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Monograph

Next generation environmental assessment for Canada: basic principles and components of generic design

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Note to readers:
This monograph has been prepared as the major summary product of an SSHRC-funded research project. A shorter version, focused on the key components of next generation environmental assessment, was presented and discussed at the *Journal of Environmental Law and Practice*'s 5th Biennial Conference, "'Après…le Déluge': Future Directions for Environmental Law and Policy in Canada," Calgary and Kananaskis, Alberta, Canada, June 5 – 7, 2015, and published with revisions as Robert B. Gibson, Meinhard Doelle, and A. John Sinclair, "Fulfilling the promise: basic components of next generation environmental assessment," *Journal of Environmental Law and Practice* 27 (2016), pp.251-276.

The focus of the JELP paper is the "basic components of next generation environmental assessment" included in pages 63-84 of this monograph. The earlier sections here set out the broad context and the background of Canadian experience with environmental assessment law, policy and practice so far. Those sections clarify the grounds upon which the next generation assessment components and overall regime characteristics are founded.

While the present version of the monograph is complete, it is only final for the time being. We expect environmental assessment and our understandings of what it can and should accomplish will continue to evolve. Accordingly, we welcome comments and expect to revisit the work in the future.

Next generation environmental assessment for Canada: basic principles and components of generic design

Robert B. Gibson,[1] Meinhard Doelle,[2] A. John Sinclair[3]

Introduction

Environmental assessment should be hugely popular these days. In a world with desperate needs for more anticipatory, farsighted, integrated and credibly participative approaches to decision making, environmental assessment has few evident competitors. The reality, however, is less positive. While the core best practice principles of good environmental assessment – early initiation, open process, critical attention to needs and purposes, prediction of potential cumulative effects, evaluation of significance, comparison of alternatives, broad public engagement, integration in enforceable decisions, monitoring of actual effects, etc. – are still entirely appropriate today, they are too rarely delivered. No existing environmental assessment regime in Canada today is well equipped to meet the rising challenges of a world that is both economically wobbly and sliding into deeper unsustainability. And even the better assessment processes are more likely to be treated as scapegoats than as saviours by the governments they serve. After 40 years of environmental assessment law and practice in Canada, it is time to review and renew.

How the story has changed

The story of environmental assessment in Canada once seemed to be quite straightforward. Environmental assessment was introduced as a contribution to more enlightened decision making and was resisted by institutions that found it a threat to their established interests.[4] Advocates exploited opportunities for incremental advancement, especially through legislated obligations.[5] Opponents used a range of tools, including

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[3] Natural Resources Institute, University of Manitoba, Winnipeg, Manitoba (John.Sinclair@umanitoba.ca).
[4] Robert B. Gibson, "From Wreck Cove to Voisey's Bay: the evolution of federal environmental assessment in Canada," *Impact Assessment and Project Appraisal* 20:3 (2002), pp.151-159.
[5] Stephen Hazell, *Canada v. the Environment: federal environmental assessment 1984-1998* (Toronto: Canadian Environmental Defence Fund, 1999).

simple intransigence, to block, narrow or soften the new requirements. Progress was consequently slow, erratic and insecure. Nonetheless, over the first twenty years or so, environmental assessment law and practice in Canada did, for the most part, advance.[6]

Eventually every province and territory had environmental assessment law.[7] No two jurisdictions chose the same path and none would represent best practice. But all claimed they wanted "environmental" considerations integrated into decision making. All required pre-approval assessments at least for selected major undertakings. And all provided some openings for public scrutiny and engagement.[8] In many jurisdictions, environmental assessments became the main publicly accessible vehicles for planning and review of major new undertakings (even though the scope of inquiry did not always cover all the issues of public interest).[9] Advocates could be forgiven for assuming that gradual entrenchment of the habitual expectations and practices of environmental assessment would gradually wear down the resistance. Sooner or later, reasonably capable and influential environmental assessment would become normal.

Today, that story and the resulting assumption seem quaintly simplistic. The record over the second twenty years of environmental assessment in Canada has been messy and contradictory.[10] While gains in understanding and in some areas of practice have continued, they have been accompanied by sharp reversals. Several governments – most

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[6] Robert B. Gibson, "From Wreck Cove to Voisey's Bay: the evolution of federal environmental assessment in Canada," *Impact Assessment and Project Appraisal* 20:3 (2002), pp.151-159.

[7] For a review of the provincial and territorial processes as they existed in 2010, see Deborah Carver, Robert B. Gibson, Jessie Irving and Erin Burbidge, *Inter-jurisdictional Coordination of EA: challenges and opportunities arising from differences among provincial and territorial assessment requirements and processes,* a commissioned report for the Canadian Environmental Assessment Agency, through the Environmental Planning and Assessment Caucus, 20 November 2010, available at http://rcen.ca/caucus/environmental-planning-and-assessment/resources.

[8] David Richard Boyd, *Unnatural Law: rethinking Canadian environmental law and policy* (Vancouver: UBC Press, 2003), pp.150–160.

[9] *Ibid*, pp.156–157; Meinhard Doelle and A. John Sinclair, "Time for a new approach to public participation in EA: promoting cooperation and consensus for sustainability," *Environmental Impact Assessment Review* 26:2 (2006), pp.185-205.

[10] Robert B. Gibson, "From Wreck Cove to Voisey's Bay: the evolution of federal environmental assessment in Canada," *Impact Assessment and Project Appraisal* 20:3 (2002), pp.151-159; Andrew Nikiforuk, *The Nasty Game: the failure of environmental assessment in Canada* (Toronto: Walter & Duncan Gordon Foundation and World Wildlife Fund, 1997); Bram F. Noble, "Promise and dismay: the state of strategic environmental assessment systems and practices in Canada," *Environmental Impact Assessment Review* 29:1 (2009), pp.66-75; Peter N. Duinker and Lorne A. Greig, "The impotence of cumulative effects assessment in Canada: ailments and ideas for redeployment" *Environmental Management* 37:2 (2006), pp.153-161.

notably Ontario in 1996,[11] British Columbia in 2002,[12] and Canada in 2012[13] – have substantially weakened their environmental assessment laws. While the dramatic cases were influenced by commitments to corporate patrons and small government ideology,[14] even moderate governments have sometimes treated environmental assessment requirements as a noxious impediment to economic recovery and a bacterial culture for inefficiency. Probably some of this behaviour can be ascribed to ignorance of what environmental assessment can and often does deliver, confusion about the causes of assessment process deficiencies, and frustration with assessment proceedings being used as a venue for attacks on pet projects.[15] But clearly the challenges facing environmental assessment cannot all be laid at the feet of facile ideologues, ill-informed policy makers and vested defenders of unsustainable development.

The world in which environmental assessment is now promoted and eroded is very different from the world into which environmental assessment was introduced forty years ago. Our brave new context is more complex. It is also more demanding and vulnerable. Among the key changes have been the rise, recognition and repercussions of economic

[11] Ontario *Environmental Assessment Act*, *RSO 1990, c E.18, 25 October 2010.*
[12] British Columbia *Environmental Assessment Act*, *SBC 2002, c. E.43, 30 May 2002*
[13] *Canadian Environmental Assessment Act, SC 1992, c 37*, 17 January 2012 [*Canadian Environmental Assessment Act, SC 1992, c 37*]. See also Meinhard Doelle, "CEAA 2012: the end of federal EA as we know it?" *Journal of Environmental Law and Practice* 24:1 (2012), pp.1-17; Robert B. Gibson, "In full retreat: the Canadian government's new environmental assessment law undoes decades of progress," *Impact Assessment and Project Appraisal* 30:3 (2012), pp.179-188; Jocelyn Stacey, "The environmental, democratic, and rule-of-law implications of Harper's environmental assessment legacy," *Review of Constitutional Studies* (2016), available at SSRN: http://ssrn.com/abstract=2799964.
[14] Robert B. Gibson, "In full retreat: the Canadian government's new environmental assessment law undoes decades of progress," *Impact Assessment and Project Appraisal* 30:3 (2012), pp.179-188; Meinhard Doelle, "CEAA 2012: the end of federal EA as we know it?" *Journal of Environmental Law and Practice* 24:1 (2012), pp.1-17; Richard Lindgren and Canadian Environmental Law Association, *RE: Amendments to the Project List Regulations under the Canadian Environmental Assessment Act, 2012* (Toronto: CELA, 2012), available at http://www.cela.ca/taxonomy/term/212.
[15] Meinhard Doelle and A. John Sinclair, "Time for a new approach to public participation in EA: promoting cooperation and consensus for sustainability," *Environmental Impact Assessment Review* 26:2 (2006), pp.185-205; Eneko Garmendia and Sigrid Stagl, "Public participation for sustainability and social learning: Concepts and lessons from three case studies in Europe," *Ecological Economics* 69:8 (2010), pp.1712-1722; Pierre André, Claude E. Delisle and Jean-Pierre Revéret, *Environmental Assessment for Sustainable Development: processes, actors and practice* (Montréal: Presses inter Polytechnique, 2004); Ralf Aschemann et al., *Handbook of Strategic Environmental Assessment* (London: Routledge, 2012).

globalization and trade liberalization;[16] climate change and ecological decline;[17] dynamic complex systems;[18] the precautionary principle;[19] advances in international environmental law;[20] Aboriginal rights;[21] deeper public[22] and private[23] as well as

[16] Paul Collier and David Dollar, *Globalization, Growth, and Poverty: building an inclusive world economy* (Washington: World Bank Publications, 2002); Saskia Sassen, *Territory, Authority, Rights: from medieval to global assemblages* (Princeton: Princeton University Press, 2008); Saskia Sassen, *Losing Control? sovereignty in the age of globalization* (New York: Columbia University Press, 2013).

[17] Alexis Bélanger, "Canadian federalism in the context of combating climate change," *Constitutional Forum/Forum Constitutionnel* 20:1 (2011), available at https://ejournals.library.ualberta.ca/index.php/constitutional_forum/article/view/12117; J. B. Ruhl, *Climate Change Adaptation and the Structural Transformation of Environmental Law*, SSRN Scholarly Paper (Rochester, NY: Social Science Research Network, 2009).

[18] Richard B. Norgaard and Paul Baer, "Collectively seeing complex systems: the nature of the problem," *BioScience* 55:11 (2005), pp. 953-960; Carl Folke, Thomas Hahn, Per Olsson and Jon Norberg, "Adaptive governance of social-ecological systems," *Annual Review of Environment and Resources* 30 (2005), pp.441-473.

[19] Canadian Environmental Law Association, "The Precautionary Principle" (2003), available at http://www.cela.ca/collections/pollution/precautionary-principle; Owen McIntyre and Thomas Mosedale, "The Precautionary Principle as a norm of customary international law," *Journal of Environmental Law* 9 (1997), pp.221-241; Rebecca M. Bratspies, "Trail Smelter's (semi) precautionary legacy," in Rebecca M. Bratspies and Russell Miller, eds*., Transboundary Harms in International Law: lessons from the Trail Smelter arbitration* (Cambridge: Cambridge University Press, 2006).

[20] Including adoption of principles supporting polluter pays, public participation, sustainable development and the ecosystem approach. See Owen McIntyre and Thomas Mosedale, "The Precautionary Principle as a norm of customary international law," *Journal of Environmental Law* 9 (1997), pp.221-241; and Philippe Sands and Jacqueline Peel, *Principles of International Environmental Law* (Cambridge: Cambridge University Press, 2012).

[21] Jeff Corntassel, *Forced Federalism: contemporary challenges to indigenous nationhood* (Norman: University of Oklahoma Press, 2008); Michael Coyle, "Negotiating Indigenous peoples' exit from colonialism: the case for an integrative approach," *Canadian Journal of Law and Jurisprudence* 27:1 (2014), pp.283-303; Gerald R. Alfred, *Peace, Power, Righteousness: an indigenous manifesto* (Toronto: Oxford University Press, 1999).

[22] Niels Veldhuis, Jason Clemens and Milagros Palacios, "Beyond our means: Government debt tops $1.2-trillion and spending is still rising," *Financial Post,* 16 May 2013, available at http://business.financialpost.com/fp-comment/beyond-our-means-government-debt-tops-1-2-trillion-and-spending-is-still-rising.

[23] Tavia Grant and Tamsin McMahon, "In deep: the high risks of Canada's growing addiction to debt," *Globe and Mail,* 8 May 2015, available at http://www.theglobeandmail.com/report-on-business/economy/housing/the-real-estate-beat/canada-debt-risks/article24327561/.

ecological debt;[24] economic and political inequities within and across nations and generations;[25] and widespread public skepticism about the capability and credibility of most governments and many other authorities.[26] These phenomena can be seen as indicators of greater need for strong environmental assessment processes. At the same time, however, they point to growing uncertainties and as fertile grounds for nervous retrenchment as for progressive innovation.

All of these are big and vexing issues. Individually and as a package they push in apparently opposing directions – towards more ambitious or more modest government interventions, openness or authority, stimulus or austerity, inter-jurisdictional collaboration or local self-reliance, resilience or transition, immediate worries or future legacies. Complex and confusing tensions such as these can encourage retreats into the old certainties of faith and ideology, however badly they served in the past and however many present realities they must deny or ignore. But conventional forward-looking reactions are also problematic – trapped among apparently competing imperatives to address serious problems, revive economic growth, and demonstrate efficiency, affordability and manageability within government capacities. For environmental assessment, another path is needed.

The most promising options involve accepting that all of these tensions represent circumstances to be faced and seeking ways to reconcile or transcend the contending objectives. The essential agenda for next generation environmental assessment begins with rejection of the usual divisions – especially the ones that misconceive effectiveness, efficiency and fairness or economy, ecology and society as separate and conflicting goals – and extends the approach to address other opposing demands on assessment processes and applications. This, as we will see, entails some humility in embracing complexity and experimentation. But it also raises the ambitions of environmental assessment in ways that extend its role as a challenge to conventional thinking and practice.

