Citizen Engagement in Governance for Sustainability

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1. Introduction

The following paper explores ideas related to governance for sustainability that might apply to UNESCO biosphere reserves in Ontario. First, the paper defines governance and then reviews various modes and approaches to governance, noting some of the factors that have contributed to a shift from traditional governance by governments to broader understandings about the structures and processes involved in collaborative multi-stakeholder governance.

Citizen engagement is fundamental to both sustainable development efforts and to collaborative governance approaches. Self-organization of citizen initiatives suggests that social capital is produced and strengthened as local groups and organizations engage in more sophisticated types of governance processes. Importantly, place-based governance that responds to context-specific challenges must also respond to the cross-scale dynamics of sustainability, as global pressures manifest themselves as local vulnerabilities.

Against the celebrated phenomenon of civic participation, however, collaborative governance raises some serious questions. There are multiple players and influences to account for, plus questions about their respective roles, legitimacy, capability, motivations and structure. What is the proper role of the state? How can civil society organizations be held accountable? And what happens when collaborative governance fails?

Each of these questions is partly answered in the literature about governance networks. The themes of bridging other players and network members in governance and in crossing and mediating boundaries between different sectors and disciplines are critical for network governance. These themes are particularly salient for UNESCO biosphere reserves, as most of them are faced with the challenges of social networking, mediation, and interdisciplinary translation of sustainability principles across a wide range of governance organizations.

2. Defining Governance for Sustainability

Governance has come to describe the structures and processes used by a variety of social actors, including government, to influence and make decisions on matters of public concern (Institute on Governance, 2002). The literature recognizes that increasing the players in societal decision-making is partly an attempt to keep pace with increasingly complex issues of public concern that transcend political borders and traditional management approaches. Governance is the combined result of all social, political, and administrative actions and interactions; it describes the *structures* and *processes* of collective decision-making. As Kooiman (2003:657) explains: "No single actor, public or private, has all the knowledge and information required to solve complex, dynamic and diversified problems." Certainly within debates about sustainable development, collaborative governance has become a new norm.

Theories about governance have been developed in response to two related shifts in power: the rise of a global political and economic system that has destabilized the dominance of the nation state in governing, and at the same time has given rise to self-organized networks that play greater roles in matters of social, political and economic governance. Broader governance initiatives have also been encouraged by the rise of increasingly complex trans-disciplinary, cross-sectoral and multi-level problems, including the general unsustainability of key global trends and their local and regional analogues (Gibson, et al., 2005).

Not only has the context for governance changed profoundly over the past few decades, but social issues have become much more complex, and decision-making systems, particularly for questions about sustainability, are fundamentally challenged to respond to public concerns. Governance for sustainable development "…implies the existence of the appropriate knowledge and governance capacity to maintain economic vitality with social inclusiveness in opportunities and benefits, provide for ecological sustainability and the protection of biodiversity to guide the use of resources, and promote social equity within and across groups and generations. All three are necessary and no one of them alone is sufficient. These requirements must also hold across a range of spatial and temporal scales (Francis, 2004: 21).

The field of governance *for* sustainability tries to capture the complex decision making systems that go beyond the established institutions of government, the private sector and civil society, to include broader cultural phenomena, such as assumptions, ideological positions, customs, social norms and everyday practice. It recognizes that the governance challenge of "effecting change in informal governance institutions, such as habits and routines, [also] requires identifying the levels at which the change is desired, the territorial scale at and through which the desired change is to be implemented…" (Kemp et al., 2005: 19).

The Institute on Governance (2002) defines governance as "the interactions among institutions, processes, and traditions that determine how power is exercised, how decisions are taken on issues of public and often private concern, and how citizens or other stakeholders have their say." Stakeholders are those who have an interest in a particular decision, either as individuals or representatives of a group. This includes people who influence a decision, or can influence it, as well as those affected by it; Hemmati (2002) argues that multi-stakeholder processes bring together all major stakeholders in a new form of communication, decision-finding (and possibly decision-making) on particular issues.

