

## Commons in a Multi-level World

Fikret Berkes  
University of Manitoba  
Natural Resources Institute  
Winnipeg, Manitoba R3T 2N2  
Canada  
[berkes@cc.umanitoba.ca](mailto:berkes@cc.umanitoba.ca)

Commons research has a history of emphasis on the community level, but community institutions are only one layer in a multi-level world. It is becoming increasingly clear that commons governance necessarily involves a network of interactions at various levels. An increasingly globalized world requires institutions that link the local level to the various higher levels of social and political organization. Such linkages can provide ways to deal with multiple management objectives (Brown et al. 2005) and multiple knowledge systems (Reid et al. 2006); they may result in the creation of networks for learning and joint problem solving (Carlsson and Berkes 2005) and may provide a framework for governance (Kooiman 2003).

Addressing problems of globalization is inevitable because communities are connected to national and global processes more than ever before (Young et al. 2006; Berkes et al. 2006), making them vulnerable to pressures and incentives that originate at other levels of social, political and economic organization. Communities respond to various outside pressures; these influences and the linkages between communities and other levels of political organization need to be studied and understood.

Such understanding requires attention to scale. There is a developing literature about scale and interplay of institutions across scale, indicating that institutional linkages and multi-level governance systems are important for a variety of reasons, both practical and analytical (Lebel et al. 2005; Adger et al. 2006). Consistent with Cash et al. (2006), scale is defined as the spatial, temporal or other dimension used to measure or study a phenomenon, and level as the unit of analysis located at different positions on a scale. Following the terminology of Young (2002), institutional interplay at various levels involves institutions that may interact horizontally (across the same level) and/or vertically (across levels of organization). Commons management needs to take account of such institutional linkages, the multiple levels of organization that

impact and shape institutions at the local level, and external influences or drivers. In this sense, a driver is any natural or human-induced factor that directly or indirectly causes a change in an ecosystem (Millennium Ecosystem Assessment 2003).

The consideration of these various factors and interactions moves the study of commons into the realm of complex adaptive systems. Following Levin (1999, p. 231) complexity may be defined as an interconnected network of components that cannot be described by a few rules; generally manifest in structure, order and function emerging from the interactions among diverse parts. Commons management, as a complex systems problem, should employ the tools and approaches appropriate for dealing with complexity. In addition to scale, self-organization is important, as it provides a unifying principle for complex adaptive systems (Levin 1999). In the case of commons, an area of primary interest is the way in which collective action originates and gets organized, the partnerships that emerge, and the horizontal and vertical linkages that come into being. Especially important here for the multi-level world are questions with regard to linking, and the effectiveness of NGOs and other groups that have a role in bridging scales (Cash and Moser 2000).

These considerations can serve to extend and elaborate commons theory, and they are not completely new in the literature. Ostrom's (1990) classic example of the Spanish huerta irrigation system, with its nested irrigation canals (small canals, larger canals, ... river basin), is an example of the use of the scale approach in examining a complex system. Similarly, Lansing's (1991) analysis of the Balinese water temples, with rice irrigation canals and temple-based institutions, is a superb example of the use of complex system thinking. Recent treatments of commons theory have been addressing the issue of scale with increasing sophistication (Ostrom et al. 2002; Berkes et al. 2003; Ostrom 2005). For example, complex systems theory holds that the levels in a hierarchy are linked but that each level requires new concepts and principles. Thus, processes at the community, regional, and international levels require different but overlapping set of concepts and principles; this is beginning to be reflected in the commons literature (Dietz et al. 2003).

Despite these developments, many commons researchers do not deal with scale or other aspects of complexity in a systematic way. To do so does not require a change in commons basics. Commons share two characteristics: (a) exclusion or the control of access of potential users is difficult, and (b) each user is capable of subtracting from the welfare of all others. These are the exclusion problem and the subtractability problem, respectively (Ostrom 1990; Feeny et al. 1990; Ostrom 2005). The exclusion issue is important because commons management is more likely to work if the users enjoy exclusive rights to the resource and have a stake in conserving the resource. The subtractability question is important because commons management proceeds by building on existing rules-in-use, many

of them at the local level. These local level rules are necessary but insufficient to deal with commons management in a multi-level world.

In an effort to explore these issues in more depth, we organized a three-panel session, 'Community-based conservation in a multi-level world', at the Biennial Conference of the International Association for the Study of Commons (IASC), held in Bali, Indonesia, June 2006. Our objectives were to investigate partnerships, networks, and cross-scale institutional linkages in conservation and resource management, using a grassroots perspective, while taking into account multi-level governance. We included both conceptual and case study papers (and those combining the two), providing examples from a range of geographical areas and resource types, and using interdisciplinary perspectives, in keeping with IASC practice.