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[24] World Wildlife Fund et al., *Living Planet Report 2014* (Gland: World Wildlife Fund, 2014); Robert Costanza, et al. "The value of the world's ecosystem services and natural capital," *Nature* 387 (1997), pp.253-260.

[25] Paul Collier and David Dollar, *Globalization, Growth, and Poverty: Building an Inclusive World Economy* (Washington: World Bank Publications, 2002); Heinz W Arndt, "The' trickle-down' myth," *Economic Development and Cultural Change* 32:1 (1983), pp.1-10; Bob Giddings, Bill Hopwood and Geoff O'Brien, "Environment, economy and society: fitting them together into sustainable development," *Sustainable Development* 10:4 (2002), pp.187-196; Jeffrey D. Sachs, *The End of Poverty: Economic Possibilities for Our Time* (New York: Penguin, 2006).

[26] Don Lenihan and Carolyn Bennett, "Rebuilding public trust: open government and open dialogue in the Government of Canada," (Canada2020, 28 April 2015), available at http://canada2020.ca/open-government-open-dialogue-lenihan-bennett/.

The contrast between first and next generation environmental assessment

The first generation of environmental assessment also demanded change and stirred resistance. It aimed to add attention to environmental factors (variously defined) alongside financial, technical and political considerations in conventional decision making on major undertakings. But for the most part, it sought only to mitigate significant adverse environmental effects.[27] More advanced approaches have recognized socio-economic as well as biophysical aspects of "the environment," cast a critical eye over project purposes, and compared alternatives in light of some conception of the public interest. Most regimes have accepted needs for transparency and, although efforts to facilitate effective public engagement have been at best uneven, environmental assessment has typically offered the most important public opening for insights and participation in project decision making.[28] Some processes have applied to a wide range of projects and scattered undertakings beyond the individual project level. A few have recognized cumulative effects, though not very effectively,[29] and in a handful of special cases, a sustainability-based test has been applied.[30] In its brightest moments, environmental assessment in Canada has been instrumental in forcing re-examination of prevailing priorities and practices (e.g., in forestry, waste management, power system planning and urban flood management).[31] Overall, however, in its first forty years,

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[27] Robert B. Gibson et al., *Sustainability Assessment: criteria and processes* (London: Earthscan, 2005), chapter 2.

[28] Panel on Public Participation in Environmental Assessment and Decision Making, et al., *Public Participation in Environmental Assessment and Decision Making* (Washington: National Academies Press, 2008); A. John Sinclair, "Public involvement in EA in Canada: a transformative learning perspective," *Environmental Impact Assessment Revie*w 21:2 (2001), pp.113-136.

[29] Peter N. Duinker and Lorne A. Greig, "The impotence of cumulative effects assessment in Canada: ailments and ideas for redeployment" *Environmental Management* 37:2 (2006), pp.153-161; Jill Gunn, "Conceptual and methodological challenges to integrating SEA and cumulative effects assessment," *Environmental Impact Assessment Review* 31:2 (2011), pp.154-160.

[30] Robert B. Gibson et al., *Sustainability Assessment: criteria and processes* (London: Earthscan, 2005); Robert B. Gibson, "Application of a contribution to sustainability test by the Joint Review Panel for the Canadian Mackenzie Gas Project," *Impact Assessment and Project Appraisal* 29:3 (2011), pp.231-244; Robert B. Gibson, "Sustainability assessment in Canada," in Alan Bond, Angus Morrison-Saunders and Richard Howitt, editors*, Sustainability Assessment: pluralism, practice and progress* (London: Taylor and Francis, 2012), pp.167-183.

[31] Robert B. Gibson, "Sustainability assessment and conflict resolution: reaching agreement to proceed with the Voisey's Bay nickel mine," *Journal of Cleaner Production* 14: 3/4 (2006), pp.334-348; Robert B. Gibson, "Sustainability assessment in Canada," in Alan Bond, Angus Morrison-Saunders and Richard Howitt, editors*, Sustainability Assessment: pluralism, practice and progress* (London: Taylor and Francis, 2012), pp.167-183; Mark Winfield, Robert B. Gibson, Tanya Markvart, Kyrke Gaudreau and Jenny Taylor, "Implications of sustainability assessment for electricity system design: the case of the Ontario Power Authority's Integrated Power System Plan," *Energy Policy* 38

environmental assessment has struggled to be much more than a slightly earlier, more open and better integrated process for environmental licensing of conventional projects, and has been criticized for slowing approvals there.[32]

Next generation environmental assessment will have to aim higher and do better. It must combine the most advanced aspects of environmental assessment practice so far with a more fully integrative approach to the contending demands noted above. Key distinctions between past and next generation environmental assessment should centre on three basic shifts:

(i) In contrast to the prevailing assessment focus on mitigating significant adverse effects, next generation environmental assessment will establish "positive contribution to sustainability" as the core test. Proposed undertakings will be expected to be the best option for delivery of lasting wellbeing, preferably through multiple, mutually reinforcing and fairly distributed benefits, while also avoiding adverse effects.[33]

(ii) In contrast to the prevailing assumption that economic, ecological and social objectives tend to conflict, can be addressed separately and will be resolved through trade-offs that are "acceptable in the circumstances," next generation environmental assessment will recognize that sustainability-enhancing economic, ecological and social objectives are interdependent and jointly necessary. Trade-offs will be treated as losses to avoid and acceptable only in the last resort and under clearly delineated rules. [34]

(iii) In contrast to the similar assumption that effectiveness, efficiency and fairness are competing objectives, next generation environmental assessment will see that they are

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(2010), pp.4115-4126; Dan Shrubsole, "From structures to sustainability: a history of flood management strategies in Canada," *International Journal of Emergency Management* 4:2 (2007), pp.183-196; Ken Lertzman, Jeremy Rayner and Jeremy Wilson, "Learning and change in the British Columbia forest policy sector: a consideration of Sabatier's advocacy coalition framework," *Canadian Journal of Political Science* 29:1 (1996), pp.111-133.

[32] Robert B Gibson, "In full retreat: the Canadian government's new environmental assessment law undoes decades of progress," *Impact Assessment and Project Appraisal* 30:3 (2012), pp.179-188.

[33] See Appendix 1; also Robert B. Gibson, "Why sustainability assessment?" in Alan Bond, Angus Morrison-Saunders and Richard Howitt, eds*., Sustainability Assessment: pluralism, practice and progress* (London: Taylor and Francis, 2012), pp.3-17; Robert B. Gibson, "Favouring the higher test: contribution to sustainability as the central criterion for reviews and decisions under the *Canadian Environmental Assessment Act,*" *Journal of Environmental Law and Practice* 10:1 (2000), pp. 39-55.

[34] See Appendix 2; also Robert B. Gibson, "Avoiding sustainability trade-offs in environmental assessment**,**" *Impact Assessment and Project Appraisal* 31:1 (2013), pp.1-12; Angus Morrison-Saunders and Jenny Pope, "Conceptualising and managing trade-offs in sustainability assessment," *Environmental Impact Assessment Review* 38 (2013), pp.54-63.

logically and practically interdependent objectives. Consequently, efficiencies will be sought by applying assessment requirements most energetically where they can be most effective, including in the development of policies, programmes and plans that guide many more specific initiatives.[35]

These points are, however, only a beginning. In the following discussion, we reconsider the larger context for environmental assessment renewal to identify the main pressures and emerging needs that next generation environmental assessment will have to address, work through the implications for the key components of environmental assessment processes, and consider the potential viability of the overall package. Our purpose is to initiate and help to inform a conversation. Like environmental assessment itself, this paper is a work in progress.

The broad context for developing next generation environmental assessment

Environmental assessment was introduced and spread around the world at a time when most governments were passing their first suite of environmental protection laws. The initial focus on reactive pollution abatement led to licensing requirements for potentially polluting facilities and in turn to requirements for earlier and more comprehensive pre-approval assessments.[36] The earliest environmental assessment laws[37] defined "environment" broadly to cover social, economic and cultural as well as biophysical aspects. But many subsequent laws and most assessment practice concentrated on biophysical effects.[38] With some important exceptions, therefore, first generation environmental assessment was better equipped for forcing attention to traditionally neglected ecological effects than for ensuring well integrated consideration of interrelated social, economic and ecological concerns.

The initial biophysical focus fit the founding circumstances and some advocates still fear losing emphasis on the biophysical environment.[39] But the ground shifted with the

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[35] Angus Morrison-Saunders and Jos Arts, *Assessing Impact: handbook of EIA and SEA follow-up* (London: Earthscan, 2004); Pierre André, Claude E. Delisle and Jean-Pierre Revéret, *Environmental Assessment for Sustainable Development: Processes, Actors and Practice* (Montréal: Presses inter Polytechnique, 2004).

[36] Robert B. Gibson, Selma Hassan, Susan Holtz, James Tansey and Graham Whitelaw, *Sustainability Assessment: criteria and* processes (London: Earthscan, 2005), chapter 2; Niall Ferguson et al., *The Shock of the Global: the 1970s in perspective* (Cambridge: Harvard University Press, 2010), chapter 16.

[37] Most notably, the US *National Environmental Policy Act* in 1969 and the Ontario *Environmental Assessment Act* in 1975.

[38] Angus Morrison-Saunders and Jos Arts, *Assessing Impact: handbook of EIA and SEA follow-up* (London: Earthscan, 2004).

[39] Steve Mounce, Richard Ashley and A.L. Walker, "Addressing practical problems in sustainability assessment frameworks," *Engineering Sustainability* 161:1 (2008), pp.23-30; Greg Marsden, Mary Kimble, John Nellthorp and Charlotte Kelly, "Sustainability

emergence of more complex threats to human wellbeing and more comprehensive responses centred on the notion of "sustainable development." Popularized by the World Commission on Environment and Development in the mid-1980s, sustainable development has been much abused as a concept and a claim.[40] The essential requirements, however, are now well established by decades of deliberation and experience.[41] Implications for environmental assessment begin with two key observations. The first is that current conditions and prevailing trends in biophysical and socio-economic parameters at the foundations of human wellbeing are not sustainable. The second is that these factors are inextricably linked.[42] Taken together, these realities entail significantly larger challenges than first generation environmental assessment was designed to address.[43]

Unsustainability

The unsustainability problem has three contributing components: demanding too much of the biosphere (as indicated by unprecedented and still rising atmospheric greenhouse gas concentrations, biodiversity losses, groundwater and soil depletion, ocean acidification, stresses on ocean fisheries, etc.),[44] leaving too many people with not enough (as indicated by the billion or so people suffering from malnutrition and little to no access to clean

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assessment: the definition deficit," *International Journal of Sustainable Transportation* 4:4 (2010), pp.189-211.

[40] Bryan G. Norton, *Sustainability: a philosophy of adaptive ecosystem management* (Chicago: University of Chicago Press, 2005); W. Neil Adger and Andrew Jordan, *Governing Sustainability* (Cambridge: Cambridge University Press, 2009); Edward B. Barbier, "The concept of sustainable economic development," *Environmental Conservation* 14:2 (1987), pp.101-110; Michael Redclift, "Sustainable development (1987–2005): an oxymoron comes of age" *Sustainable Development* 13:4 (2005), pp.212-227; Michael Redclift, "Sustainable development: needs, values, rights," *Environmental Values* 2:1 (1993), pp.3-20.

[41] Bryan G. Norton, *Sustainability: a philosophy of adaptive ecosystem management* (Chicago: University of Chicago Press, 2005); W. Neil Adger and Andrew Jordan, *Governing Sustainability* (Cambridge: Cambridge University Press, 2009); Barry Dalal-Clayton, Stephen Bass and United Nations Development Programme, *Sustainable Development Strategies: a resource book* (London: Earthscan, 2002).

[42] *Ibid*.

[43] Robert B. Gibson et al., *Sustainability Assessment: criteria and processes* (London: Earthscan, 2005).

[44] MEA, Millennium Ecosystem Assessment Board, *Current State and Trends Assessment* (2005), available at http://www.millenniumassessment.org/en/Condition.aspx;
Rockström, Johan, et al. "A safe operating space for humanity," *Nature* 461.7263 (2009), pp.472-475.

water, sanitation, education or healthcare),[45] and maintaining profoundly inequitable arrangements that perpetuate the first two problems (as indicated by most benefits of growing material and energy use going to those already most advantaged while little if anything reaches those in most desperate need).[46] All three are political, economic and social as well as biophysical phenomena. They are also deeply entwined. Their secondary effects – on the exacerbation of present tensions and on the theft of future legacies – are joint results. And no one of them can possibly be resolved without also resolving the others.

As summarized above, unsustainability is a global reality. But it is also universally if unevenly local and regional. Most of the worrisome global indicators capture the cumulative results of regional problems in ecosystems, communities and nations.[47] Unsustainable conditions, trends and behaviours at the local and regional scales are common and often serious threats to lasting wellbeing. The context for decision making on significant undertakings therefore includes the interrelated problems of local to global unsustainability.[48]

Clash of cultures

Interactions that link social, economic, and biophysical factors and local to global scales also characterize other major changes in the context for environmental assessment. Among the most important are various clashes between new and old, including at the meeting points of modern and traditional cultures. Inter-cultural conflict predates history and conflicts between modern and traditional cultures have characterized a couple of centuries or more. But since the expansion of globally liberalized trade, the fall of the iron curtain and the rise of instant electronic communications, these conflicts are more visible and arguably more pressing.[49]

They are also more likely to be involved in cases requiring environmental assessment. The dominant economic and technological culture features a devotion to infinite economic expansion, consumerism, faith in technology and a tendency to concentrate

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[45] Jeffrey D. Sachs, *The End of Poverty: economic possibilities for our time* (New York: Penguin, 2006); Paul Collier and David Dollar, *Globalization, Growth, and Poverty: building an inclusive world economy* (Washington: World Bank Publications, 2002).

[46] Martin Gilens, *Affluence and Influence: economic inequality and political power in America* (Princeton: Princeton University Press, 2012); Amartya Sen, *On Economic Inequality* (Oxford: Clarendon Press, 1973).

[47] The few exceptions include climate change, stratospheric ozone depletion and ocean acidification.

