

STRIVING
FOR ENVIRONMENTAL
SUSTAINABILITY IN
A COMPLEX WORLD
CANADIAN EXPERIENCES

George Francis



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Introduction

The long-term sustainability of human societies throughout the world has become the subject of increasing anxieties. Disputes about what should be done have intensified, as the quickening tempo of change has been widely experienced in local communities as well as at national and global levels. Strategies to deal with these sustainability issues, other than denial of them, have ranged from the limits-to-growth arguments of the 1970s to the sustainable development initiatives since the 1980s and to some more current debates about how to restructure the fundamentals of national and global economies for a decent future.

Debates now also include a widespread and often dominant sense of urgency about the need to apply new and emerging advanced technologies to create innovative knowledge-based societies that can compete successfully in the fiercely competitive new world order. Underlying all of these concerns are different mixes of cultural assumptions about people, fundamental values, know-how, organizational capacities, history, the natural world we are in, and how best to govern in order to bring about desirable forms of sustainability. A result is that diverse, competing, and contradictory goals and actions to realize them are on display. What they have in common is a need to grapple with an increasingly complex world. Complexity is best understood as sets of interrelated systems within systems that function across a broad range of space and time scales.

At the inception of the research discussed in this book, there were many examples of similar concerns being acted upon in large landscape regions and in smaller communities all across Canada. It was clear that much could be learned from tracing various situations in Canada over a number of years. The ensuing research and analysis revealed patterns of completely unpredictable and unexpected results, some of which were associated with novel and transformative changes.

Canadian organizations and individuals have been involved with these issues in recent years. Some have contributed to the theorizing about them, but many others just rolled up their sleeves and dealt with what they saw as practical ways to proceed under the circumstances they were in. Some had been engaged in these activities for years. It seemed obvious that much could be learned from what *they* had learned.

This book is a result from that set of assumptions. There were basic questions about what specifically should be looked into, how, and why. Of particular interest to people who participated in the work reported here was the management of renewable natural resources. Reports from around the world testified to the usefulness of viewing these resources as social-ecological systems that were inherently complex. That meant that their emergent properties arose from a multitude of factors interacting together. Management in such situations often required learning by doing, and reflecting on the outcomes. For inquiries reported in this book, it also implied finding out from people elsewhere in the world. What had they learned in much the same ways from working within similar situations?

In Canada, the particular situations of interest were two major kinds of landscape regions that had been designated as special places for learning how to manage renewable resources to help attain desirable forms of sustainability, defined generally as a future that respected socioeconomic well-being, the need for protecting environmental values of interest, and social justice for people living in these regions. Thus, the interest in biosphere reserves and model forests. However, these were not the only initiatives for building better communities. For some comparisons, note was also made of some twenty other “aspirational communities” of various kinds. Hence, the inquiries reported in the book delved into questions about how these various initiatives originated, what kinds of outcomes those responsible for them strived to achieve, how they went about this over periods ranging up to twenty-five years or so in the major cases (decent sustainability can’t be expected to come quickly), and what were their major

accomplishments. Given that the world is changing more quickly than ever, what do they plan to do next? It was generally expected that some of these examples were working well; others, not quite so well – and some may have been disappointments to those who were so devoted to making them succeed. In fact, many went through periods with these ups and downs.

The book then has accounts of these journeys into (hopefully) better futures than what otherwise could happen. The purpose of the book is not to criticize what was being done, but rather to learn from the experience, and for whoever may be interested, to help them learn too.

The forms of complexity thinking that guided inquiries reported in this book are introduced in Chapter 1. In Canada, there is a lengthy history of collaborative studies for regions defined by watersheds and river basins, as well as for rural regions whose viability may be threatened by demographic changes along with the adoption of large-scale industrial agricultural practices that supplant family-farm traditions and their associated rural villages. This book is focused on two other kinds of landscape regions that have had less academic attention, though that may be changing. These are biosphere reserves and model forests, both of which were developed and recognized nationally and internationally to demonstrate innovative ways to promote sustainable resource management. Chapter 2 describes how they came about, how they were organized, what they set out to do, and the experiences they had in trying to make their innovative approaches work in the social-ecological systems they were in. The book summarizes the main activities undertaken by members of the Canadian Biosphere Reserves Association and the Canadian Model Forest Network. It interprets the responses to the complexity phenomena being encountered at the time and notes strategies adopted to deal with such situations.

Governance issues are essential for understanding how people associated with biosphere reserves and model forests strived to steer their way toward desirable forms of sustainable management. Like most other countries, Canada has experienced the reorganization of major roles and responsibilities among different jurisdictional levels of government, the expanding dominance of private-sector organizations, and various public responses from increasing numbers of civil society organizations, especially over the past several decades or so. The issues in Canada are similar in many ways to those of other countries dominated by European or Anglo-Saxon cultural traditions, ethnic groups and their descendants, and governing structures with distinct jurisdictional levels of authority.