Fundamentally, governance is about power, relationships and accountability: who has influence, who decides, and how decision-makers are held accountable. Governance may be used in different contexts – global, national and local, and social and institutional. Governance occurs wherever people organize themselves – formally and informally – to develop rules and relationships with each other in pursuing their objectives and goals. Different "modes of governance" or "styles of governance" characterize different social and political spheres (Meadowcroft et al., 2005; Jamieson, 2001, respectively). As a broadly inclusive term then, governance refers to the role and capacities of the state, together with those of the private sector and civil society.

3. From Government to Governance

Underlying the recent governance literature is the perspective that the world's dominant political-economic system is fundamentally changing, and that the prevailing hierarchic nation-state has become less relevant and less effective than other forms of governance that have evolved. Many scholars attribute the shift in governance to the impacts of a restructured global economy resulting in the replacement of one dominant mode of social regulation and economic intervention to another. The resulting 'minimal state' refers to a fundamentally different extent and form of public intervention and the use of markets and quasi-markets to deliver 'public services' that reflects an ideological preference for less government (Rhodes, 1996: 654). The effects of state downloading of responsibilities, often without a simultaneous transfer of power or adequate resources, is relevant to sub-national agencies and local governments who are burdened by new expectations but are without the capacity to govern in those areas effectively.

Paradoxically, just as civic involvement in local and regional governance is being celebrated, social and environmental risks and responsibilities are being devolved by upper-tier governments who often neglect to provide the resources required to deal with them (Lerner, 2007). Communities are supposed to be empowered to participate in localized governance processes at the very moment that they are made more vulnerable to the effects of global governance. Some social policy observers share the concern that the rhetoric of shared governance encourages governments to abrogate their responsibility for economic, social and environmental well-being (Rice and Prince, 2003). Swift (1999: 9) observes, for example: "In Canada, where a fashionable neo-liberal ideology has meant a return to laissez-faire, government often promotes the idea that 'the community' should take upon itself the tasks of providing services once delivered by the welfare state." Thus, particular modes of governance may act to *dis*empower communities if resources are reduced while expectations mount (see also Smith, 2005; Graham and Phillips, 1998).

Citizen demands for greater legitimacy, transparency and authentic engagement have resulted in the emergence of collaborative governance approaches and the self-organization of countless community groups and civil society organizations. Collaborative governance increases the number of players and perspectives involved in traditional decision-making through a variety of initiatives and approaches and a new level of social and political engagement. Where multiple actors are involved in complex and overlapping decision-making structures, collaborative governance aims to integrate their goals, issues and values. Processes of collaborative governance are thought to demand and produce mutual respect, trust and other forms of social capital that lead, in turn, to the creation of social learning and opportunities for adaptation to change. Collaborative governance mechanisms are particularly flexible and responsive to changing decision rules, cultural shifts and institutional contexts.

For governing bodies to maintain their legitimacy and cooperation by 'the governed,' successful governance mechanisms are more likely to evolve out of bottom-up than top-down processes. Rosenau (1995) argues that governance mechanisms self-organize based on shared needs. Whereas government supports activities defined by formal authority, governance refers to activities defined by shared goals (Rosenau, 1995:17). Governance "…embraces not only government organizations but also informal, non-governmental mechanisms. So you get

governance without government when there are regulatory mechanisms in a sphere of activity which function effectively even though they are not endowed with formal authority" (Rosenau, 1992: 3, 6; cited by Rhodes, 1996: 657-8). Accordingly, rule systems may exist in the absence of established legal or political authority, and therefore may foster control mechanisms, such as social norms and sanctions, that sustain governance without government.

Since governance is a neutral term that simply describes a process of decision-making (Wyman, 2000), the quality of that process is "…determined by the design of institutional arrangements …and by the way in which decisions are made" (Kreutzwiser and de Loe, 2004:189). These types of institutional or 'governance arrangements' capture the institutional 'layers' and organizational 'players' within which biosphere reserves must navigate and engage in order to have influence. Understanding the structure of governance arrangements helps to account for the cross-scale challenge of sustainability and the relative roles of state, market and civil society from local to global levels.

