined. The implications of these governance changes for both ecosystems (via modification of practices and primacy of aquaculture) and society (via outmigration, occupational displacement) are significant.

Adapted from Nayak and Berkes 2011

Social learning and the co-production of knowledge

Governing complex and changing social-ecological systems requires a great deal of information, together with the capability to learn, as new information and understanding arises over time. In this regard, *social learning* (Berkes et al. 2003, Folke et al. 2005, Armitage et al. 2008) is crucial for effective governance, emphasizing social interactions among stakeholder groups, reflection on what is being learned, and iterative attempts to apply what is being learned to the issue or problem at hand (see Armitage et al. 2008). CCRN members note:

- The need for "…continued learning and capacity building through problem-based learning taking into account both traditional and scientific knowledge…" (C. Seixas, personal communication 2014);

- The importance of learning *from* communities who themselves "…have a long history of [natural resource] management through locally crafted institutions, rules and principles" (P. Nayak, personal communication 2014).

Social learning includes strategies to bring people together – via for example scenario planning, citizen science, community science, joint fact-finding, etc. (See Box 4 below for a discussion of citizen science from a CCRN-related study.) This can go far in developing shared understandings and (creative) solutions of problems. Different actors and expertise, sources of knowledge and perspectives are needed to understand and cope with complex environmental problems. Both Canada and Chile, for example, have adopted integrated watershed management as a way to engage local communities, and to coordinate and integrate institutions to stimulate learning (Salas et al. 2012, Hurlbert and Diaz 2013). Furthermore, engaging communities in learning processes can build their scientific literacy and education, contributing to the democratization of the environment (Conrad and Hilchey 2011). Some learning is facilitated through key leaders or key organizations that can help translate information or findings from one level of organization to another and provide a politically neutral and legitimized space for learning.

The knowledge needed for social learning tends to be widely distributed among state and non-state actors at local, regional, national and even international levels. Because no single actor possesses the full range of knowledge needed to support effective governance (Berkes 2010), importance is placed on using multiple types of knowledge (e.g., traditional, local, scientific) to understand the dynamics of a whole system. In conservation practice, this means affording opportunities for both formal western scientific and non-scientific knowledge systems. Differences in the way knowledge is produced and its perceived legitimacy (Berkes 2008) mean that the integration of knowledge types can be hard. Furthermore, there can be difficulties in the uptake of local knowledge: "community organizations often work in isolation of people who have the capacity to 'govern'… the information or data they deliver to decision-makers is often unwanted or governing bodies are not set up to act on the information they are being provided with" (anonymous CCRN member, personal communication 2014).

These challenges have led many to stress a need for the *co-production of knowledge* in contemporary environmental governance. This would allow different actors to work and think together to generate new knowledge collaboratively (e.g., Armitage et al. 2011). Co-production processes can provide a better focus on building a holistic, integrated understanding of the environment and environmental challenges (see Pohl et al. 2010). In doing so, knowledge co-production expands the role of non-state actors from knowledge recipients to include them as knowledge generators (Box 4).

Box 4 – Example: empowering communities through citizen science

Citizen science is a process to actively engage citizens or citizen organizations in scientific research alongside professional scientists and government agencies for the purpose of community-based monitoring and community-based management. It can facilitate the democratization of the environment by making environmental science and expertise more accessible to local communities, while too making scientists more aware of local knowledge and expertise. In doing so, local community members can increase their scientific literacy, better understand the role they play in the local environment, build social capital, better engage local issues, and have more influence on management and policy-makers.

Adapted from Conrad and Hilchey 2011

Leadership & capacity building

According to CCRN survey respondents, effective community conservation processes require leadership. Leadership is widely viewed as a crucial factor in bringing different sets of actors together and getting them to engage in collaborative processes (Folke et al. 2005). Leadership can take many forms, from singular individuals, to facilitators and policy entrepreneurs, to organizations like *boundary organizations* (Cash and Moser 2000) or *bridging organizations* (Hahn et al. 2006). See Box 5 below for a CCRN-related example of a bridging organization in Bali, Indonesia.

These leaders can also serve many functions, including mediation, building trust,

managing conflict, and compiling and generating knowledge (Folke et al. 2005). Carrying out multi-party participation, for example, is no simple process and may necessitate an intermediary to create politically neutral space that is supportive of emotional, cognitive and communicative conditions. In a review of cases from the UNDP Equator Initiative, Seixas and Berkes (2010) highlight the importance of leaders for initiating new linkages, straddling levels of social and political organization, and contributing knowledge, skills and expertise to projects.