[48] James G, Carrier, *Confronting Environments: local understanding in a globalizing world* (Walnut Creek: AltaMira, 2004); James Gustave Speth & Peter Haas, *Global Environmental Governance: foundations of contemporary environmental studies* (Washington: Island Press, 2006).

[49] Manuel Castells, *The Rise of the Network Society: the information age: economy, society, and culture, Volume I*, 2nd edn. (Chichester: Wiley-Blackwell, 2009).

wealth and power,[50] but also brings some useful economies of scale, innovative creativity, tolerance of diverse origins and commitment to the rule of law at least as base for economic efficiency. Traditional cultures, in their grand variety, often entrench particular bigotries and feature their own maldistributions of power, but foster mutual aid and context-specific knowing, and protect lasting valued qualities such as physical community, face-to-face contact, and habits of foresight and precaution.

These brief depictions neglect much, but they indicate that the story is not merely about opposing possibilities. The contending options, like those discussed in the introductory section above, have different but perhaps complementary strengths and limitations as means to lasting wellbeing.

Complexity

The final big shift in the context for environmental assessment centres on complexity. There is no surprise here. We have already seen that neither the contributing components of unsustainability nor the contrasting characteristics of modern and traditional cultures can be understood usefully as independent and incompatible elements. They are interconnected and interactive, perhaps sometimes in opposition but also potentially reinforcing. This richness of connection and possibility turns out to be common and crucial.

The founding modern conception of the world has relied heavily on the notion of more or less discrete individual entities that obey knowable laws of nature. That is the basis for scientific confidence, technological manipulations (including the ones that send humans to the moon and bring them back) and conventional predictions about environmental effects.[51] It is also at the foundations of modern economics.[52] For some applications, the simple parts and laws assumptions work very well. But especially over the past two or three decades, studies of complex systems have begun to uncover and address much more intricate, dynamic and uncertain relationships.[53]

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[50] *Ibid*; Saskia Sassen, *Territory, Authority, Rights: from medieval to global assemblages* (Princeton: Princeton University Press, 2008).

[51] Edward Dolnick, *The Clockwork Universe: Isaac Newton, the Royal Society, and the birth of the modern world* (New York: Harper/HarperCollins 2011).

[52] Paul A. Samuelson, *Foundations of Economic Analysis* (Cambridge: Harvard University Press, 1947).

[53] Funtowicz, S.O. and Ravetz, J.R., "Science for the post-normal age," *Futures* 25:7 (1993), pp.739-755; W. Brian Arthur, "Complexity and the economy" *Science* 284:5411 (1999), pp.107-109; Saroj Jayasinghe, "Conceptualising population health: from mechanistic thinking to complexity science," *Emerging Themes in Epidemiology* 8:2 (2011), available at http://www.ncbi.nlm.nih.gov/pubmed/21247500; Carl Folke, Thomas Hahn, Per Olsson and Jon Norberg, "Adaptive governance of social-ecological systems," *Annual Review of Environment and Resources* 30 (2005), pp.441-473.

Complex systems are characterized by many, perhaps countless, factors exerting influences on each other over time and across scales from the sub-atomic on up. The interrelations involved are dynamic, with feedback loops, cascading effects and reinforcing as well as damaging consequences. A system may maintain a more or less consistent structure and set of functions, despite internal and external stresses, until some added or unremitting stress pushes it over a threshold into significant, even catastrophic change.[54] Overfishing, for example, can lead to a fisheries collapse from which no recovery is likely because the system has re-organized with different dominant species.[55] Human systems and socio-ecological systems have many of the same characteristics, but with the added complexities of conscious choice and intentional direction.[56]

In all cases, complexity entails uncertainty. While the behaviour of complex systems is not entirely unpredictable, full understanding of all the links, influences and feedbacks is not possible and effects may not follow a conveniently linear trajectory. Thresholds to significant change may be anticipated, but are typically visible mostly in retrospect. Similarly, uncertainty recommends precaution.[57] Where existing systems or system functions are desirable, avoidance of stresses that may threaten system resilience is a more prudent strategy than allowing stresses to approach a roughly predicted brink. Alternatively, where an existing system is problematic (perhaps because it is engaged in unsustainable behaviour that threatens valued ecological or community qualities), pushing that system over a threshold to more acceptable characteristics may be attractive. But predicting how a system will respond to threshold crossing also involves serious uncertainties and the risk of nasty surprises.[58]

General implications

A world of unsustainability and complexity demands both significant change and precautionary care. The job, essentially, is to accomplish a shift towards a more

[54] Lance H. Gunderson, Craig R. Allen and C. S. Holling, *Foundations of Ecological Resilience* (Washington, DC: Island Press, 2009).

[55] Carl Folke, Steve Carpenter, Brian Walker, Marten Scheffer, Thomas Elmqvist, Lance Gunderson and C. S. Holling, "Regime shifts, resilience, and biodiversity in ecosystem management," *Annual Review of Ecology, Evolution, and Systematics* 35 (2004), pp.557-581.

[56] W. Neil Adger and Andrew Jordan, *Governing Sustainability* (Cambridge: Cambridge University Press, 2009); Fikret Berkes, Johan Colding and Carl Folke, *Navigating Social-Ecological Systems: building resilience for complexity and change* (Cambridge: Cambridge University Press, 2002).

[57] M. Krayer von Krauss, M.B.A. van Asselt, M. Henze, J. Ravetz and M.B. Beck, "Uncertanity and precaution in environmental management," *Water Science and Technology* 52:6 (2005), pp.1-9.

[58] Carl Folke, Thomas Hahn, Per Olsson and Jon Norberg, "Adaptive governance of social-ecological systems," *Annual Review of Environment and Resources* 30 (2005), pp.441-473.

sustainable global trajectory, recognizing that any such shift will rely mostly on diverse but complementary local and regional initiatives.

Chief among the challenges is the nature of the starting point. We are beginning with a global political economy that has delivered enormous quality of life gains to many people (though highly unevenly and incompletely). It has also been remarkably adaptable and able to accommodate diverse forms. However, it is now deeply entrenched, supported by a vast network of interdependencies, and locked on a path that is incompatible with sustainable futures. Its most obvious problem is commitment to unending economic growth even though that growth has consistently depended on increasing biospheric demands and other ecological and social stresses.[59]

Theorists had hoped that resulting shortages and damages would be addressed more or less automatically through market mechanisms – rising prices for increasingly scarce goods would spur innovative substitutions and other fixes. But despite the market and supplementary government interventions, greenhouse gas emissions and overall stresses on the biosphere continue to rise even though by some calculations they are already well beyond levels that might be sustainable.[60]

In the context of deepening unsustainability, several other prevailing operating assumptions are also untenable. Poverty and deprivation cannot be addressed effectively through the trickling-down of wealth and opportunity in growing economy when that growth is undermining the foundations for wellbeing.[61] Mitigation (reduction) of significant adverse biophysical and socio-economic effects of new undertakings cannot be sufficient in a world where key biophysical and socio-economic conditions are already imperiled and the need is for reversal of trends, regeneration and recovery. And even in combination, markets and governments using conventional economic and regulatory tools cannot be relied on when they have consistently failed to prevent or correct the adverse overall perils of economic expansion along the current path.[62]

Evidently, changes are needed on many fronts. Just what must be retained, reformed or replaced is open to debate and experimentation. Quite likely there are multitudes of potentially viable options, suitable variously in different circumstances. But a few very general conclusions can be drawn. Most fundamentally, the needed changes include a

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[59] Jan-Peter Voss, Dierk Bauknecht and René Kemp, *Reflexive Governance for Sustainable Development* (Cheltenham: Edward Elgar Publishing, 2006), esp. pp.12–14.
[60] World Wildlife Fund et al., *Living Planet Report 2014* (Gland: World Wildlife Fund, 2014).
[61] Amartya Sen, *On Economic Inequality* (Oxford: Clarendon Press, 1973); Jeffrey D. Sachs, *The End of Poverty: economic possibilities for our time* (New York: Penguin, 2006); Paul Collier and David Dollar, *Globalization, Growth, and Poverty: building an inclusive world economy* (Washington: World Bank Publications, 2002).
[62] Agrawal, Arun, and Maria Carmen Lemos. "A greener revolution in the making? Environmental governance in the 21st century," *Environment: Science and Policy for Sustainable Development* 49.5 (2007), pp.36-45.

more serious commitment to progress towards more sustainable and desirable futures.[63] That involves steps to enhance the resilience of desirable systems as well as steps to foster fair transitions where existing systems (including institutions, ideas, physical structures and habitual practices) are promoting or protecting undesirable and unsustainable activities.[64]

It also requires appropriate governance bodies and activities, for which many options are available but are everywhere likely to require expansion of capacities in two ways. The first is expansion of basic resources by mobilizing more players, expertise, tools and motivations (in the public government sector, private sector and civil society and among individuals). The second involves expanding understanding, engagement and collaborative ability, in part by combining decision making with mutual learning, consensus building, and fostering the skills needed in democratic deliberation and decision making.[65] Both rest on evidence that current governance resources and approaches are insufficient, and that authoritarian alternatives lack the potential for complex understanding and lasting credibility required for the job.[66]

Implications for environmental assessment

As an approach to the planning, approval and implementation of important undertakings, environmental assessment is a potentially powerful venue for change. Particularly influential are its purposes, scope, criteria and deliberative process. In a world that needs a transition towards sustainability, the core purpose of environmental assessment should be to ensure that every new and renewed undertaking represents the best practicable means to deliver lasting net benefits while avoiding significant adverse effects.[67] That is a tall order. Certainly it is a much higher test than the common requirement to mitigate significant adverse effects (unless they can be justified in the circumstances). But the higher test is demanded by the present circumstances. Moreover, environmental

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[63] Robert Costanza, Lisa Graumlich and William L. Steffen, *Sustainability Or Collapse? an integrated history and future of people on Earth* (Cambridge: MIT Press, 2007).
[64] Melissas Leach, et al., "Transforming innovation for sustainability," *Ecology and Society*, 17:2 (2012), 11.
[65] Bryan G. Norton, *Sustainability: a philosophy of adaptive ecosystem management* (Chicago: University of Chicago Press, 2005); W. Neil Adger and Andrew Jordan, *Governing Sustainability* (Cambridge: Cambridge University Press, 2009); Meinhard Doelle and A. John Sinclair, "Time for a new approach to public participation in EA: promoting cooperation and consensus for sustainability," *Environmental Impact Assessment Review* 26:2 (2006), pp.185-205.
[66] R.B. Norgaard, G. Kallis and M. Kiparsky, "Collectively engaging complex socio-ecological systems: re-envisioning science, governance, and the California Delta," *Environmental Science and Policy* 12:6 (2009), pp.644-652.
[67] Robert B. Gibson, "Why sustainability assessment?" in Alan Bond, Angus Morrison-Saunders and Richard Howitt, editors, *Sustainability Assessment: pluralism, practice and progress* (London: Taylor and Francis, 2012), pp.3-17.

assessment with this test is little more than recognition that lasting wellbeing is a workable synonym for the public interest with foresight included.[68]

The test and its implications can be elaborated in several basic ways. In a world of complex interactions, wellbeing depends on the integrated combination of social, economic and biophysical considerations. Consequently the scope of environmental assessment should cover social, economic and biophysical factors and their interactions. And the gains most likely to be lasting are multiple, mutually reinforcing, fairly distributed and resilient.[69] Similarly, in a world in which the notion of sustainability has been widely embraced but much confused for decades, environmental assessment regimes need to be clear about the general criteria to be used in determining contributions to sustainability and identifying adverse effects, and demand explicit specification of these evaluation criteria for particular applications. The goal of identifying best options entails use of these criteria in the comparative evaluation of potentially desirable and feasible alternatives.[70]

Explicit, sustainability-based criteria are crucial for clarifying expectations as well as for providing credible grounds for decisions. After years of deliberation and learning, the core generic requirements for progress towards sustainability are now quite evident (see Appendices 1 and 2). They include recognition of the imperatives to reduce stresses on crucial ecological and socio-ecological systems, to enhance equity in the distribution of opportunity as well as livelihoods, and to respect uncertainties by favouring precaution, adaptability, flexibility, and low risk.[71] As well they include needs to maximize engagement, education and mobilization of all potential contributors, including civil society organizations and citizens as well as participants in the public and private sectors. The latter have implications for the design of environmental assessment processes as well as for the assessment of options for proposed undertakings. All of these criteria apply broadly, including in Canada, but how that apply, and with what priorities and linked considerations depends on the particularities of the context.

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[68] *Ibid.*

[69] Robert B. Gibson et al., *Sustainability Assessment: criteria and processes* (London: Earthscan, 2005).

[70] Robert B. Gibson, ed., *Sustainability Assessment: applications and opportunities* (London: Routledge/Earthscan, 2016); Alan James Bond, Angus Morrison-Saunders & Richard Howitt, *Sustainability Assessment: pluralism, practice and progress* (Routledge, 2012); Jenny Pope, David Annandale and Angus Morrison-Saunders, "Conceptualising sustainability assessment," *Environmental Impact Assessment Review* 24:6 (2004), pp.595-616.