The governance layers within any single biosphere reserve, for example, might be made up of formal institutions (rules) such as property rights, aboriginal rights, jurisdictions and administrative authorities, and informal ones that guide local politics for cooperation, decision making, and dispute resolution (Francis, 2004:15) with the players in governance processes being similarly diverse.

UNESCO has no specified types of organization that it requires for a biosphere reserve, and leaves the question of organization up to each country to decide. In Canada, decisions about organizational arrangements are made locally. Many in the Canadian Biosphere Reserves Association would agree that this flexibility allows for place-based, situation-specific arrangements which are adapted to local circumstances and can evolve over time as may be necessary. Francis (2004: 10) notes that:

> The key to success in biosphere reserves lies with establishing local organizational arrangements that can initially serve to promote and explain the concept (not only what it is, but especially what it is not), build support (or 'buy-in') from community groups and governments, [and] help develop the functions that biosphere reserves are meant to serve….

Standard activities might include research, monitoring, education, public information, and demonstration projects where multiple stakeholder or partners share resources and governance responsibilities.

4. Collaborative Governance

Collaboration increases the number of players and perspectives involved in traditional decision-making through a variety of innovative approaches. Where multiple actors are involved in complex and overlapping decision-making structures, collaborative governance aims to integrate their goals, issues and values. Processes of collaborative governance are thought to demand and produce mutual respect, trust and other forms of social capital that lead, in turn, to the creation of social learning and opportunities for adaptation to change. Collaborative governance mechanisms are particularly flexible and responsive to changing decision rules, cultural shifts and institutional contexts.

Collaborative modes of governance exist alongside the more familiar modes of state authority (regulation, enforcement, resource distribution, etc.) and market performance. Environmental governance is not a new phenomenon that has come to replace national regulatory frameworks, Meadowcroft (2007) argues, rather governance has evolved in direct response to the changing nature and perception of environmental problems. Stakeholder-oriented approaches, market-based mechanisms and international initiatives that have gained prominence over the past few years in response to environmental problems do not replace existing regulatory or other policy frameworks, they simply are layered on top (Meadowcroft, 2002: 176).

Current approaches to governance bring policy frameworks together with rule sets, institutions, and various kinds of stakeholder involvements. Governance tends to involve "…a wide range of institutions and actors [stakeholders] in the production of policy outcomes including NGOs, quasi-non governmental organizations (quangos), private companies, pressure groups and social movements, as well as those state institutions traditionally regarded as formally part of government" (Painter, 2001: 317). The resulting "tangled jurisdictions" (Paehlke, 1989) and "tangled hierarchies" (Jessop, 2002) are phenomena that illustrate the increasing complexity of governance, as new layers and players are added to the usual challenge of governing society.

In any biosphere reserve in Canada, the local organizational arrangements involve networking processes to decide upon particular roles and priorities that the biosphere reserve group itself will take on. This is an expression of governance in the sense that the networks reach beyond government to include business organizations and non-governmental groups (civil society) to provide services not sufficiently covered by government or the market sector (Francis, 2004). Indeed, building networks can be one of the most effective ways of enrolling others into the process of defining and achieving sustainable development for specific places.

5. Citizen Engagement

It is useful to recall that collaborative governance approaches rely on citizen engagement; the roots of which can be found in debates about public participation and deliberative democracy. Not only do participation and deliberation point to the fundamental principles of representation, inclusiveness, and fairness in environmental decision-making – all factors of 'good governance' – they are also implicit in the quest for sustainability.

The call for participatory process is partly driven by the democratic position that those affected by a decision should be involved in the decision-making process (Dryzek, 2000; Roseland, 2000; Rydin and Pennington, 2000). Participation in such decisions, it is argued, empowers people to have greater control over their lives and in the case of conservation, encourages people to care for their environment. The rationales for initiating and promoting citizen engagement in governance are "by now almost mantra-like: equity considerations; building trust in institutions; better information from multiple perspectives – for visioning, strategizing, priority-setting, decision-making in general; better public buy-in (ownership) for less conflictual, more efficient implementation of decisions" (Lerner, 2007: 9). Participatory processes can meet citizens' demands for inclusion and government accountability and governments' needs for increased legitimacy.