The first paper by Derek Armitage (*Governance and the commons in a multi-level world*) aims to integrate insights from commons theory, resilience thinking and political ecology. Starting with the recognition that governance of the commons is a complex systems problem, Armitage searches for complementarities in these three areas to find a common ground to deal with governance issues in a multi-level world in which resilience, transformations, learning, and adaptation are often necessary. Resilience approaches provide a constant reminder to keep system dynamics in the forefront of analysis. Complementing commons and resilience scholarship with political ecology helps establish the importance of context and power relationships, further emphasizing the necessity of interdisciplinary approaches.

The second paper by Lars Carlsson and Annica Sandström examines *Network governance of the commons*. Starting with the premise that building institutions is a matter of trial and error, and the idea that co-management is network governance, Carlsson and Sandstrom proceed to add social network analysis to co-management, and examine the kind of structural features that might improve co-management performance. The resulting approach provides insights on why top-down governance is often not adequate to deal with the complexities of resource management. The authors suggest that incorporating social network analysis and attention to social capital will further this line of thought in commons governance. Does the adoption of a network perspective on governance eliminate the role of the state? Not at all, say Carlsson and Sandström, because the different 'faces' of the state are important actors in various policy processes.

The third paper by Martha Dowsley (*Developing multi-level institutions from top-down ancestors*) takes an international agreement (Agreement for the Conservation of Polar Bears and their Habitat), throws in real or perceived crises (originally over-hunting and now climate change), and adds to this the international politics of five polar nations (USA, Russia, Canada, Norway, Denmark/Greenland). And then asks the question: can a multi-level regime evolve from a top-down ancestor (the Agreement)? The answer, as Dowsley shows, is mixed.

The Agreement is a barrier to addressing multiple objectives and local needs. Dowsley approaches the issue with knowledge of the local level (Inuit community organizations in Nunavut, Canada), and finds that vertical linkages are typically poor. Nevertheless, she finds some evidence that the iterative processes of resource management have been creating some space for a multi-level regime.

The fourth paper by Graham Marshall (*Nesting, subsidiarity and community-based environmental governance beyond the local scale*) explores the meanings and applications of decentralization. Marshall examines the notions of nesting and subsidiarity (decentralizing a task to the lowest level of governance feasible) and uses the example of Australia's National Conservation Strategy. His conclusions based on more than two decades of experience in Australia are of general interest. Under the 'regional delivery model', the government has decentralized progressively greater powers to the community level, but the key decisions in environmental governance remain centralized. The resulting partnerships between government and the community level have remained largely as 'purchaser-provider' relationships, rather than the original vision of collaborative partnerships among equals.

The fifth paper by Cristiana Simão Seixas and Brian Davy examines *Self-organization in integrated conservation and development initiatives*. It uses examples from the UNDP Equator Initiative program that aim to learn from apparently successful cases of integrating biodiversity conservation with poverty alleviation in the tropical developing world. Seixas and Davy use a variety of sources of information and find that trigger events are important in self-organization, and catalytic elements include key players and leadership, seed funding, and partnerships and networks that deliver a variety of needs in building capacity. Seixas and Davy suggest that there is no one set 'recipe' but a variety of possible 'ingredients' and 'cooking approaches' that can result in successful conservation-development initiatives evolving opportunistically in a multi-level world.

The sixth paper by Louis Lebel, Rajesh Daniel, Nathan Badenoch, Po Garden, and Masao Imamura is about *Multi-level perspective on conserving with communities: experiences from the upper tributary watersheds in montane mainland Southeast Asia*. Lebel and colleagues build a framework for a multi-scale, multi-level perspective. Pointing out that most attempts at community-based conservation have not worked, Lebel et al. focus on the politics of scale as one explanation. Using upper watershed conservation examples from Southeast Asia, with focus on the hill tribes of northern Thailand, they suggest a scale-sensitive management framework that consists of asking 'who and why' (groups of people); 'what' (the resource); and 'where' (spaces).

This special issue of the International Journal of the Commons considers a variety of conceptual perspectives and lessons from cases to deal with the problems of a multi-level world. In terms of scholarly and practical significance, the special issue aims to contribute to extending and elaborating commons theory; under-

standing the issue of scale and institutional linkages; and understanding multi-level governance of a commons with state, private and civil society actors.

Our collective inquiry shows that the commons literature is well positioned to address issues of multi-level management, and globalization as well – which, according to one definition, refers to the compression of space and time scales, with regards to flows of information, people, goods and services (Young et al. 2006, p. 305). The papers illustrate the explanatory power of scale; what governance experience says about subsidiarity; issues of scaling up and down; and the political importance of the choice of level, as it determines the kind of knowledge brought to bear on issues and the choice of policy instruments. The choice of scale and level is significant for deliberative processes. For example, dealing with biodiversity as a global commons yields different considerations from dealing with biodiversity as a local commons. The papers show that effective action at various levels often depends on tackling the issue by first locating it in space and time.