[71] Robert B. Gibson et al., *Sustainability Assessment: criteria and processes* (London: Earthscan, 2005), chapter 5

The Canadian context for developing next generation environmental assessment

Canada is among the richest countries in the world, and both because of and despite its wealth, it suffers from deepening national unsustainability.[72] The biophysical part of the problem, most simply, is that our demands have long exceeded our restorative efforts with resulting effects are already undermining key ecological and biophysical functions and/or leaving growing burdens for future generations. These biophysical concerns have mostly social, economic, cultural and political roots. However, human institutions have also been making more direct contributions to unsustainability, including through developments that have increased inequities between the most and least advantaged, reduced prospects for sustainable livelihood opportunities for all, and raised concerns about the potential adequacy of current governance approaches and bodies.[73]

The biophysical context

In a country with a relatively small population and great expanses of territory, deepening unsustainability of pressures on biophysical systems may seem counter-intuitive. But although a substantial ecological cushion remains in many areas, Canadians do generate stresses beyond what should be expected of our numbers and in important matters current behaviour and prevailing trends are negative.[74]

The relevant biophysical demands are not merely those of individual, corporate and institutional consumers. They include as well the multitudes of pressures from associated activities from exploration and extraction to discharge and disposal in a society that has favoured material routes to satisfaction and competitive approaches to delivering and selling ever more. Those pressures have resulted most visibly in land use changes that replace, re-organize and fragment more natural systems. But they have also tended to deplete or degrade important resources (e.g., soils, fisheries, conveniently located high-grade orebodies, indigenous biodiversity and ecological services).[75] In some jurisdictions, certain important areas of longstanding concern (e.g., several key measures of urban air quality and water pollution) regulatory actions, technological advances and economic efficiencies have led to dramatic improvements in environmental quality. In many places,

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[72] Melody Hessing and Tracy Summerville, *Canadian Natural Resource and Environmental Policy: political economy and public policy* (Vancouver: UBC Press, 2007).

[73] W. Neil Adger and Andrew Jordan, *Governing Sustainability* (Cambridge: Cambridge University Press, 2009).

[74] Laurie Adkin, *Environmental Conflict and Democracy in Canada* (Vancouver: UBC Press, 2009), chapter 1.

[75] Gavin Bridge, "Contested terrain: mining and the environment" *Annual Review of Environment and Resources* 29 (2004), pp.205-259; Melody Hessing and Tracy Summerville, *Canadian Natural Resource and Environmental Policy: political economy and public policy* (Vancouver: UBC Press, 2007).

however, environmental improvements have been neglected or the gains have been outstripped by the expansion of demands.[76]

Our most serious excesses are probably greenhouse gas (GHG) emissions. Climate change is already contributing to major damages and represents a growing hostile legacy for future generations.[77] To stabilize carbon dioxide and equivalents in the global atmosphere at 400-450 ppm (a level still involving adverse effects and risk of more severe climate shifts[78]), developed countries including Canada need at least to reduce GHG emissions to 25-40% below 1990 levels by 2020 and 80-95% below 1990 levels by 2050.[79] In contrast, Canada's GHG emissions increased by over 18% between 1990 (the initial Kyoto Agreement baseline year) and 2013 and are projected to continue rising at least to the end of the decade.[80]

Canada's climate change record also illustrates a key distinction in trends towards or away from sustainability. That is the distinction between improvements in certain parameters and overall progress towards sustainability. Per capita GHG emissions provide a useful example. Because our population has rising faster than our GHG

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[76] David I. Stern. "The rise and fall of the Environmental Kuznets Curve," *World Development* 32:8 (2004), pp.1419-1439. MEA, Millennium Ecosystem Assessment Board, *Current State and Trends Assessment* (2005), available at http://www.millenniumassessment.org/en/Condition.aspx.

[77] The negative legacy results part because carbon dioxide is persistent in the atmosphere and in part because controlled reversal of changes in complex climate systems is probably beyond human capacities, given the ill-understood feedbacks and non-linear changes involved). See Irving M. Mintzer, *Confronting Climate Change: risks, implications and responses* (Cambridge University Press, 1992); and Alex Kirby, United Nations Environment Programme and GRID-Arendal, *Climate in Peril: a popular guide to the latest IPCC reports* (UNEP/Earthprint, 2009).

[78] James Hansen et al., "Assessing 'dangerous climate change': required reduction of carbon emissions to protect young people, future generations and nature," *PloS One* 8:12 (2013), e81648, available at http://www.plosone.org/article/fetchObject.action?uri=info:doi/10.1371/journal.pone.0081648&representation=PDF.

[79] Susan Joy Hassol, *Questions and Answers: emissions reductions needed to stabilize climate* (Presidential Climate Action Project, 2011), available at www.climatecommunication.org/wp-content/uploads/2011/08/presidentialaction.pdf. If a fairer global distribution of climate responsibility is assumed, the demands are greater. See Simon Donner, "What do the temperature targets mean for Canada?" *Policy Options* (29 March 2016), pp.1-5. http://policyoptions.irpp.org/magazines/march-2016/what-do-the-temperature-targets-mean-for-canada/

[80] Environment Canada, *National Inventory Report: greenhouse gas sources and sinks in Canada (1990-2013), Executive Summary* (Government of Canada, 2014). https://www.ec.gc.ca/ges-ghg/5B59470C-518A-4D15-A832-75F6F6D8400D/NIR2015_Executive_Summary_EN.pdf.

emissions,[81] Canada's per capita GHG emissions have declined since 1990, though they remain among the highest in the world.[82] Reducing per capita GHG emissions is a positive achievement. Insofar as it represents a step towards further reductions, it indicates movement in a desirable direction. But the results merely slow our decline into deeper unsustainability. For sustainability, the trajectory that matters most is the one that will essentially eliminate our net human GHG emissions by 2050 if not earlier.[83] We are not close to that path and until we get there, we will be contributing to unsustainability and adding to our ecological debts.[84]

A similar situation is evident in urban growth management, an area where Canadian authorities have been engaged in significant sustainability related changes. The most quickly expanding urban regions of Canada – the Greater Golden Horseshoe around the western end of Lake Ontario, the Greater Vancouver area and the Capital Regional District in British Columbia[85] – have over the past two decades initiated a transformation from low density, automobile-centred urban form to higher density, transit-centred "smart growth" alternatives. The motives have been as much economic and social as ecological. Sprawling cities impose high servicing and repair costs, and impossible demands for highway network expansions. Smart growth efficiencies, however, also slow urban and suburban expansion into foodlands, ecologically sensitive areas and other greenspaces.[86]

For sustainability purposes, the anticipated economic, social and ecological improvements are welcome. Certainly they are preferable to what the old model would have delivered. So far, however, these initiatives are about growth management not transition to sustainability. They mitigate rather than reverse the adverse sustainability

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[81] Canada's population has been growing about 1% per year since 1990. See Environment Canada, *Canada's Emissions Trends* (Government of Canada, 2014), available at http://www.ec.gc.ca/ges-ghg/E0533893-A985-4640-B3A2-008D8083D17D/ETR_E%202014.pdf

[82] From 613 Mt in 1990 to 727 Mt in 2013. See Conference Boarfd of Canada, "Greenhouse Gas (GHG) Emissions," (2012), available at http://www.conferenceboard.ca/hcp/details/environment/greenhouse-gas-emissions.aspx.

[83] Chris Bataille, Dave Sawyer and Noel Melton (2015). *Pathways to Deep Decarbonization in Canada* (Paris: SDSN – IDDRI, 2015), available at http://deepdecarbonization.org/wp-content/uploads/2015/09/DDPP_CAN.pdf; Simon Donner, "What do the temperature targets mean for Canada? *Policy Options* (29 March 2016), pp.1-5.

[84] Tim Jackson, "A lasting prosperity," in *Prosperity without Growth* (London: Earthscan, 2009), pp.171-204.

[85] Statistics Canada, Government of Canada, "Population of census metropolitan areas", (11 February 2015), online: <http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/demo05a-eng.htm>.

[86] Hiroaki Suzuki, Robert Cervero and Kanako Iuchi, *Transforming Cities with Transit: transit and land-use integration for sustainable urban development* (Washington: World Bank Publications, 2013); Todd Litman, *Understanding Smart Growth Savings* (Victoria Transport Policy Institute, May 2016), available at http://vtpi.org/sg_save.pdf.

effects of growing urban centres. Emphasis on density and transit will attenuate expansion of the urban footprint and promise sizeable reductions in some important energy and material demands (e.g., through transit vs. car energy efficiencies). Lowered pressures on adjacent lands may facilitate agricultural reinvestment and ecological protection. Overall, however, a smart growth metropolis will bring slower rising stresses on regional and wider resources and ecosystems; another big step will be required to make it restorative.[87]

While the handful of rapidly growing cities house much of the Canadian population, they are not representative of the country. Like many other countries, Canada also has regions, including cities, that are not expanding demographically or economically. It has communities especially in rural and remote areas that are facing declines in population and/or livelihood opportunities due to changes in technologies and global demand. And in a national economy that relies significantly on extractive industries exploiting non-renewable hydrocarbons and minerals, Canada also has resource areas that are subject to the rise and decline of undertakings with important social and ecological as well as economic implications.[88] Such activities present a special challenge for sustainability since the extractive activities themselves deplete the resource involved and are consequently time-limited. Unlike activities that are based on renewable resources and that could with proper management support livelihoods in perpetuity, mines and hydrocarbon extractive projects can contribute to lasting benefits only if they are designed and used as bridges to more sustainable means of making a living. Canada has so far done little to this. Extractive projects have provided important but temporary bursts of wealth generation and left negative legacies (especially a depleted resource base, economic decline for dependent communities, scarred landscapes and wastes sometimes requiring care in perpetuity) for local and regional ecologies and communities.[89]

The social (and economic, political, cultural) context

Short to medium term economic gains have provided understandable but increasingly insufficient justifications for the adverse legacies of both urban expansion and industrial extraction. Livelihood opportunities are crucial for wellbeing and probably must often be dynamic (adaptable and constantly innovative) in current and foreseeable circumstances. But as noted above, economic activities in a world that is already demanding too much of biophysical capacities must be redirected both to conserve and restore and to deliver lasting and reasonably equitable livelihood opportunities and associated wellbeing.

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[87] Robert B. Gibson, "Sustainability and the Greenbelt," *Plan Canada* 51:3 (2011), pp.38-41.

[88] Natural Resources Canada Government of Canada, "Canada News Centre - Extractive Industries: The Canadian Advantage at Home and Abroad," (18 November 2014), available at http://news.gc.ca/web/article-en.do?nid=905719.

[89] Robert B. Gibson, "Turning mines into bridges: gaining positive legacies from non-renewable resource projects," *Journal of Aboriginal Management* 15 (October 2014), pp.4-8; https://www.afoa.ca/afoadocs/L3/JAM_Preview/JAM_Issue15.pdf.

In Canada, trends in important measures of distributional equity have been undesirable. Distribution of income and wealth, inter-regionally, between important groupings (e.g., aboriginal/non-aboriginal), and among individuals (e.g., between the richest 1% and the rests and among quintiles of wealthier and poorer Canadians) has become more inequitable. Income inequality in Canada relative to other wealthy countries is poor (12th of 17 similar countries) and much worse now than in the 1980s.[90] Increasing inequities are increasingly viewed as inefficient in conventional economic terms, likely to contribute to social instability and hamper effective democratic engagement, and incompatible with progress towards sustainability.[91]

Other key factors influencing the Canadian context for pursuing lasting wellbeing include vulnerability to outside influences in a global economy. We are a trading nation in a world of unevenly expanding trade liberalization and still primitive global governance. We are, for example, affected by shifts of low-wage production to poorer countries, and by the mechanization and digitation of many remaining jobs lower skill jobs. As an exporter of raw materials, we are buffeted by commodity price swings and in the global market place generally, we are in competition with other producers all of whom are subject to the logic of market competition that encourages externalization and postponement of public costs. Moreover, we are especially dependent on the vagaries of the very large adjacent market of the US, which remains a substantial if declining power.

Internal governance challenges are also significant. Canada is a very big country with great diversities in climate, topography, demographics, ecologies, cultures and resources. The division of powers and responsibilities among federal, provincial, territorial, Aboriginal, municipal and other authorities has always been uncertain and contested. So have been allocations of functions and funding within governments.[92] Our record of inadequate inter-and intra-governmental collaboration on relatively simple matters points to larger difficulties in addressing the entwined complexities of transition towards more sustainable practices.[93]

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[90] Conference Board of Canada, "Income Inequality," (2014), available at http://www.conferenceboard.ca/hcp/details/society/income-inequality.aspx.

[91] Armine Yalnizyan, *The Rise of Canada's Richest 1%* (Ottawa: Canadian Centre for Policy Alternatives, 2010); Andrew G. Berg and Jonathan D. Ostry, "Equality and efficiency," *Finance and Development* 48:3 (2011), pp.12-15, available at http://www.imf.org/external/pubs/ft/fandd/2011/09/Berg.htm; Joseph E. Stiglitz, *The Great Divide: unequal societies and what we can do about them* (New York: Norton, 2015).

[92] Herman Bakvis and Grace Darlene Skogstad, eds., *Canadian Federalism: performance, effectiveness, and legitimacy*, 2nd ed. (Toronto: Oxford University Press, 2008).

[93] Kathryn Harrison, *Passing the Buck: federalism and Canadian environmental policy* (Vancouver: UBC Press, 1996); Alexis Bélanger, "Canadian federalism in the context of combating climate change," *Constitutional Forum/Forum Constitutionnel* 20:1 (2011), available at https://ejournals.library.ualberta.ca/index.php/constitutional_forum/article/view/12117.

Sharp declines in public trust in government both reflect and add to governance challenges. According to polling findings, public trust in the federal government "to do what is right … most/all of the time" declined in Canada from about 58% in 1969 to about 24% in 2013.[94]

These governance difficulties are now compounded by ideological tensions between advocates of smaller versus more active government. The many and varied differences between the two tendencies seem to reflect two basic positions on each side. Small government proponents argue that demands on public government are becoming impossibly costly, and that less fettered private sector actors will deliver desired benefits more effectively and efficiently. Supporters of more active government hold that poorly regulated markets tend to compromise the public interest and that action by public government is the only viable corrective. Both sides have long roots in the assumption that economic expansion is the main path to and test of governance success.[95] In times needing a transition to sustainability, both need more critical understanding of what forms of growth may be positive, how better informed and more effective governance capacities can be built and mobilized within and beyond governments, how market tools and motivations can be better directed, and how serious attention to long term needs/initiatives (for climate change mitigation, energy transition, infrastructure renewal, health promotion, etc.) can be entrenched.[96]

The big unmet need is not for resolution of the smaller versus more active government debate, but for more a comprehensive move to smarter governance for sustainability involving all players, motivations, tools and capacities (public, private and civil society), with integrated attention to effectiveness, efficiency and fairness; new routes to financial sustainability; and special care to protect the least advantaged.