Leaders (and stakeholders alike) need empowerment and capacity building, particularly at the community level. In Paraty, Brazil a series of researcher-led training modules on conservation and governance with the local Trindade fishers and boatmen association (ABAT) enabled them to engage with the park management board to negotiate rights to take tourists boat-touring and to negotiate fishing rights (C. Seixas, personal communication 2014). It is important to couple the concept of participation with a need for *empowerment* to enable stakeholder groups to address both current and future problems. For example, citizen science programs, as noted in Box 4 above, can not only involve communities in aspects of governance but also empower and build their capacity to do so. A lack of agency or capacity can pose serious barriers to representation and engagement in governance processes.

Box 5 – Example: a role for bridging organizations in Indonesia

Bridging organizations – i.e. independent entities that bridge the gaps between different organizations – are being recognized as important to facilitate key social processes for environmental governance. In Bali, Indonesia the nascent Bali Marine Protected Area Network is focused on building linkages between governments and other stakeholders at multiple scales and levels. A history of decentralization in the region has meant a lack of coordination between and among levels of government, as well as fragmented and isolated conservation efforts. This Network is intended to implement more comprehensive management by bridging key actors and conservation practices to braid cooperation, reduce conflicts, and share best practices between aquatic parks. The collaborative forums created by the Network also contribute to a better learning environment by enabling opportunities for depoliticized discussion between

social and political organizations and aligning of interests.

Berdej, personal communication, 2014 (see also Berdej and Armitage 2016 and Nyegara Gunung 2014)

Summary

Table 1 below summarizes the four key elements of governance discussed in this paper. As noted earlier, there are many other elements that can be considered. Some of these are discussed in the references at the end of the paper.

Table 1 – Some key ingredients of governance

Participatory governance (deliberative, informed)	▪ Collaborative, deliberative and multi-party participatory processes to bring together multiple actors and perspectives, and build social capital for true partnerships and collaborative relationships
Multi-level and networked governance	▪ Governance from the ground up, involving interactive networks and linkages across multiple levels, with vertical and horizontal links among institutions ▪ Redundant multi-layered, and polycentric social networks in order to better coordinate people, information and knowledge
Social learning and co-production of knowledge	▪ Learning as both a social process and an outcome, which may be facilitated through key organizations and leaders ▪ Recognition of the value in drawing from multiple sources of knowledge to build a holistic, integrated understanding. Emphasis on producing new knowledge collectively
Leadership & capacity building	▪ Importance of leadership for mediation, building trust, sense making, managing conflict, and compiling and generating knowledge ▪ Recognizing the diversity of leaders – facilitators, entrepreneurs, bridging and boundary organizations, etc.

Moving Forward

Governance is an important dimension of the CCRN's research approach, as may be seen throughout the CCRN website (www.CommunityConservation.net). In this paper, we have outlined select definitions of governance and highlighted important linkages between governance, communities, and community conservation. The shift from government to governance is particularly important in the community conservation context given the expansion of opportunities and roles for state and non-state actors. It reflects the uptake of new attitudes and ways of thinking about the environment, societies, and their relationships, acknowledging the dynamic and multilevel nature of these systems. However, numerous challenges persist.

Building on the literature, this paper identified and described key ingredients of governance that are important in engaging communities on conservation practices, as highlighted by CCRN members in their individual sites and cases. Drawing on these observations and experiences collectively, we aim to contribute to a shift in thinking about the ways decisions are made in the context of the environment, societies and conservation practices. Ultimately, a synthesis of CCRN research will help us to examine: 1) the extent to which interests of local resource users in conservation practices are matched by meaningful involvement in decision processes at multiple levels and, 2) the extent to which governance processes emerging in complex conservation situations are able to adapt to social-ecological change and to deal with a range of uncertainties.

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Appendix

More information on governance can be found in the material provided below.

Suggested Readings

Armitage, D. 2008. Governance and the commons in a multi-level world. *International Journal of the Commons*, 2(1): 2-32.

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Video Resources

Fikret Berkes, Stockholm Resilience Center: "Resilience: What is adaptive co-management?" (2008) http://www.youtube.com/watch?v=Y_2yJ89QoZ8 – 2:19

George Greene: "Changing Face of Environmental Governance - A Panorama of Contemporary Practices" (2013) http://www.youtube.com/watch?v=XWrmLPl9arY – 50:43

Sulemana Abudulai, Stockholm Resilience Center: "How can we build ecological governance capacity?" (2011) https://www.youtube.com/watch?v=o8H3Lj4YOmU – 1:15

Tim Daw, Stockholm Resilience Center: "Co-management, sustainable fisheries" (2012) http://www.youtube.com/watch?v=N37OSlFQ37M&list=PLi5dZKhqTHO5w-p3qHaN2nzpCwMOFZxEe&index=2 - 4:58

Bonnie McCay, Stockholm Resilience Center: "What is the role of trust in governance?" (2012) http://www.youtube.com/watch?v=gyijCWkLrfI#t=46 – 2:53

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