However, the potential benefits of participation may be difficult to realize for a number of reasons that relate both to processes and outcomes. Public consultations often fail to be truly participatory, since they can have little bearing on final decisions and have limited influence on resulting policy (Barnes, 1999). Existing power dynamics among the participants may over-ride attempts at fair representation (Clark et al., 2001; Young, 2003). Neither is conflict necessarily reduced through deliberation when contrasting values are made explicit (Botes and van Rensburg, 2000).

Although participants may pursue common goals, participation does not consistently improve the implementation of decisions or the realization of those goals, in terms of ecosystem health or public policy for example (Sharp, 2000). Sommer (2000) has noted problems of securing public interest and involvement, and the excessive pressure from citizens for immediate and visible results. Important issues around power relations, representativeness, insularity, and accountability relate to public participation processes and to non-governmental organizations and civil society in general (e.g., Donahue, 2004; Gibbs et al., 2002; Rydin and Pennington, 2000).

Despite the trend toward greater deliberative democratic processes, participation alone does not constitute or convey the full possibilities for citizen engagement. For people to be effectively engaged in sustainable development, they must establish a shared sense of purpose and participate in a process that is meaningful to them (Renn et al.,1995; Barnes, 1999; Beierle and Konisky, 2001). Indeed, for citizens to sustain their engagement, they must perceive their involvement as effective and relevant to decision-making processes.

Lerner (2007) links civic engagement, social capital, and community capacity building to governance for sustainable development. Each of these elements is seen to both support the conditions for effective collaboration and to be outcomes of collaboration and network participation. A ‘virtuous circle’ or four-phase cycle of citizen engagement captures some of the collaborative dynamics underpinning governance for sustainability. Specifically: volunteer activities that create/strengthen friendships, bonding, social capital, social learning (knowledge, skills, political tactics), feelings of empowerment, bridging to other organizations, community capacity building, achievement of objectives, long-term commitment of volunteers and, it is hoped, eventuate in the engagement of seasoned citizens in collaborative governance arrangements which have adaptive capacity.

Social capital can be defined as social networks, norms and levels of trust within and between social groups (Putnam, 1993). Social capital may be seen as a public good which enables a greater output to be produced from the stock of physical and human capital in society. This stock accumulates through use and over time, reinforcing networks, norms and trust (Putnam, 1993). Types of social-capital networks have been identified as: *bonding* (within small groups, and not always with positive outcomes), *bridging* (horizontally between actor groups), *linking* (vertically) (Woolcock, 2001) and *bracing* (strategic linkages that create or strengthen heterogeneous networks) (Rydin & Holman, 2004).

Though actual virtuous-circle processes are more simultaneous, iterative and circular than sequential, Lerner (2007) explains that an ‘ideal-type’ dynamic sequence at the regional and

community level seems to be:

> **Citizen engagement**: *self-organized* as a response to an identified problem, threat, opportunity or *other-organized* by governmental or other *hybrid* institutions as a planning consultation, visioning exercise, or similar process involving citizen participation – either of which may eventuate in—or fail to achieve:
>
> **Active involvement:** *self-organized*: volunteer monitoring, research, advocacy; *other-organized*: participation in (a variety of) processes (with varying degrees of decision-making power), which may lead to:
>
> **Strengthened capacity**: forging bonds of friendship, trust, shared values and norms, (*building social capital*; learning together by doing and dialoguing (*social learning*), which may lead to:
>
> **Empowerment** through knowledge, skill-development, enhanced organizational skills (*agency*, *action competence*) leading to increased influence (often political clout) that in turn encourages new levels of engagement and involvement in governance…

One study of Australian community catchment groups (Fien & Skoien, 2002:1) neatly characterizes the virtuous circle pattern: "The findings suggest that social capital is enhanced through processes of community participation in the catchment consultation processes…the relationship between social capital and action competence is complementary, with social capital and action competence being mutually enhanced by the social learning that accrues from the process of community participation" Citizen engagement in biosphere reserves has been found to support capacity building (e.g., social capital, social learning, etc.) and is strongly associated with both institutional and adaptive capacity (Reed, 2007 and Mendis-Millard fothcoming, respectively).