We are grateful to IASC conference organizers in Indonesia, and to the people who came to the three panels and took part in the lively discussions. Many panel participants contributed to the development of the ideas presented in this special issue, including Emma Caddy, Doris Capistrano, Damian Fernandes, Leslie King, Melissa Marschke, Dianne Rocheleau and Kaleekal Thomson. In the production of this Special Issue, Jacqueline Rittberg acted as the editorial assistant and copy editor. Special thanks go to Erling Berge and Tine De Moor who have been instrumental in launching the International Journal of the Commons. In particular, we thank Erling, a former President of IASC, for articulating a vision for the Journal and putting in the tremendous effort to move it forward.

## Literature cited

- Adger, W.N., K. Brown, and E.L. Tompkins. 2006. The political economy of cross-scale networks in resource co-management. *Ecology and Society* 10(2):9. <http://www.ecologyandsociety.org/vol10/iss2/art9/>.
- Berkes, F., J. Colding, and C. Folke, eds. 2003. *Navigating Social-Ecological Systems: Building Resilience for Complexity and Change*. Cambridge: Cambridge University Press.
- Berkes, F., T.P. Hughes, R.S. Steneck, J.A. Wilson, D.R. Bellwood, B. Crona, C. Folke, L.H. Gunderson, H.M. Leslie, J. Norberg, M. Nystrom, P. Olsson, H. Osterblom, M. Scheffer, B. Worm. 2006. Globalization, roving bandits and marine resources. *Science* 311:1557-1558.
- Brown, K., J. Mackensen, S. Rosendo et al. 2005. Integrated responses. In *Ecosystems and Human Well-Being: Policy Responses*, Volume 3:425-465. Washington, DC: Millennium Assessment and Island Press.
- Carlsson, L. and F. Berkes. 2005. Co-management: Concepts and methodological implications. *Journal of Environmental Management* 75:65-76.

- Cash, D.W. and Moser, S.C. 2000. Linking global and local scales: designing dynamic assessment and management processes. *Global Environmental Change* 10:109-120.
- Cash, D.W., W.N. Adger, F. Berkes et al. 2006. Scale and cross-scale dynamics: governance and information in a multilevel world. *Ecology and Society* 11(2): 8. <http://www.ecologyandsociety.org/vol11/iss2/art8/> .
- Dietz, T., Ostrom, E., and P. Stern 2003. The struggle to govern the commons. *Science* 302: 1907-1912.
- Feeny, D., F. Berkes, B.J. McCay, and J.M. Acheson. 1990. The tragedy of the commons: Twenty-two years later. *Human Ecology* 18:1-19.
- Kooiman, J. 2003. *Governing as Governance*. London: Sage.
- Lansing, J.S. 1991. *Priests and Programmers*. Princeton, NJ: Princeton University Press.
- Lebel, L., P. Garden, and M. Imamura. 2005. The politics of scale, position, and place in the governance of water resources in the Mekong region. *Ecology and Society* 10(2):18. <http://www.ecologyandsociety.org/vol10/iss2/art18/> .
- Levin, S.A. 1999. *Fragile Dominion: Complexity and the Commons*. Reading, MA: Perseus Books.
- Millennium Ecosystem Assessment. 2003. *Ecosystems and Human Well-Being: A Framework for Assessment*. Washington, DC: World Resources Institute/ Island Press.
- Ostrom, E. 1990. *Governing the Commons. The Evolution of Institutions for Collective Action*. Cambridge: Cambridge University Press.
- Ostrom, E. 2005. *Understanding Institutional Diversity*. Princeton, NJ: Princeton University Press.
- Ostrom, E., T. Dietz, N. Dolsak, P.C. Stern, S. Stonich, and E.U. Weber, eds. 2002. *The Drama of the Commons*. Washington, DC: National Academy Press.
- Reid, W.V., F. Berkes, T. Wilbanks, and D. Capistrano, eds. 2006. *Bridging Scales and Knowledge Systems: Linking Global Science and Local Knowledge in Assessments*. Washington, DC: Millennium Ecosystem Assessment and Island Press.
- Young, O. 2002. *The Institutional Dimensions of Environmental Change: Fit, Interplay and Scale*. Cambridge, MA: MIT Press.
- Young, O.R., F. Berkhout, G.C. Gallopin, M.A. Janssen, E. Ostrom, and S. van der Leeuw. 2006. The globalization of socio-ecological systems: an agenda for scientific research. *Global Environmental Change* 16: 304-316.