Good signs

Happily, the daunting aspects of the Canadian context for developing next generation environmental assessment are accompanied by more cheerful aspects. Many Canadian communities, organizations, companies and government authorities have initiated promising efforts to reverse the slide into deeper unsustainability, despite the disinterest or hostility of some governments and vested interests. These initiatives include substantial and rising, though still inadequate, efforts in many different areas:

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[94] Don Lenihan and Carolyn Bennett, "Rebuilding public trust: open government and open dialogue in the Government of Canada," (Canada2020, 28 April 2015), available at http://canada2020.ca/open-government-open-dialogue-lenihan-bennett/.

[95] For example, Mitchell J Daniels, "Goldilocks, Canada, and the size of government," *Forbes* (12 February 2014), available at http://www.forbes.com/sites/danielmitchell/2014/02/12/goldilocks-canada-and-the-size-of-government/.

[96] Bryan G. Norton, *Sustainability: a philosophy of adaptive ecosystem management* (Chicago: University of Chicago Press, 2005), sections 5.4–5.6.

conservation of energy,[97] water,[98] soil[99] and biodiversity; transition to more sustainable renewable resource foundations for livelihoods and services, especially in electrical energy generation;[100] revival of waste reduction, reuse and recycling;[101] expansion of local food and more sustainable alternative food systems;[102] growth in socially responsible investing;[103] and the positive steps in urban form transition discussed above. It is also significant that many of the most innovative and committed efforts, for example to reduce GHG emissions, have been made at the local and regional levels even though public authorities are the larger provincial and national scale have more powerful tools and more direct responsibility for action.

Considerable potential is also visible in a variety of other areas where the changes reflect a shift in the distribution of influence. One is the increasing significance of non-government demands for demonstrations of corporate social responsibility.[104] Now conventionally defined widely to embrace the full suite of potential socio-ecological concerns,[105] corporate social responsibility is linked closely to the similarly rising

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[97] Huang Liming, Emdad Haque & Stephan Barg, "Public policy discourse, planning and measures toward sustainable energy strategies in Canada," *Renewable and Sustainable Energy Reviews* 12:1 (2008), pp.91-115.

[98] David Richard Boyd, *Unnatural Law: rethinking Canadian environmental law and policy* (Vancouver: UBC Press, 2003), pp.50–53.

[99] Thomas A. Fox, Thomas E. Barchyn and Chris H. Hugenholtz, "Successes of soil conservation in the Canadian Prairies highlighted by a historical decline in blowing dust," *Environmental Research Letters* 7:1 (2012) 014008.

[100] Jeroen C. J. M. van den Bergh and Frank Reinier Bruinsma, *Managing the Transition to Renewable Energy: theory and practice from local, regional and macro perspectives* (Cheltenham: Edward Elgar Publishing, 2008); Green Energy Act Alliance, "Green Energy Act Alliance: Ontario government replacing more coal plants with clean energy," (1 October 2010), available at http://www.greenenergyact.ca/Page.asp?PageID=122&ContentID=1446&SiteNodeID=215.

[101] Ida Ferrara and Paul Missios, "Recycling and Waste Diversion Effectiveness: Evidence from Canada," *Environmental and Resource Economics* 30:2 (2005), pp.221-238; William Mueller, "The effectiveness of recycling policy options: waste diversion or just diversions?" *Waste Management* 33:3 (2013), pp.508-518.

[102] Matt Loose, "Canadian food sustainability: 5 trends to watch", (Toronto Sustainability Speakers Series, 22 June 2011), available at http://ecoopportunity.net/2011/06/canadian-food-sustainability-5-trends-to-watch/.

[103] Responsible Investment Association, *Canadian Socially Responsible Investment Review 2012*, available at http://riacanada.ca/sri-review/.

[104] John O. Okpara & Samuel O. Idowu, eds., *Corporate Social Responsibility: challenges, opportunities and strategies for 21st century leaders* (Berlin/Heidelberg: Springer, 2013).

[105] This is evident, for example, in the global guidance standard for Corporate Social Responsibility, ISO 26000; see http://www.iso.org/iso/home/standards/iso26000.htm.

expectations for companies with major projects to obtain "social licence to operate".[106] The substance of and processes for demonstrating corporate social responsibility and gaining social licence are gradually being clarified through experience, and both may lead to formal agreements of various kinds. But both are phenomena of informal governance and represent continuing obligations rather than binding approvals. As such they are important examples of a practical shift from government-industry dealings to multi-player governance.[107]

An overlapping and somewhat more specific shift in the distribution of influence in Canada has emerged from a series of Supreme Court of Canada rulings on Aboriginal and treaty rights.[108] While the implications are far from settled – some of these decisions are very recent and more cases are working their way through the legal system – the rulings have confirmed a constitutionally-entrenched crown duty to consult with Aboriginal people whose rights may be affected by proposed activities, and to accommodate these rights in decision making. Federal and provincial governments responses have included changes in consultation policies and practices.[109] Substantive effects in particular cases are also emerging, though they have been accompanied by concerns about the downloading of important responsibilities to private sector proponents and about the imbalance of capacities in negotiations between Aboriginal governments and the Crown plus proponent corporations.[110] But even if the eventual results do not fulfill the Supreme Court's hopes for reconciliation of Crown and Aboriginal objectives, the context for environmental assessments and related decision making affecting Aboriginal and treaty rights has changed. And the advantage, however modest, has gone to people who have

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[106] Jason Prno and D. Scott Slocombe, "Exploring the origins of 'social license to operate' in the mining sector: perspectives from governance and sustainability theories," *Resources Policy* 37:2 (2012), pp.346-357.

[107] John O. Okpara & Samuel O. Idowu, eds., *Corporate Social Responsibility*: *challenges, opportunities and strategies for 21st Century Leaders* (Berlin/Heidelberg: Springer, 2013); Jason Prno and D. Scott Slocombe, "Exploring the origins of 'social license to operate' in the mining sector: perspectives from governance and sustainability theories," *Resources Policy* 37:2 (2012), pp.346-357.

[108] Key rulings include R.v. Sparrow (1990), 1 SCR 1075; Delgamuukw v. British Columbia (1997), 3 SCR 1010; Taku River Tlingit First Nation v. British Columbia (Project Assessment Director) (2004), SCC 73; Haida Nation v. British Columbia (Minister of Forests) (2004) SCC 73; and Tsilhqot'in Nation v. British Columbia (2014) SCC 44.

[109] See, for example, Aboriginal Affairs and Northern Development Canada *Aboriginal Consultation and Accommodation – Updated Guidelines for Federal Officials to Fulfill the Duty to Consult* (March 2011), available at http://www.aadnc-aandc.gc.ca/DAM/DAM-INTER-HQ/STA.

[110] Kaitlin Ritchie, "Issues associated with the implementation of the duty to consult and accommodate Aboriginal peoples: threatening the goals of reconciliation and meaningful consultation," *UBC Law Review* 46:2 (2013), pp.397-438, *www.oktlaw.com/wp-content/uploads/2014/02/krDutyToConsult.pdf.*

traditionally been more adept than other Canadians at recognizing the interdependence of human and environmental interests and retaining a long term commitment to the land.[111]

Implications for environmental assessment

Considered from a sustainability perspective – that is, with attention to the interacting social, economic and cultural as well as biophysical aspects of "environment" and with an eye to lasting wellbeing as well as more immediate imperatives – the primary implication of the Canadian context is that here too the proper basic purpose of assessment requirements and processes is to help reverse the slide into deeper unsustainability. Mitigating significant adverse effects and permitting invidious trade-offs where justified in the undefined circumstances is not sufficient.

The need for positive contributions to sustainability is not, however, a generalized global imposition. It is in different ways specific to particular places with their own challenges and opportunities and their own hopes for an attractive and viable future. Transition towards sustainability is just as pressing in growing urban centres as it is in remote communities facing the prospect of new mining projects, dams and/or pipelines. In each case the key issues include cumulative and overall effects and future implications. Sometimes big global issues, such as GHG emissions or global market uncertainties, will be important considerations. But in any event the crucial issues and options will be different. So will the most suitable means of ensuring broadly participative and well-informed engagement. The general sustainability objectives for assessments in Canada need to be specified for particular applications and the processes available for planning, deliberation and decision making need to be adaptable to a range of practical circumstances.[112]

Contextual differences for environmental assessment in Canada will include different versions of the usual needs for enhancing the resilience of desirable system qualities

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[111] Benjamin J. Richardson, "The ties that bind: Indigenous peoples and environmental governance," *Comparative Research in Law & Political Economy*, Research Paper No. 26 (2008), available at http://digitalcommons.osgoode.yorku.ca/clpe/197; Hadley Friedland, Practical engagement with indigenous legal traditions on environmental issues: some questions," *Symposium on Environment in the Courtroom: key environmental concepts and the unique nature of environmental damage* (University of Calgary, 23-24 March 2012), available at http://cirl.ca/files/cirl/hadley_friedland-en.pdf; Jessica Clogg and Hannah Askew, "Indigenous legal traditions and the future of environmental governance in Canada," paper presented to The *Journal of Environmental Law and Practice*'s 5th Biennial Conference, *'Après…le Déluge': Future Directions for Environmental Law and Policy in Canada*, Calgary and Kananaskis, 5-7 Alberta, June 2015.

[112] Robert B. Gibson, ed., *Sustainability Assessment: applications and opportunities* (London: Routledge/Earthscan, 2016); A John Sinclair, "Conceptualizing learning for sustainability through environmental assessment: critical reflections on 15 years of research," *Environmental Impact Assessment Review* 28:7 (2008), pp.415-428.

(valued socio-ecosystem components in environmental assessment terminology) and for fostering transition towards more sustainable approaches. Both may often involve as much enhancement of positive effects as avoidance or mitigation of adverse effects and risks.[113] Enhancing the desirable resilience of local communities, for example, may require mitigation of health risks, but also encouragement of economic diversification to reduce the risks of single sector dependence. Fostering needed transitions could include multiple initiatives to promote collaborative renewable energy projects, but also insistence on design and location criteria to avoid adverse effects on wildlife and other land or water users. Combined attention to mitigation and enhancement is therefore a practical imperative.

These in turn demand further combinations. A process that recognizes both resilience and transition needs, and that recommends both mitigation and enhancement responses, must also link ambition and precaution. Perhaps especially in Canada, where there is so much more land than confident understanding, anticipating and guiding future effects is an heroic venture. Environmental assessment must do what it can, accepting that we must move towards sustainability while also accepting that our ability to predict, much less direct change is weak. The consequence is insistence on broad precaution, not merely to protect what is valuable in the face of uncertain risks, but also to promote change in ways that minimize risk, anticipate surprise, facilitate reconsideration, allow reversal and revision, and assist the most vulnerable. These are key criteria not only for the selection among options for new or renewed undertakings, but also for assessment process design – especially for continued monitoring, review and revision though the life and legacy of assessed activities.

The realities of the Canadian context for environmental assessment also underline the common overlaps between individual projects and bigger issues. While individual mines, pipelines, landfills and urban road or transit projects involve significant possibilities for positive and adverse effects, they are rarely isolated. Their most important impacts are their contributions to cumulative effects on trajectories towards or away from desirable futures. This confirms the often noted but infrequently addressed needs for more emphasis on assessment at the strategic level of plans, policies and programmes, where the issues and options for responding to these bigger issues can be examined more effectively and efficiently.[114]

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[113] Fikret Berkes, Johan Colding and Carl Folke, *Navigating Social-Ecological Systems: building resilience for complexity and change* (Cambridge: Cambridge University Press, 2002).

[114] Bram F. Noble, "Promise and dismay: the state of strategic environmental assessment systems and practices in Canada," *Environmental Impact Assessment Review* 29:1 (2009), pp.66-75; Peter N. Duinker and Lorne A. Greig, "The impotence of cumulative effects assessment in Canada: ailments and ideas for redeployment," *Environmental Management* 37:2 (2006), pp.153-161; Robert B. Gibson et al., "Strengthening strategic environmental assessment in Canada: an evaluation of three basic options," *Journal of Environmental Law and Practice* 20:3 (2010), pp.175-211.

Finally, Canada's multi-jurisdictional context for environmental assessment presents a peculiar set of big difficulties and opportunities. The difficulties, including the needs for multi-authority collaboration and the potential for inefficiencies due overlapping application assessment processes, receive most attention. But overlapping mandates are well suited to the realities of intersecting and interactive assessment issues. Moreover, the overlaps can facilitate mobilization of complementary expertise, strengthen capacities and structures for collaboration, and provide openings for constructive innovation as has been illustrated by the advances in sustainability-based assessment by several joint review panels. Canada offers a broad diversity of application contexts in diverse regions, sectors, and socio-ecological conditions. That reality demands both fundamental consistency in approaches to assessment and considerable diversity to accommodate differences.[115]

In sum, virtually every aspect of the Canadian context for environmental assessment defies aspirations for simple solutions. Instead the circumstances require assessment processes that embrace complexity and tension, and evolve through federations of clarity and flexibility, preservation and change, mitigation and enhancement, individual projects and broader undertakings, ambition and precaution, harmony and diversity.

Strengths and limitations of current environmental assessment processes and practices in Canada as a base for next generation assessment

In its long and diverse history of environmental assessment, Canada has inadvertently tested many different approaches to environmental assessment and has revealed both the strengths and deficiencies of many possible components and options. Learning from that experiential testing is not an adequate guide for future action, since past efforts have at best only begun to confront the current and emerging demands of unsustainability and complexity. Nonetheless, a broad review of experience in light of these new demands is worthwhile. Eight issue areas are especially important.