Despite the prospect of sophisticated forms of self-organization in collaborative governance, Young (1982: 102) notes that: "increases in the complexity of social systems will frequently operate to accentuate the role of spontaneous orders…. It is not surprising that the ability of dominant actors to impose order generally declines as a function of social complexity. But it is important to note that it will ordinarily become harder and harder for groups of actors to arrive at meaningful or coherent bargains as the issues at stake become increasingly complex."

Nevertheless, Szerszynski (1997:151) maintains these 'self-generating initiatives' are closer than are bureaucracies to people's lives and sustainability concerns: "their agendas and activities are more likely to be 'owned' by their participants, as opposed to being felt to have been determined and imposed from outside." Associations develop trust, which is required if people are to change their values and behaviours in support of sustainability and to address collective-action problems; "the very act of participating in associational activity can itself generate the kind of human flourishing which any definition of sustainable development should include" (Szerszynski, 1997:157).

6. Place-Based and Cross-Scale Governance

Recent developments within the fields of public participation, community development and collaborative planning suggest that place-based governance creates opportunities for

sustainability by linking local and regional identities to processes that engage citizens, stimulate the development of social capital, and strengthen civil society. The notion of place-based governance combines ecological and political interpretations of 'space' with sociological and cultural senses of 'place' to develop context-specific approaches to sustainable development (Pollock, 2004). "The flexibility to develop 'place-based' arrangements (rather than follow a prescribed format) has been viewed favourably at local levels since it allows for change and re-organization as local circumstances change" (Francis, 2004: 10).

Biosphere reserves capture the particular history and cultural values that are embedded in places. The distinctive landforms and diverse topography of biosphere reserves seems to invoke a strong sense of place and attachment for many residents and regular visitors; and the integration of human uses with high quality attractive surroundings helps foster an ethic and motivation for stewardship commitments (Francis et al., 2004). In some cases, when a particular landscape, ecosystem, community identity or livelihood, is somehow threatened, a personal and collective latent sense of place may be activated, as Whitelaw (2006) found in his study of two distinct landscapes in Ontario (the Niagara Escarpment and the Oak Ridges Moraine).

At the international level, it is recognized that biosphere reserves must develop strategies for sustainable development that are most appropriate to their local context. Indeed, one of the four goals proposed for the *Madrid Action Plan (2008-2013)* is to:

> Enable the active use of places included in the WNBR as learning platforms and "laboratories" for sustainable development; i.e. demonstrating approaches to enhance cooperation… to address and solve *context specific problems* to improve environmental, economic and social conditions for human and ecosystem well-being (Draft 10/XII/07 of the Madrid Action Plan: 2, emphasis added).

However, sustainability also requires governance mechanisms are needed that address complex issues that cross scales. Berkes and Folke (1998: 432) find that although local-level (place-based) institutions are more adaptive and responsive to environmental feedbacks than are centralized agencies for resource management, most environmental issues are cross-scale and therefore, "…problems must be tackled simultaneously at several levels." They propose the redistribution of power from central agencies – not their elimination – and a co-management system of institutions at nested scales. These authors make a strong case for place-based, multi-stakeholder and cross-scale collaboration that is similarly reflected in the biosphere reserve model.

7. Governance Networks

Networks have been widely recognized by both scholars and practitioners as an important form of inter-organizational governance. Networks are comprised of independent and autonomous organizations and are essentially collaborative endeavours. UNESCO biosphere reserves in Canada are commonly organized into networks and also emerge as lead organizations to facilitate or govern networks for sustainability. Networks are a popular metaphor that has spread throughout the social sciences (Klijn, 1996).