Chapter 3 summarizes five conceptual or practical themes of governance: (1) *political modernization* by countries associated with the current stage of market capitalism; (2) the major roles played by *networks* of individuals and different kinds of organizations; (3) the emergence of *actor coalitions* that often struggle for commanding influence over major socioeconomic sectors; (4) the concept of *common property* and values widely held by people who view a particular territory as being “their place”; and (5) *meta-governance* or the governance of governance that sometimes requires governments to change fundamental rules for governing because of difficult and sometimes urgent circumstances.

Work for this book led to four extensive case studies that were essential for understanding how complexity can unfold over several years and direct what had to be done. Thus, Chapter 3 also describes the evolving polycentricity in the governance for the Waterton Front Range and the Southwest Rockies in Alberta during the period 1982–2015; the British Columbia Land Use Decision in 1993 that addressed the massive social unrest building up in Clayoquot Sound, on Vancouver Island – this and a broad range of earlier issues are now (two decades later) resolved, though apprehensions remain about what might happen next; the Peace of the Braves – the Agreement Concerning a New Relationship between the Quebec Government and the Crees of Quebec, reached in 2002 after five years of growing turmoil; and the *R v. Marshall* Supreme Court decision in 1999 that clarified Mi’kmaq treaty rights, particularly in New Brunswick and Nova Scotia but in other Mi’kmaq communities as well, and the response to this in the Bras d’Or Lake region of Cape Breton in Nova Scotia.

The Waterton front-range initiatives were directly associated with the Waterton Biosphere Reserve, especially during the earlier years. On Vancouver Island, the Clayoquot Sound Biosphere Reserve and Clayoquot Sound Forest Community are working together and with the Nuu-chah-nulth First Nations toward acceptable solutions based on Ecotrust Canada’s principles for creating a conservation economy. The Quebec decision was associated with the Waswanipi Cree Model Forest. As it turned out, the Mi’kmaq court decision impacted favourably by stimulating extensive collaboration co-led by the Mi’kmaq’s Unama’ki Institute of Natural Resources in Eskasoni First Nation and the federal Department of Fisheries and Oceans, based in Dartmouth – this also led to the creation of the Bras d’Or Lake Biosphere Reserve. As many people have observed over the years, governance matters.

Complex social-ecological systems have to maintain the flexibility to adapt to changing circumstances, and this is where innovations in some form may be necessary or opportune. Chapter 4 discusses changing circumstances associated with globalization. The call for innovations has become a widespread mantra, especially from the market sectors of the economy, which don't speak with one voice. This chapter is a scan of the range and scope of innovation issues being discussed in influential international circles. It soon became apparent that three major themes were unfolding about innovation: technological, environmental, and social, with limited cross-references among them.

The Organisation for Economic Co-operation and Development and its thirty-four member states, including Canada, formulated arguments that technological developments are necessary for countries to compete successfully in the new knowledge-based economies. The groundwork for this began about forty years ago but matured during the late 1980s and through the 1990s. Chapter 4 reviews the recent origins of these innovation debates and provides an overview of the situation in Canada. Given that Canada is a federalism spanning the continent, the federal government took the lead in establishing sets of cluster formations, mainly in urban regions to start with. The composition of the clusters has been a matter of great debate, but the general idea was to associate basic and applied research institutions closely with business organizations that can bring good ideas from research into practice and build corporate capabilities to grow them into major players in the new knowledge-based economy.

Eco-innovations and social innovations are also summarized in Chapter 4. The former includes discourses about developing clean efficient technologies, promoting wide-ranging recycling of usable materials, creating industrial parks, and recognizing eco-business zones. A parallel discourse concerns ecological understanding as a necessary basis for environmental sustainability, and especially for the restoration of badly abused ecosystems that could still provide nonmaterial human values. Social innovations are often necessary to attain the economic and environmental ideals, as well as to address major social justice problems associated with new economic prosperity in a relentlessly competitive world.

We then return to the question of how the biosphere reserves and model forests have recognized and responded to innovative thinking about the commitments they were expected to take on. Conceptually, it can be argued they both were definitely innovative concepts in their day. Are they still? For

example, have they been looking ahead to changes coming their way, or looking back to restoring what they once had and valued, or trying to do some of both?

Chapter 5 reviews strategies adopted for the landscape regions with reference to the main functions the biosphere reserves and model forests were expected to perform. The biosphere reserves and model forests have exhibited resilience and adaptive capacity, and also initiated local innovations in the sense of doing new things in new ways for the situations they were in. But it may be too soon to judge. Much depends on what happens in the years ahead; only then can we look back to note in retrospect what seemed to have set things off on worthwhile and productive paths that became institutionalized. Future global geopolitics may well be the decider for these questions.

Although these landscape regions were a significant and important set of sustainability initiatives, they were certainly not the only ones underway in Canada. Many other initiatives are too, often in cooperation with people in other countries who are striving to create more decent, environmentally sustainable, and productive ways of living. They don't have to occupy large territories as some landscape examples do (though some may be as large as an urban regional economy). Instead, they can be as small as rural cooperatives or urban neighbourhoods. The foci of interest was the ways these "aspirational communities" were striving to better their circumstances, how they were organizing themselves to achieve this, and how they handled the similar governance issues that we all share by being citizens of the same country. This working together implies a sense of community and shared aspirations of what they want to accomplish.