1. The role for environmental assessment in sustainability-based public process

Environmental assessment processes are unevenly but generally well-established across Canada as the most visible public means of examining the merits and deficiencies of proposed projects.[116] As will be discussed below, existing assessment processes mostly

[115] Patricia Fitzpatrick and A. John Sinclair, "Multi-jurisdictional environmental impact assessment: Canadian experiences," *Environmental Impact Assessment Review* 29:4 (2009), pp.252-260; Minu Hemmati, *Multi-stakeholder Processes for Governance and Sustainability: beyond deadlock and conflict* (London: Routledge, 2002); Kathryn Harrison, *Passing the Buck: federalism and Canadian environmental policy* (Vancouver: UBC Press, 1996).

[116] A. John Sinclair and Meinhard Doelle, "Environmental assessment in Canada: encouraging decisions for sustainability," in Bruce Mitchell, ed., *Resource and*

fall well short of delivering sustainability-based decision making. Most aim only for mitigation[117] of foreseeable adverse effects and many are focused largely on biophysical matters or otherwise scoped too narrowly to cover the full range of sustainability concerns. However, there have been enough examples of sustainability-based environmental assessment to demonstrate potential.[118]

There are other possible vehicles. Quasi-assessment requirements are incorporated in some sectoral permitting processes (e.g., for aggregates extraction in Ontario[119]), a few of which are now formally integrated with environmental assessment requirements (e.g., reviews by the National Energy Board[120] and the Canadian Nuclear Safety Commission[121]). And there have long been overlaps between environmental assessment of projects and the project level components of broader planning regimes (e.g., for forest management and urban infrastructure planning). In all cases, under environmental assessment and other law, there are limitations – in the range of projects covered, the scope of issues covered, and the adequacy of public engagement opportunities provided as well as in the usual focus on mitigation rather than positive contribution to sustainability. Overall at the project level, however, environmental assessment is established as the best general candidate for a meaningful public process for comprehensive attention to the long term public interest in planning, approval and follow-up of major undertakings.

At the strategic level of policies, plans and programmes, reasonably comprehensive and open public processes have been uncommon and mostly ad hoc. Some notable efforts have been undertaken under legislated environmental assessment regimes. These include the timber/forest management class environmental assessment (1994) in Ontario,[122] the

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Environmental Management in Canada: Addressing Conflict and Uncertainty (Toronto: Oxford University Press, 2015), pp.112-141.

[117] Noble, Bram F., *Introduction to Environmental Impact Assessment: a guide to principles and practice*; 2nd edn. (Toronto: Oxford University Press, 2010), p.158.

[118] Robert B. Gibson, "Sustainability assessment in Canada," in Alan Bond, Angus Morrison-Saunders and Richard Howitt, eds*., Sustainability Assessment: pluralism, practice and progress* (London: Taylor and Francis, 2012), pp.167-183.

[119] Government of Ontario, "Aggregate resources" (26 June 2014), available at http://contrib.ontario.ca/rural-and-north/aggregate-resources.

[120] National Energy Board, Government of Canada, "NEB – Major Applications and Projects before the NEB," available at https://www.neb-one.gc.ca/pplctnflng/mjrpp/index-eng.html.

[121] Canadian Nuclear Safety Commission, "Browse hearing documents by date," available at http://nuclearsafety.gc.ca/eng/the-commission/hearings/documents_browse/index.cfm.

[122] Robert B. Gibson, "Ontario's class assessments: lessons for application to policies, plans and programs," in Steven A. Kennett, ed., *Law and Process in Environmental Management* (Calgary: Canadian Institute of Resources Law, 1994), pp.84-100.

salmon aquaculture review (1997) in British Columbia,[123] and 20-year forest management plan assessments in Saskatchewan.[124] In a non-legislated process complementary to its environmental assessment law, Québec has assigned its Bureau d'Audiences Publiques sur l'Environnement to carry out several significant public reviews at the strategic level, including ones on hazardous waste management (1990), forest protection (1991); large scale pig farming (2003) hydrocarbon exploration in the Gulf of St. Lawrence (2005), and shale gas fracking (2104).[125] And a few strategic assessments initiated under the federal government's generally secretive policy-based Cabinet Directive on Strategic Environmental Assessment have had allowed enough opportunity for public participation and scrutiny to qualify as open processes.[126] Other public strategic environmental assessments or their equivalents have been specially commissioned (e.g., the 2008 Fundy tidal energy review in Nova Scotia)[127] or undertaken under other law (e.g., several strategic assessments undertaken to guide decision making on offshore hydrocarbon exploration licensing by federal-provincial east coast offshore petroleum boards,[128] and

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[123] Carla Davidson, *The Salmon Aquaculture Review: facing ecological complexity and scientific uncertainty in the first policy level assessment under British Columbia's Environmental Assessment Act,* British Columbia case report no. 2 (Waterloo: Integrating the Environment into Planning for Growth Study, ERS/UWaterloo, August 1999), available at https://uwaterloo.ca/assessment-planning-project/british-columbia-case-studies.

[124] The Pasquia-Porcupine 20-year forest management plan case is discussed in Bram F. Noble, "Promise and dismay: the state of strategic environmental assessment systems and practices in Canada," *Environmental Impact Assessment Review* 29:1 (2009), pp.66-75.

[125] Michel Crowley and Nathalie Risse, "Strategic environmental Assessment in Québec: a work in progress," *International Association for Impact Assessment Conference, SEA Implementation and Practice,* Prague (September 2011), https://www.iaia.org/SpecialMeetings/prague11/proceedings/papers/SEA%20in%20Quebec-MCrowley-NRisse-Paper-final-Sept10-2011.pdf; Mario Gauthier and Louis Simard, "Public participation in strategic environmental assessment (SEA): critical review and the Québec approach," *Environmental Evaluators Network Forum,* Ottawa, 22-23 September 2009, available at http://www.environmentalevaluators.net/wp-content/uploads/2011/01/Public-Participation-in-Strategic-Environmental-Assessment-SEA.pdf

[126] Commissioner of the Environment and Sustainable Development, *2004 October Report* (Ottawa: Office of the Auditor General of Canada, 2004), paragraph 4.68, available at http://www.oag-bvg.gc.ca/internet/English/parl_cesd_200410_04_e_14917.html#ch4hd4b

[127] OEER, *Fundy Tidal Energy Strategic Environmental Assessment,* prepared for the Nova Scotia Department of Energy (April 2008), http://www.marinerenewables.ca/wp-content/uploads/2012/11/Fundy-Tidal-Energy-Strategic-Environmental-Assessment-Final-Report.pdf.

[128] Meinhard Doelle, Nigel Bankes and Louie Porta,"Using strategic environmental assessments to guide oil and gas exploration decisions: applying lessons learned from Atlantic Canada to the Beaufort Sea," *Review of European, Comparative and International Environmental Law* 22:1 (2013), pp.103-116.

the Manitoba Public Utilities Board's 2014 review of Manitoba Hydro's preferred development plan and alternatives[129]).

Much of the Canadian experience with comprehensive open processes at the strategic level has been in planning initiatives. Most notable have been innovative examples of multi-stakeholder regional land use planning and town and city planning including urban growth management strategy development.[130] These have rarely been called strategic environmental assessments, though they have often been rough equivalents and have sometimes demonstrated advanced practice (visionary, comprehensive of most sustainability objectives, effective in broad stakeholder and public engagement, centred on consideration of competing alternatives, able to recognize interactive effects, and designed in a tiered system to provide authoritative guidance to more specific undertakings but also to learn from them).[131]

The upshot at the project level is that environmental assessment regimes appear to be the best available general venues for next generation assessment at the project level. However, they are not the only possible or only desirable project level vehicles. Next generation improvements to assessment law should probably be accompanied by improvements to law and practice in areas not covered by environmental assessment. At the strategic level, legislated environmental assessment requirements are evidently needed to fill a large void. Current generation environmental assessment has in place no consistent means to give authoritative attention to cumulative effects and broad alternatives that are not effectively or efficiently addressed at the project level and to provide a clearer base for project level planning and decision making. In some areas, however, the strategic level is equivalent is already provided by reasonably advanced planning regimes that have much to offer (e.g., as examples of tiered decision making).[132] This suggests that next generation environmental assessment will need to be designed not

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[129] The Public Utilities Board, *Review of Manitoba Hydro's Preferred Development Plan – Report on the Needs for and Alternatives to (NFAT*) (Winnipeg: PUB, June 2014), available at www.pub.gov.mb.ca/nfat/pdf/finalreport_pdp.pdf.

[130] See, for example, Michelle Boyle, Robert B. Gibson and Deborah Curran, "If not here, then perhaps not anywhere: urban growth management as a tool for sustainability planning in British Columbia's Capital Regional District," *Local Environment* 9:1 (2004), pp.21-43. Versions of sectoral planning in some areas (e.g., crown land and forest management planning and master planning for parks and protected areas) may also qualify. See, for example, Tom Gunton, J. Chad Day and Peter W. Williams, "Land and water planning in BC in the 1990s: lessons on more inclusive approaches," *Environments* 25:2/3 (1998), pp.1-7.

[131] Robert B. Gibson et al., "Strengthening strategic environmental assessment in Canada: an evaluation of three basic options" *Journal of Environmental Law and Practice* 20:3 (2010), pp.175-211; Bram F. Noble, "Strategic environmental assessment: what is it? and what makes it strategic?" *Journal of Environmental Assessment Policy and Management* 2:2 (2000), pp.203-224.

[132] Ralf Aschemann et al., *Handbook of Strategic Environmental Assessment* (London: Routledge, 2012), chapter 3.

only for incorporation in legislated environmental assessment regimes but also for collaboration with, and integration into, essentially equivalent strategic processes in planning and elsewhere.

2. Alignment with the purposes and scope of sustainability-based assessment

As is common elsewhere, environmental assessment practice in Canada has rarely aimed to deliver positive contributions to sustainability. Most of the focus has been on mitigation of significant adverse effects, with little if any regard for restitution, rehabilitation and regeneration, or enhancement of positive effects.[133] Attention to biophysical effects has predominated, sometimes to the exclusion of other key sustainability considerations. Identification of cumulative effects is explicitly required in some jurisdictions and is often included elsewhere, but the record of cumulative effects assessment remains weak, in part because of inherent difficulties of such assessment in project-focused deliberations.[134] Long term effects and lasting project legacies get inconsistent coverage, even in cases involving non-renewable resource exploitation.

In some cases, modest objectives in practice have reflected narrow statements of purpose and legislated mandates that are centred on protection of the biophysical environment. That is, arguably, the case with the environmental assessment regimes in Saskatchewan[135] and Prince Edward Island,[136] for example. However, most environment assessment law in Canada is not as limiting as predominant practice would suggest.

Territorial assessment laws, reflecting their origins in Aboriginal land claim agreements, integrate attention to biophysical, socio-economic and cultural concerns.[137] In Ontario, the *Environmental Assessment Act* has a clearly positive purpose – "the betterment of the people of the whole or any part of Ontario"[138] – and the scope of considerations to be addressed extends broadly to cover social, economic and cultural as well as biophysical matters and their combinations and interrelations.[139] Alberta's environmental assessment legislation is similarly scoped and, though its purposes section gives particular attention to mitigation of adverse effects, it also includes support for "the

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[133] Robert B. Gibson et al., *Sustainability Assessment: Criteria and Processes* (London: Earthscan, 2005), chapter 2.

[134] Peter N. Duinker and Lorne A. Greig, "The impotence of cumulative effects assessment in Canada: ailments and ideas for redeployment" *Environmental Management* 37:2 (2006), pp.153-161.

[135] Chapter E-10.1 of the Statutes of Saskatchewan 1979-80 (effective August 25, 1980) as amended by the Statutes of Saskatchewan, 1983 c.77; 1988-89 c.42 and c.55; 1996 c.F-19.1; 2002, c.C-11.1; 2010, c.11; and 2013, c.27

[136] PEI, *Environmental Protection Act*, R.S.P.E.I. 1988, c. E-9

[137] See, for example, the *Yukon Environmental and Socio-economic Assessment Act* (S.C. 2003, c. 7);

[138] Ontario, *Environmental Assessment Act,* s.2.

[139] Ontario, *Environmental Assessment Act,* s.1(1).

goals of environmental protection and sustainable development."[140] Manitoba's law emphasizes attention to biophysical effects (and social-economic implications of environmental effects) but it defines "environment" to include humans[141] and its purpose is "to sustain a high quality of life … for this and future generations."[142] The assessment laws of Alberta and Newfoundland and Labrador's law not only define "environment" broadly but also address beneficial as well as harmful effects.[143] Even the constricted new *Canadian Environmental Assessment Act, 2012* retains a purpose to contribute to sustainable development[144] and openings for coverage of matters beyond its focus on the narrow suite of biophysical considerations under exclusive federal jurisdiction.

In addition to legislated purposes that refer to supporting sustainable development, several jurisdictions have offered some clarification of what that entails. For example, Manitoba has a complementary though not yet explicitly linked *Sustainability Development Act* that provides further potential support for sustainability-based assessment.[145] Nova Scotia's *Environment Act* includes section setting out goals for the environmental assessment process, including eight principles of sustainable development.[146]

Overall, the basic purposes and scope provisions of existing Canadian legislation are uneven and incomplete as foundations for sustainability-based assessment. Most of the laws are, however, potentially open to more ambitious assessment practice than has been common to date.[147] On that fundamental matter, the step from current to next generation law is shorter than might have been expected.

At the same time, the current deficiencies are many in law as well as practice. Certainly consistency and clarity are lacking. While most existing environmental assessment laws are open to broad interpretation and support for higher objectives, most lack firm commitment to enhancement of long term wellbeing (positive sustainability effects as well as avoidance of significant risks and damages). Even where admirable assessment purposes are entrenched in the law, they tend not to be translated to practice. For example, attention to purposes is often required in individual assessments, but purpose statements based entirely on proponent self-interest have often been accepted without any

[140] Alberta, *Environmental Protection and Enhancement Act,* s.40.
[141] Manitoba, *Environment Act,* s. 1(2).
[142] Manitoba, *Environment Act,* s. 1(1).
[143] Newfoundland and Labrador, *Environmental Protection Act*, SNL, 2002, c.E-14.2; and Newfoundland and Labrador, Environmental Assessment Regulations, 2003, N.L.R. 54/03 (Regulations), s.8; Alberta, *Environmental Protection and Enhancement Act,* RSA 2000, c.E-12, s.49(d).
[144] Canada, *Canadian Environmental Assessment Act, 2012,* s.4(1).
[145] Manitoba, *The Sustainable Development Act, 2014*, C.C.S.M. c. S270.
[146] Nova Scotia, *Environment Act*, SNS, 1994-95, c. 1, s.2(h).
[147] David Richard Boyd, *Unnatural Law: rethinking Canadian environmental law and policy* (Vancouver: UBC Press, 2003), section 4.3.

accompanying statement articulating the socio-ecological need and rationale that should guide a proceeding meant to serve the public interest.