Once common goals are established, then network governance is often the resulting pattern of interaction. Governance networks create new inter-organizational domains (spheres) for

legitimate, non-coercive, horizontal negotiation. The institutional framework (or the rules of engagement) is not fixed but evolves through negotiation. Governance networks typically account for and operate across multiple levels and scales. They:

i. Link independent and autonomous organizations;
ii. Establish common goals, collective action, inter-dependent outcomes;
iii. Share responsibility and accountability;
iv. Require and generate trust among individuals and organizations;
v. Produce inter-organizational domains for negotiation;
vi. Use flexible and adaptive institutional 'rules'; and,
vii. Operate and influence across levels and scales.

From a systems perspective, collaborative governance is frequently expressed as having the structure and dynamics of a network. Early on, Emery and Trist (1965) proposed that the appropriate organizational structure for turbulent organizational fields (fields characterized by complexity, uncertainty, and multiple interconnections between component systems) was not a single hierarchical organization. They put forward the case that an "inter-organizational domain, held together by shared values, is the most appropriate organizational form" because "social order is negotiated between the stakeholders rather than imposed at the outset" (Benn and Onyx, 2005: 88). Many analysts agree. For example, Paquet (2005) elaborates on essentially the same idea in describing what he calls 'distributed governance', as does Barraket (2005:83) in reference to 'coalition governance.'

From Rhodes' review of the literature, he crafts his own widely-cited definition of governance as self-organizing, inter-organizational networks. To him, the four characteristics of network governance are: (1) interdependence between organizations, state and non-state actors; (2) continuing interactions between network members to exchange resources and negotiate goals; (3) game-like interactions rooted in trust and regulated by agreed-upon rules; and (4) significant autonomy from the state (Rhodes, 1996:660). In other words, self-organizing networks may involve or negotiate with government, but are not accountable to the state.

While networks may contribute to "governance without government," many individual network members, such as non-governmental organizations, rely on state policies (e.g., for charitable status) or direct state funding. It can be argued that sustainable development requires regulations, incentives, and enforcement by the state to a certain degree to change or 'flip' unsustainable norms and behaviours within all three spheres of market, civil society and state. Within collaborative networks, responsibility and accountability is shared.

Jessop (1997: 575) says that governance is "the complex art of steering multiple agencies, institutions and systems which are both operationally autonomous from one another and structurally coupled through various forms of reciprocal interdependence." This definition highlights the structural relationships ("micro-macro processes" noted above) that exist between market, state and civil society forms of governance and their hybrids. At a still broader level, metagovernance refers to the overall institutional system of rules that govern the distribution of power, authority, and responsibilities among the components of the three sectors. It "involves managing the complexity, plurality, and tangled hierarchies found in prevailing modes of coordination" (Jessop, 2002: 6).

The prospect of managing complexity in biosphere reserves is quite daunting. As noted above, it is important to assess the current institutional or governance 'layers' and 'players' in sustainable development across multiple scales. Further work is required to track progress (or regression) in sustainability practices. As Francis (2004: 25) explains:

> …a biosphere reserve organization has two major roles. One is to serve as facilitator and partner, providing both a forum and a helping hand for groups to join together to discuss and understand conservation and sustainability issues of mutual concern, and then deal with them as best they can. The other is to keep abreast of all that is happening in a biosphere reserve and report on this from time to time to all who live there and to anyone else that may be interested. In general, Canadian biosphere reserves are quite involved with the first role, but (as periodic reviews indicated) have not yet taken up the latter to the extent communities would generally welcome. No one else does this. It is a special niche for a biosphere reserve group, and a demanding one.

Biosphere reserves must navigate and influence the governance layers and players around them; they do this through the formation of both formal and informal governance networks. Networks structure the process of governing through network creation and decentralized, collective decision-making. Features that characterize governance networks are their ability to link independent and autonomous actors (organizations) into some collective endeavour. Networks are greater than the sum of their parts, since they produce outcomes that could not normally be achieved by individual organizations acting independently. Within collaborative networks, responsibility and accountability is shared and networks both demand and generate trust to function effectively.