Chapter 6 describes these communities, which usually identify themselves by adjectives they adopt to identify their commitments. The aspirational communities active in Canada as of 2015, including biosphere reserves and model forests, can be listed in alphabetical order of the adjectives they adopted: *age-friendly, biosphere, blue green, compassionate, creative, eco, fire-smart, forest, green, healthy, human rights, inclusive, intelligent, learning, livable, resilient, safe, smart growth, strengthened, sustainable, transition, vibrant, and youth-friendly*. Some communities have obtained more than one such designation of recognition. Most use several terms to describe what they are attempting to do, in addition to the above terms such as *capable, caring, planning, secure, and vital*.

Some key adjectives are of wider inherent scope than others, and the ways in which groups in different communities interpret them varies as well.

There seems to be little need to engage in semantic debates over definitions of adjectives. But these initiatives do suggest that many people in Canada share broadly similar commitments to achieve desirable forms of sustainability in their particular configurations of a complex world. We can take comfort in that.

Chapter 7 asks, *So where next?* Given that the future is by definition unknown, and complexity perspectives generate deep insights into the extent of these uncertainties, it may seem reasonable just to declare *Who knows?* or propose a set of personal ideals and let it go at that. A more prospective approach notes different scenarios based on what the organizations discussed in this book are already promoting, following, or considering. Some, including biosphere reserves and model forests, have expanded their scope, capacity, and organizational support. Green communities, healthy communities, and transition communities have attracted much interest. These might be models for others to consider.

The forest communities have had to adapt to major transformations underway in their economic sector – or as the Forest Products Association of Canada puts it, the forest sectors must reinvent themselves for the twenty-first century. Sometimes it may be a matter of rescaling and reframing the issues to be addressed – numerous interesting examples are associated with the use and conservation of boreal forests in Canada. The forest sector is likely not the only socioeconomic sector that will have to do this, as the Canadian innovation system recognizes. Some urban communities have evolved attitudes and capacities that exhibit a propensity to innovate by encouraging new ideas and asking *Why not?* instead of automatically rejecting them because of some notion of their established traditions. Innovations then beget more innovative ideas.

Of particular interest is the association of some groups with more substantive social movements. For example, there is renewed and growing interest in the concept of a steady-state economy based on the limits-to-growth debates in the early 1970s. It also links with the “degrowth” strategies that have developed rather quickly in Europe and to some extent in Canada, especially to the point that their set of creative strategies for socioeconomic change and adaptation in itself seems to be growing. There is widespread interest in the need to reform the prevailing financial systems and also to introduce different forms of basic incomes to reduce gross inequalities in existing national economies. It can be argued that much of this is not new, but some of it may well be close to innovations whose time has come. Chapter 7 discusses these in more detail, noting initiatives underway

in Canada but usually with links to initiatives in other, somewhat similar countries where people are trying to do much the same.

There are also questions relating to how best to organize desirable sustainable initiatives in an integrated way across scales. Examples of this include the Dutch Research Institute for Transitions at Erasmus University in Rotterdam, and the Social, Technological and Environmental Pathways to Sustainability Centre at the University of Sussex.

Based on the work reported above, the complexity interpretations used for narratives in this book were examined for more recent theoretical or operational elaborations. They are summarized in Chapter 8. Complexity thinking itself has become more complex. Ten examples are given. Although this chapter then leaves the narratives for this book, it points to major developments that are reconfiguring the global context in which the search for desirable forms of sustainability for humans and other living things will be continued by current and near-future generations.

The return to the global is exemplified by the outcomes of the Rio+20 conference in Rio de Janeiro in June 2012 (discussed in Chapter 4). The follow-up to Rio+20 entailed many international consultations and working group meetings with the UN and other international organizations. In September 2015, these resulted in a completely unprecedented set of events that occurred at the United Nations in New York. Over nine thousand participants, including 136 heads of state and governments, ministers, and representatives of business leaders and civil society, attended the UN Sustainable Development Summit. After extensive discussions over several days, they approved the proposed set of 17 goals and 169 targets for the post-2015 global sustainability agenda. The general principles for these universal commitments were to “promote peace and security, democratic governance, the rule of law, gender equality and human rights for all” (IISD Reporting Services 2015). Provisions had also been made for the UN Statistical Commission to provide quantitative indicators for each target. The UN secretary-general had arranged consultations on issues related to creating a solid financing framework. Ongoing evaluations of progress are carried out by the secretary-general’s High-Level Panel on Global Sustainability, which serves as a political forum for people and planet.

Clearly, with this major global-scale framework, success in achieving it will also be critically dependent on a rich variety of local as well as national scale actions. In Canada as elsewhere, this new world order will entail a continuation of the kinds of initiatives described in this book, but with new

technologies, including information- and communication-technologies capabilities for social networking and networking among various institutions. Learning from the past several decades through the narratives in this book might forewarn and also assist the current and new generations in their seeking desirable forms of sustainability in an increasingly complex world.