Many Canadian assessment regimes fail to ensure serious identification and comparison of potentially viable and desirable alternatives other than the null option, and those that do rarely provide a firm base for effective comparative evaluation of alternatives.[148] Beyond Nova Scotia's eight principles of sustainable development, no law translates broad objectives to guiding criteria for practical applications or includes a process for specifying evaluation and decision criteria for particular cases and contexts. No law provides explicit attention to trade-offs and none attempts to define trade-off rules. Also, with a few exceptions, Canadian environmental assessment regimes suffer from the broader absence of an established set of well-conceived sustainability strategies or other guidance from regional/local discussions about desirable futures and ways of getting there.[149]

3. Application to project and strategic level undertakings with potentially significant implications for sustainability

Of all the many important undertakings that should be conceived, selected, designed and carried out with careful attention to the environment (narrowly and broadly defined), environmental assessment in Canada has chosen of focus on physical projects. This has been common practice globally. Roads, mines, dams, landfills and the like are appropriate and almost always crucial subjects for assessment. They are big disruptors of the landscape and often have major implications for communities as well. In many cases assessments of these projects has spurred significant public engagement, associated learning, and at least modest improvements in project design and implementation.[150] But plenty of other undertakings have at least equivalent potential for significant adverse and positive effects, and for raising questions about whether they are desirable, or the best option, in the public interest. Decisions about opening up new areas for hydrocarbon exploration or permitting ocean draggers in the fishery would seem to merit public assessment. So would decisions on what to include in the building code and whether to tax carbon emissions instead of the income of people with modest wages.

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[148] Peter N. Duinker and Lorne A. Greig, "Scenario analysis in environmental impact assessment: improving explorations of the future," *Environmental Impact Assessment Review* 27:3 (2007), pp.206-219; Shawn R. Francis and Jeff Hamm, "Looking forward: using scenario modeling to support regional land use planning in northern Yukon, Canada," *Ecology and Society* 16:4 (2011), article 18; Garry D. Peterson, Graeme S. Cumming and Stephen R. Carpenter, "Scenario planning: a tool for conservation in an uncertain world," *Conservation Biology* 17:2 (2003) 358-366.

[149] A partial exception is Manitoba, where principles and guidelines drawn from the province's *Sustainable Development Act* have been applied in environmental assessment deliberations by the Clean Environment Commission.

[150] Robert B. Gibson, ed., *Sustainability Assessment: applications and opportunities* (London: Routledge/Earthscan, 2016).

In most Canadian jurisdictions, application decisions are guided by lists that set out categories of major projects subject to assessment obligations. The various lists feature large discrepancies about what is and is not included.[151] A few jurisdictions, most notably Ontario, also require assessment of smaller undertakings. Ontario defines certain categories of smaller undertakings – mostly involving public sector proponents (e.g., municipal road and waterworks projects) – and applies minimally onerous but still open and broadly scoped processes set out in "class assessment" documents for each category.[152] As discussed above, legislated openings for strategic level assessments of policies, plans and programmes or the equivalent are rare and infrequently used where available.[153]

Alternatives to the list-based approach include automatic coverage of all undertakings meeting a general set of criteria (e.g., all physical projects or plans proposed by a public sector body) unless specifically exempted, and/or designation of particular undertakings as they emerge if they are highly controversial or otherwise seem to be environmentally significant. The lists and all-in-unless-exempted-out options have the considerable advantage of anticipatory definition of what undertakings are subject to assessment requirements. Because this gives proponents a firm, pre-planning base for understanding their obligations, it facilitates early initiation of environmental assessment work and integration of the findings in the often crucial early decision making about preferred options and designs.[154]

Designations may be guided by established principles, characteristics and/or criteria for applying assessment requirements (as they are in Saskatchewan[155]). A record of consistent designation practice can also help proponents and other participants to predict what undertakings will be covered and prepare accordingly Nevertheless, with designation-based approaches, there is a greater risk that projects will be already at the detailed design or even licensing approval stage before application of assessment requirements is determined. The results of late assessment are inevitably either inefficient

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[151] See Deborah Carver, Robert B. Gibson, Jessie Irving and Erin Burbidge, *Inter-jurisdictional Coordination of EA: challenges and opportunities arising from differences among provincial and territorial assessment requirements and processes,* a commissioned report prepared for the Canadian Environmental Assessment Agency, through the Environmental Planning and Assessment Caucus, 20 November 2010, available at http://rcen.ca/caucus/environmental-planning-and-assessment/resources.

[152] Government of Ontario, "Preparing environmental assessments," available at http://www.ontario.ca/environment-and-energy/preparing-environmental-assessments.

[153] See discussion on pp.27-29, above

[154] Rachel Forbes and West Coast Environmental Law Association, *Re: Recommended Amendments to the Regulations Designating Physical Activities* (2012), available at http://www.wcel.org/sites/default/files/publications/WCEL%20Submission%20CEAA%20Regulations%20August%2024%202012.pdf.

[155] Saskatchewan, *Environmental Assessment Act*, s. 2(d), available at http://www.qp.gov.sk.ca/documents/English/Statutes/Statutes/E10-1.pdf.

(requiring revisiting of project planning steps) or marginal (focused on tweaking the completed designs).[156]

List-based approaches also have problems. The most common deficiencies are unduly short lists (or categories with high thresholds) that effectively exempt many projects that may have significant effects. Lists suffer from focusing on project characteristics without attention to the context and interactions between the project and the context. This is an evident problem where the potentially affected environment (biophysical and/or human) is already heavily stressed or otherwise is especially vulnerable to adverse effects. Attention to cumulative effects is also generally absent from list-based rules. For example, under British Columbia's rules, the process covers hydro-electric power projects only if they have generating capacity of 50 MW or above. Two or more slightly smaller projects proposed for the same river are exempt.[157] Lists attempt to provide simple rules for assessment application in a complex world.

Case-specific peculiarities must still be recognized and accommodated. This can be done in two basic ways. The first is to provide consistent standard rules, accompanied by more specific guidance for cases in major sectors or regions, and leave the interpretation to proponents. That can work well, especially where proponents consult well with governments, experts and other stakeholders, and where expectations for the type of undertaking are already reasonably clear from earlier public debate.[158] Nevertheless, many jurisdictions choose instead to set out case-specific rules after the decision that assessment requirements apply. This can take the form of a "screening," which determines what specific requirements will be imposed. The specifics identify the review process to be used and the expected contents of the proponent's assessment submission (whether alternatives must be identified and compared, what issues must be addressed, sometimes what methodologies must be applied).[159]

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[156] Rachel Forbes and West Coast Environmental Law Association, *Re: Recommended Amendments to the Regulations Designating Physical Activities* (2012); Commissioner of the Environment and Sustainable Development, *2014 Fall Report* (Ottawa: Office of the Auditor General of Canada, 2014), chapter 4, "Implementation of the Canadian Environmental Assessment Act, 2012", sec 4.18–4.30, available at http://www.oag-bvg.gc.ca/internet/English/parl_cesd_201410_04_e_39851.html#hd4a.

[157] British Columbia, *Environmental Assessment Act,* Reviewable Projects Regulation, Table 7, B.C. Reg. 370/2002, OC 1156/2002, available at http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/13_370_2002.

[158] Robert B. Gibson, "Application of a contribution to sustainability test by the Joint Review Panel for the Canadian Mackenzie Gas Project," *Impact Assessment and Project Appraisal* 29:3 (2011), pp.231-244.

[159] Rachel Forbes et al., "Environmental assessment law for a healthy, secure and sustainable Canada: a checklist for strong environmental laws," (West Coast Environmental Law, 2012), available at http://www.wcel.org/sites/default/files/publications/A%20Checklist%20for%20Strong%20Environmental%20Laws%20February%202012.pdf.

These case-specific rules may be provided in project terms of reference and/or "guidelines for the proponent for preparation of the environmental impact assessment" under the *Canadian Environmental Assessment Act, 2012* and its predecessor (and in similar case-specific documents in other assessment regimes). If the preparation of such guidelines came nearer the beginning of proponent deliberations and used a more collaborative and accountable process than is common in practice, the exercise could be a valuable early means of identifying objectives, options and issues. In usual current practice, the guidance comes after proponents have settled on a project proposal, have completed most assessment work and are inclined to use the guidance chiefly for organizing the presentation of an assessment submission that is already mostly drafted.[160]

In most jurisdictions, the variety of assessment needs is also accommodated by provision of different assessment streams for more and less significant undertakings. Streams for more significant undertakings may involve a broader scope of assessment (e.g., more attention to non-biophysical effects or to alternatives), longer timelines, more rigorous review by government agencies, more openings for effective public engagement including public hearings, final decision making by a higher authority (e.g., by a minister rather than by a senior official), and/or opportunities for appeal.[161] Stream differences vary greatly among Canadian jurisdictions.[162]

Perhaps the most illuminating and unique approach is taken by Ontario, which offers individual assessments for "large-scale, complex projects with the potential for significant environmental effects" and streamlined assessments for "routine projects that have predictable and manageable environmental effects."[163] The streamlined stream has several forms, reflecting the varying "class assessments" for different categories of routine projects. But it is distinguished from the full individual assessment stream chiefly by relying on public rather than government agency reviewers and dispensing with ministerial involvement or approval in individual cases unless dissatisfied members of the

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[160] The problem is inherent in the chronology of process steps. See, for example, Canadian Environmental Assessment Agency, *Basics of Environmental Assessment*, especially the section "What are the main steps of an environmental assessment process conducted by the Agency?" available at http://www.ceaa.gc.ca/default.asp?lang=En&n=B053F859-1#agency01.

[161] Joe Weston, "EIA, decision-making theory and screening and scoping in UK practice," *Journal of Environmental Planning and Management* 43:2 (2000), pp.185-203; Meinhard Doelle, "The implications of the SCC Red Chris decision in Canada," *Journal of Environmental Law and Practice* 20 (2010), pp.161-172; Angus Morrison-Saunders and Jos Arts, *Assessing Impact: handbook of EIA and SEA follow-up* (London: Earthscan, 2004); Alan Bond, Jenny Pope, Angus Morrison-Saunders, Francois Retief and Jill A.E. Gunn, "Impact assessment: eroding benefits through streamlining?" *Environmental Impact Assessment Review* 45 (2014), pp.46-53.

[162] David Richard Boyd, *Unnatural Law: Rethinking Canadian Environmental Law and Policy* (Vancouver: UBC Press, 2003), chap 3.

[163] Government of Ontario, "Preparing environmental assessments," available at http://www.ontario.ca/environment-and-energy/preparing-environmental-assessments.

public seek provincial intervention.[164] The standard broad scope of Ontario assessments – covering purposes, alternatives and the full range of socio-economic and biophysical effects issues – is retained for these modest undertakings. Moreover, the streamlined process features public notice and opportunity for participation at several early planning stages, including after purposes and alternatives have been identified but before a preferred alternative has been selected.[165] While the approach has weaknesses, it demonstrates the feasibility of broadly scoped assessment for small as well as major undertakings and the potential for heavy reliance on engaged public reviewers.

All of these decisions on application and specification of assessment requirements are made more difficult by the general absence of broader guidance on what kinds of undertakings in what contexts are likely to raise what sorts of issues and consequently demand what form or stream of assessment. Where those questions are unanswered, the understandable response is to revert to discretionary and late means of decision making on application and specification of requirements for particular cases. Unfortunately, that response frustrates proponents, who call from greater process certainty, and other assessment players, who typically want to influence project decision making from the earliest stages of thinking about purposes, issues and alternatives.

One route to clear and credible early guidance for project assessments lies in using broader sectoral and regional policy making and planning to guide project level planning and assessment. Urban planning has long used a tiered approach to decision making wherein broad provincial policies guide the preparation of regional plans. These in turn guide municipal plans, which then set the rules for more specific undertakings (e.g., plans of subdivision).[166] Similarly tiered processes are evident in other sectors (e.g., forest management planning in many jurisdictions).[167] In environmental assessment, however, tiered planning and assessment is rare. The three territories have regional planning regimes that provide a defined context for project assessments.[168] In the provinces, urban

[164] Concerned citizens may appeal to the minister to bump-up an unsatisfactory streamlined case to full individual assessment (officially a "Part II order"). While such appeals are almost never granted, they lead in many cases for further deliberations and in some cases to significant project revisions.
[165] Government of Ontario, "Preparing environmental assessments," available at http://www.ontario.ca/environment-and-energy/preparing-environmental-assessments.
[166] J Barry Cullingworth, ed., *Urban and Regional Planning in Canada* (New Brunswick: Transaction Publishers, 1987).
[167] Jean-François Fortier et al., "An inventory of collaborative arrangements between Aboriginal peoples and the Canadian forest sector: linking policies to diversification in forms of engagement," *Journal of Environmental Management* 119 (2013), pp.47-55; Robert B. Gibson, "Ontario's class assessments: lessons for application to policies, plans and programs," in Steven A. Kennett, ed., *Law and Process in Environmental Management* (Calgary: Canadian Institute of Resources Law, 1994), pp.84-100.
[168] The tiering arrangements do not eliminate conflict, however. One example is the controversy over a proposal by Baffinland Iron Mines for an exemption from provisions of the North Baffin Regional Land Use Plan to permit approval of a new ore shipping

and regional plans sometimes do provide *de facto* guidance for particular project assessments, especially for road and water infrastructure undertakings. Some efforts have been made to link strategic planning for electric power systems to individual project assessments[169] and even to use strategic environmental assessment to guide project level decision making in the electricity sector.[170] But tiered strategic and project level assessments are mostly absent in Canadian environmental assessment practice.