In theory, network participants must have a stake at the issues at hand and have resources and competencies to contribute to the group. Although they may be dependent on one another to 'get things done' they are operationally autonomous in the sense that they act independently. While some actors can be stronger and more central than other actors (e.g., lead organizations or central nodes), the relations within the network are characterized by exchange rather than commands. Trust among network members and consensus on goals are two of the primary factors that bind networks together (Provan and Kenis, 2007).

Ultimately, network effectiveness is the attainment of network-level outcomes that could not normally be achieved by individual organizations acting independently. In the case of governance for sustainability, such outcomes might include: strengthened community capacity to solve social and environmental problems; improved access and integration of critical services to vulnerable populations; enhanced regional economic development; and adaptive responses to changing economic or environmental conditions.

Biosphere reserves seek to integrate conservation of biodiversity with sustainable development while building social and institutional capacity for viable livelihoods, robust economies, and healthy communities. Network governance brings the necessary 'layers' and 'players' for sustainability together through negotiation and collective decision-making. Thus, governance networks are an especially apt description of how biosphere reserves contribute to governance by bridging multiple organizations under an umbrella of shared goals, resources and knowledge.

8. Network Governance

As the literature suggests, managing networks or "network governance" is necessary to ensure that network participants engage in collective, and mutually supportive action, that conflict is addressed, and that network resources are acquired and used efficiently and effectively. However, networks do not respond to managers as system controllers (Klijn, 1996). To be effective network managers, biosphere reserves must play a facilitative role; they must seek to build the capacity of their partner organizations rather than seeking to meet their own objectives.

Provan and Kenis (2007) remind us that a network generally takes one of three forms: it may be governed equally by all members (shared governance), or be managed by a lead organization within the network, or be externally managed by a designated network administrator. In the Canadian examples provided above, most of the networks are 'managed' by the local biosphere reserve organization itself, although shared governance is also a common approach, especially in the 'networks of networks' that may be created.

Clearly, governance issues arise at a larger scale beyond particular networks being fostered by the local biosphere reserve group. At the broadest level, metagovernance refers to the overall institutional system of rules that govern the distribution of power, authority, and responsibilities among the components of the three sectors. It "involves managing the complexity, plurality, and tangled hierarchies found in prevailing modes of coordination" (Jessop, 2002: 6). Biosphere reserves are thus challenged to manage higher levels of complexity due to their commitments to sustainability, without an explicit mandate from UNESCO to do so. Although biosphere reserves have no formal power or authority, their perceived neutrality as network facilitators invests them with significant authority as credible and widely representative lead organizations.

To be effective players in governance, however, they must be aware of the current institutional frameworks or governance 'layers' and 'players' that influence sustainable development – both within and outside their immediate sense of place. There is a complex overlay of institutions and organizations in most biosphere reserves, as illustrated in Table X for biosphere reserves in Ontario. Not including numerous international agreements and organizations, federal agencies, quangos, or university affiliations, these four biosphere reserves work with approximately 300 partner organizations.

	Long Point	Niagara Escarpment	Frontenac Arch	Georgian Bay
Provincial Agencies	4	7	4	3
Local Municipalities	3	23	8	6
Regional Districts/Counties	1	7	5	1
Community Organizations	40	67	57	50
Aboriginal Groups	1	4	2	7
Total	50	108	76	67

Table X. Estimated number of stakeholders involved in biosphere reserves in Ontario.

As biosphere reserves transcend immediate local and landscape-level concerns to address more complex multi-level issues, they have greater opportunities to broker collaborative processes that combine local and expert knowledge to inform and influence decision-makers at higher levels of jurisdiction. Some of the biosphere reserve case studies from Ontario suggest that such organizations initiate new governance structures (e.g., networks and coalitions) by facilitating informal collaborative governance processes (e.g., community dialogue, visioning exercises, issue forums, local marketing mechanisms, and numerous types of partnerships). According to new organizational theories, these functions can be described as 'bridging' activities by 'boundary organizations' (Guston, 2001; Hahn et al., 2006).

