

CHAPTER 17

A COMPARATIVE ANALYSIS OF THREE MODES OF COLLABORATIVE LEARNING IN FISHERIES GOVERNANCE: HIERARCHY, NETWORKS AND COMMUNITY

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Abstract

This chapter discusses three different ways of using collaborative learning in fisheries governance, all of which have been applied in the Coasts Under Stress (CUS) project in Canada. The three modes are: hierarchy; networks; and community. The hierarchical mode entails top-down computer modelling techniques, in which the experiential knowledge that is gathered from fishers' haul data is integrated with scientists' survey data into management plans. The networks mode entails developing an understanding of complex marine ecosystems by sharing knowledge between individuals and groups interacting in discussions about ecosystem structures and recovery strategies. The community mode entails the involvement of local communities in knowledge sharing. Our finding is that, in whatever mode it occurs, collaborative learning is of inestimable value in improving fisheries governance, especially by removing mutual misunderstandings. But techniques of collaborative learning cost time and money, and governments must be willing to devote the necessary resources to make them work.

17.1 Introduction

This chapter begins with an assumption that we have a duty to govern our interactions with social-ecological systems in a responsible fashion, but that we have failed to carry out this duty in recent years, partly because we have been using inadequate modes of governance. In particular, we have not fully recognised the complexity of the marine ecosystem, or the vital contribution to our understanding of this complexity that can be made by experiential knowledge. Indeed, the complexity of the ecosystem requires a correspondingly complex governance response. Governance of social-ecological systems today involves networks of interdependent public, private and non-government interests planning and making decisions at scales ranging from the local to the global in an "emerging multi-level governance regime" (Environment Canada 1999; Phillips and Orsini 2002).

Such improved governance for sustainable development requires improved systems for **managing knowledge** in the face of complexity, uncertainty and serious knowledge gaps that exist even in the midst of our 'information age' (Bouder 2002). Gaps and challenges in knowledge management are particularly apparent in the marine and coastal environment (Wolfe 2000). The Coasts Under Stress (CUS) project drew together over seventy investigators to generate knowledge of coastal social-ecological systems. Specifically, the research was designed to identify the complex non-linear interactions

between social and environmental restructuring, as that operated across scales to affect the health and resilience of social-ecological systems (Murray *et al* this volume). CUS, itself an experiment in knowledge governance, was organised not around a central hypothesis with Cartesian partitioning into discrete subcomponents, but around one meta-concern (healthy social-ecological systems) in which various aspects of system well-being were first examined relatively distinctly and then integrated as the pathways between them were identified. Using the logo of a seastar, which mirrors the approach, one 'arm', for example, sought to understand how different kinds of **knowledge** (local and formally scientific) about ecosystem dynamics help to influence decision-making, which in turn affects human and environmental health. In this chapter, we discuss the creation and dissemination of knowledge relative to the dimensions of space and time using three CUS case study examples, one conceptual and two applied, to understand how cross-scale knowledge movements contribute to evolving forms of collaborative, adaptive multi-scale governance, necessary to the creation and maintenance of resilient socio-ecological systems.

17.2 The importance of scale

An important feature of improved fisheries governance lies in the scale of what we might call our 'home place' or 'community', to which we feel a sense of belonging and relatedness. In CUS we have found through the examination of wetlands stewardship programmes, for example, that there are very different interpretations of the notion of 'stewardship' across interests and scales (McLaren *et al* forthcoming). Stewardship ties in with the geographer's concept of *genre de vie* or **lifeworld**. Environmental aspects of the lifeworld include "sense of place, social space, time-space rhythms, and the lived dialectic between home and horizon" (Buttimer in Seamon 2004:1), and the term **landscape** used by cultural geographers when referring to relations between the natural environment and human society (Rose 1993). Much more complex than a space that can be indicated by a boundary on a map, landscape is both a home and a site of struggle, both "embedded in place and constructed and reconstructed by forces larger than itself", a complex, unstable material, and at the same time an ideological entity (Mitchell 2001:271; cf Lippard 1997). Thus the notion of clearly defining boundaries of 'community' in either time or space for purposes of governance is problematic. This is particularly true for First Nations, where the concept of boundary gives way to that of a functioning interlinked social-ecological cultural-spatial system whose limits cannot therefore easily translate to a boundary line drawn on a map.

Mitchell (2001) speaks of the **politics** of scale, using the example of how relation to place is packaged and sold to meet the needs of industries, such as tourism, which compete for access to space and resources with traditional activities (such as logging or fishing) that are very much a part of this original sense of identity. We found many of these ideological and material struggles over locality in our CUS research areas on both the east and west coasts of Canada. Other struggles over scale included debates about whether fisheries decision-making should take place at the local or regional, provincial, national or even international scale. For example, should cod fisheries be managed by individual bay, province, nation and/or internationally? Mitchell (2001) argues that any space is at once both local and global. CUS research (Vodden 2004; Ommer *et al*