9. Bridging and Boundary Organizations

A major challenge for organizations working across multiple levels, timeframes or domains is to more effectively create knowledge that is salient, credible and legitimate across disciplinary and sectoral boundaries. Guston (2001) refers to solving this challenge as boundary management and to organizations that explicitly focus on this intermediary function as "boundary organizations." Biosphere reserves qualify as boundary organizations because they often play an intermediary role between different arenas (layers and players) and facilitate the co-production of knowledge.

In Canada, one of the most innovative features of biosphere reserves is the convening, bridging, or open forum they provide for regional stakeholders to address challenging inter-jurisdictional issues that are typically beyond the scope of any one authority. Although some biosphere reserves evolve from small local non-profit groups to broker much broader networks of stakeholders involved in sustainable development, many do not. Their internal governance capacity is constrained by factors such as: social capital (Mendis, 2005), institutional effectiveness (Reed, 2007), and degree of local participation (Stoll-Kleeman, 2007).

As biosphere reserves transcend local and landscape-level concerns to address more complex multi-level issues, they have greater opportunities to broker collaborative processes that combine local and expert knowledge to inform and influence decision-makers. The biosphere reserve model also suggests that such organizations initiate new governance structures (e.g., networks and coalitions) by facilitating informal collaborative governance processes (e.g., community dialogue, visioning exercises, issue forums, local marketing mechanisms, and numerous types of partnerships).

10. Conclusions

Taken together, the themes of citizen engagement, collaborative governance and network governance provide a wealth of opportunities for research and for testing new ideas about governance for sustainability. This review of literature suggests that governance systems are constituted through complex structures and processes and that governance arrangements take on highly diverse forms for different purposes and in different contexts. For democratic legitimacy, citizens and other non-state actors require a meaningful role in governance and may self-organize to steer governance in particular ways. Collaborative governance has emerged as a new mode of governance and one that holds prospects for advancing sustainability in new ways.

Sustainability requires new norms, new institutions, and new development paradigms. New governance institutions need to be able to cross a variety of social and political spheres at different scales. Multilevel or cross-scale governance recognizes the variety of scales at which collective decision-making occurs, and accounts for complex multi-jurisdictional governance problems and the local to global dynamics that influence sustainability. In the context of UNESCO biosphere reserves, these definitions of governance have important implications:

1. Governance requires some degree of civic participation for legitimacy.
2. More complex problems appear to require more sophisticated forms of collaboration.
3. Governance is constituted both through structures and processes, and a mix of both formal and informal institutions, such as governance networks.

Indeed, governance for sustainability must recognize complex socio-ecological systems and create appropriate political frameworks that account for longer time frames, diverse knowledges and social learning in order to enhance the adaptive capacity for resilience of social institutions and ecological systems. Furthermore, governance for sustainable development must adopt a highly interdisciplinary and integrative form, where the principles of sustainability can be advanced as a whole. Lerner (2007) suggests that we "build toward a conceptual framework that locates 'governance for sustainability' in collaborative networks of actors (highly-organized and institutionalized NGOs, various public/private/civil society actors in partnerships, strategic *ad hoc* alliances, etc.) and [examine] how these function on the ground in specific localities."

If sustainability is the main agenda for social change, and complex systems provides the background context for this work, then collaborative governance mechanisms provide the means and the challenge to craft local and cross-scale responses to global pressures. As the UNESCO biosphere programme explains: biosphere reserves are sites which seek to reconcile socio-economic development, and conservation of biodiversity based on local community efforts. They constitute ideal places to test and demonstrate new approaches to sustainable development at a regional scale providing lessons that can be applied elsewhere. It is hoped that the experience of biosphere reserves might illuminate how processes of citizen engagement, network governance, and sustainable development occur on the ground and what types of innovative governance frameworks provide the necessary collaborative framework for advancing sustainable development.

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