As has been noted above, few Canadian jurisdictions provide a legislated process for strategic level environmental assessments and those that have openings (e.g., British Columbia and Ontario) have mostly refrained from using them.[171] Beyond the territories, legislated provisions for authoritative links between other planning processes and project-level environmental assessment are also generally absent.

It is nonetheless possible to identify two additional hesitant steps in the direction of more frequent and authoritative strategic assessment and more effectively linked strategic and project assessment. The first is the federal Cabinet Directive on Strategic Environmental Assessment, introduced in 1993.[172] Because the Directive's influence is discretionary and its process is not transparent, it cannot in its present form provide credible guidance for project level assessments. But it applies to all environmentally significant policies, plans and programmes that require federal Cabinet approval and has accustomed federal authorities to the strategic assessment concept. Prior to the election of

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proposal that contravenes the plan. See Jim Bell, "Baffinland wants AAND minister to over-ride the Nunavut Planning Commission," *Nunatsiaq Online*, 22 May 2015, available at http://www.nunatsiaqonline.ca/stories/article/65674inuit_org_wants_valcourt_to_reject_baffinland_request_for_land_use_exe/.

[169] For example, in Manitoba with the Clean Environment Commission's environmental assessment review of the proposed Keeyask Dam and the Manitoba Public Utilities Board's review of Manitoba Hydro's preferred development plan and alternatives, which included the Keeyask project. See www.pub.gov.mb.ca/nfat/pdf/finalreport_pdp.pdf.

[170] This was the case with the strategic environmental assessment of Fundy tidal energy options. See OEER, *Fundy Tidal Energy Strategic Environmental Assessment,* prepared for the Nova Scotia Department of Energy (April 2008), available at http://www.marinerenewables.ca/wp-content/uploads/2012/11/Fundy-Tidal-Energy-Strategic-Environmental-Assessment-Final-Report.pdf.

[171] Bram F. Noble, "Promise and dismay: the state of strategic environmental assessment systems and practices in Canada," *Environmental Impact Assessment Review* 29:1 (2009), pp.66-75.

[172] Canadian Environmental Assessment Agency Government of Canada, "The Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals - Strategic Environmental Assessment," (CEAA, 5 December 2008), available at http://www.ceaa.gc.ca/default.asp?lang=En&n=b3186435-1.

the current federal government, federal authorities also began an examination of options for more authoritative strategic level assessment at the federal level.[173]

The second hesitant step is the slowly emerging recognition that regional and sectoral approaches are needed to address big issues (including questions about basic purposes and broad alternatives) that emerge but cannot be addressed well in project assessments, and the cumulative effects of multiple projects, including cumulative effects that cross jurisdictional boundaries and mandates. Several early strategic level assessments undertaken under environmental assessment law in Canada were initiated to deal with major questions raised in project assessments.[174] Needs for regional strategic assessments were formally flagged by the Canadian Council of Environment Ministers in 2009.[175] They have since been the topic of growing numbers of regional assessment requests, including those concerning the Ring of Fire mining area in northern Ontario[176] and the multiple liquid natural gas projects in northern British Columbia.[177] In the latter case, a request for regional assessment was combined with a request for a sectoral assessment of LNG developments in the province. In these and similar cases, strategic level assessments are not proposed as mere studies of cumulative effects. Instead they have been advocated as comprehensive and broadly participative means of addressing long term purposes, alternative development options and cumulative effects in situations where it is clear that project-based assessments do not provide appropriate venues and need credibly developed guidance.[178]

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[173] The examination included establishment of a strategic assessment sub-committee of the federal Regulatory Advisory Committee on Environmental Assessment, and preparation of a report subsequently published as Robert B. Gibson, Hugh Benevides, Meinhard Doelle and Denis Kirchhoff, "Strengthening strategic environmental assessment in Canada: an evaluation of three basic options," *Journal of Environmental Law and Practice* 20:3 (2010), pp.175-211.

[174] An illuminating example was the strategic level environmental assessment of Ontario Hydro's Demand/Supply Plan in 1992-93, which revealed the indefensibility of the overall power system planning assumptions that the proponent had used in earlier assessments on major transmission line projects.

[175] Canadian Council of Environment Ministers, *Regional Strategic Environmental Assessment in Canada: principles and guidance* (Winnipeg: CCME, 2009), http://www.ccme.ca/files/Resources/enviro_assessment/rsea_principles_guidance_e.pdf

[176] Cheryl Chetkiewicz and Anastasia Lintner, *Getting it Right in Ontario's Far North: the need for regional strategic environmental assessment in the Ring of Fire [Wawangajing]* (Toronto: Ecojustice and WCS Canada, May 2014).

[177] Calvin Sandborn, et al., Environmental Law Centre University of Victoria, request to The Honourable Leona Aglukkaq, Minister of the Environment (Canada) and The Honourable Mary Polak Minister of the Environment (British Columbia) for a regional study of the effects of liquid natural gas (LNG) development in northern British Columbia and for a Strategic Economic and Environmental Assessment of LNG development in British Columbia, 1 August 2013.

[178] Cheryl Chetkiewicz & Anastasia Lintner, *Getting it Right in Ontario's Far North: the need for regional strategic environmental assessment in the Ring of Fire [Wawangajing]*

So far, commitment to consistent use of authoritative strategic level assessment has not been demonstrated in Canada, with the exception of linked planning and assessment in the territories.[179] But the need is increasingly evident and extension of assessment application to the strategic level is likely to be a key component of next generation assessment regimes – both to provide guidance for effective early initiation of project assessments, and to deal with big issues that cannot be addressed adequately at the project level.

4. Facilitation of public engagement

Environmental assessment processes in Canada are typically more open to public scrutiny and participation than other deliberations leading to decisions on important undertakings. All federal, provincial and territorial environmental assessment legislation in Canada includes at least some practical measures for participation. The key public participation provisions in law or regulation fall into five central categories: access to information, notice of project submission, opportunities for public comment, public hearings and participant assistance.[180] Like other aspects of environmental assessment law and practice, each of these core elements has evolved and continues to evolve differently in the various jurisdictions. Also, the practical value of these provisions depends heavily on the effects of other process components including the scope and timing of engagement opportunities. And all are influenced by broader developments, for example in law and practice concerning the access to justice issues, including access to decision makers, legislative guidance and principles for decision making, requirements to give reasons for decisions, and the ability to challenge decisions. Nevertheless, the established role of environmental assessment as the main vehicle for public engagement in deliberations about major undertakings is a basic foundation for its next generation potential.

Access to information has long been recognized in Canada as being central to effective participation. All jurisdictions have provided at least some access to environmental assessment case information through some form of public registry system, usually a public library, since the advent of environmental assessment. More recently, government decision makers and assessment administrators have adopted electronic access through the internet as their main tool for disseminating assessment registry documents and other

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(Ecojustice & WCS Canada, 2014); Robert B. Gibson et al., "Strengthening strategic environmental assessment in Canada: an evaluation of three basic options" *Journal of Environmental Law and Practice* 20:3 (2010), pp.175-211; A Chaker, K. El-Fadl, L. Chamas and B. Hatjian, "A review of strategic environmental assessment in 12 selected countries," *Environmental Impact Assessment Review* 26:1 (2006), pp.15-56.

[179] See, for example, *Nunavut Planning and Project Assessment Act,* SC (2013), c.14, s.2, available at http://laws-lois.justice.gc.ca/PDF/N-28.75.pdf

[180] A. John Sinclair and Alan P. Diduck, "Public participation in Canadian environmental assessment: enduring challenges and future directions," in Kevin S. Hanna, ed., *Environmental Impact Assessment: Practice and Participation*, 3rd edn. (Toronto: Oxford University Press, 2016).

information about a proposed project.[181] As a means for rapid and convenient information sharing (by people with reliable internet access), internet-linked registries or the equivalent can be used effectively to provide the public and other stakeholders timely access to the information needed for informed engagement.[182] Access to information is, however, a prerequisite for, not a guarantor of, effective public participation.

Public notice that a project is, or may be, subject to assessment requirements is always important. Initial notice is often accompanied by a first formal opportunity for public comment. As noted above, however, the practical value of that opportunity depends significantly on whether the notice and invitation for comment come helpfully at the beginning of project planning, when many options remain open, or after an advanced version of project design has been submitted for approval. Early notice is most useful in broadly scoped assessment processes that include critical review of needs, purposes and alternatives, rather than focus exclusively on the effects of proposed projects.[183]

In the absence of early notice and opportunities to comment in government-run consulting windows, experienced proponents may engage in their own consultations with relevant authorities and publics. In many jurisdictions, proponents are encouraged by regulators to start their consultation processes early, well before the formal start of the assessment process. Proponents can obtain useful information through these consultations and public participants may be able to influence some early project decisions.[184] However, there are also evident limitations to consultation practices that leave early participation processes to be framed, run and reported on by the proponents seeking approval for the project in question.

Concerns about narrow scoping and process bias also apply to later formal openings for public comment and engagement in deliberative participation. The timing and substance of these openings vary among jurisdictions but often include invitations for comments on draft terms of reference or guidelines for the proponent's preparation of assessment submissions (environmental impact statements or the equivalent) are released, on the proponent's submitted environmental impact statement and on draft government review conclusions. Some jurisdictions, notable Canada and Manitoba, provide for use of alternative dispute resolution mechanisms with associated openings for participation in case deliberations. These options are, however, used rarely with limited scope and

[181] A. John Sinclair, T.J. Peirson-Smith and M. Boerchers, "The role of e-governance and social media in creating platforms for meaningful participation in environmental assessment," *Proceedings of the International Conference for E-Democracy and Open Government – Asia 2014*, pp.123-126.
[182] Lisa F. Odparlik and Johann Köppel, "Access to information and the role of environmental assessment registries for public participation," *Impact Assessment and Project Appraisal,* 31:4 (2013), pp.324-331.
[183] Kevin S. Hanna, ed., *Environmental Impact Assessment: practice and participation,* 3rd edn. (Toronto: Oxford University Press, 2016).
[184] A. John Sinclair, "Public involvement in EA in Canada: a transformative learning perspective," *Environmental Impact Assessment Revie*w 21:2 (2001), pp.113-136.

objectives.[185] Further participative opportunities are involved in cases assigned to public hearing reviews (see below), and sometimes in the establishment and/or review of findings from follow-up and monitoring programs.

At all of these stages, much depends on the extent to which public notice and comment opportunities are offered as symbolic gestures to meet legal requirements or taken seriously as means of informing and engaging the public in influencing substantive deliberations. The Canadian experience in progress towards effective public engagement has been mixed. In the early years of environmental assessment, public involvement was frequently treated as an uncomfortable intrusion in what had traditionally been closed deliberations between proponents and government approval authorities.[186] With practice and mutual learning, public engagement performance and recognition of its value improved. Recently, however, tensions have grown as pressures for process "streamlining" (often taken to mean fewer and faster assessment reviews) confront rising public scepticism and expectations for influence through participative opportunity and, in the case of Aboriginal participants, clearer recognition of the Crown's duty to consult and accommodate.[187]

Streamlining initiatives have treated public participation openings as major sources of delay and inefficiency, even though the longest and least justifiable delays are frequently due to gaps and other inadequacies in proponent submissions, which entail suspension of proceedings while the requested information is gathered, or due to slow processes within government, for example in waiting for a minister's decision.[188] Streamlining effects of participative opportunities have included narrowing of assessment scope, imposition of shorter time slots for preparation and submission of comments, and greater reliance on

[185] Meinhard Doelle and A. John Sinclair, "Mediation in environmental assessments in Canada: unfulfilled promise," *Dalhousie Law Journal* 33:1 (2010), pp.117-152.
[186] Panel on Public Participation in Environmental Assessment and Decision Making, et al., *Public Participation in Environmental Assessment and Decision Making* (Washington: National Academies Press, 2008); Judith E. Innes and David E. Booher, "Reframing public participation: strategies for the 21st century," (University of California at Berkeley: Institute of Urban and Regional Development, 2005), available at http://escholarship.org/uc/item/4gr9b2v5.
[187] Alan Bond, Jenny Pope, Angus Morrison-Saunders, Francois Retief and Jill A.E. Gunn, "Impact assessment: eroding benefits through streamlining?" *Environmental Impact Assessment Review* 45 (2014), pp.46-53; Ciaran O'Faircheallaigh and Tony Corbett, "Indigenous participation in environmental management of mining projects: The role of negotiated agreements," *Environmental Politics* 14:5 (2005), pp.629-747.
[188] For example, in the case of the Joint Panel Review of the Lower Churchill Hydroelectric Generation Project, the panel took about seven months to review the proponent's environmental impact statement and other information, hold the hearings and write its report. The proponent took almost two years to provide the information it was requested to provide, including the environmental impact statement and responses to four rounds of information requests from the panel. The government then took six months to decide after the panel filed its report.

soliciting written comment on a project rather than using forms of face-to-face engagement. Moreover, where public comments are sought, submissions typically receive no response beyond acknowledgement of receipt and are discounted without explanation.

These disappointing developments have been met, however, by persistent demands for early and ongoing participation, greater emphasis on mutual learning, experimentation with alternative dispute resolution (in cases potentially open to mutual agreements among parties) and advocacy of community-based collaborative processes. As well, tendencies to narrow the scope of project assessments have been countered by growing demands for more strategic planning level initiatives to depict desirable futures, identify and assess broad alternatives in light of potential cumulative effects and implications for sustainability.[189]

Participation opportunities in public hearings have their own special strengths and limitations. Public hearings are usually reserved for the few, most significant and potentially controversial cases, though the threshold for assigning cases to public hearings varies among jurisdictions and is not always clear within individual jurisdictions. In general, open hearings represent the most visible, potentially the most rigorous, and sometimes the most independent and innovative venues for assessment reviews. However, they are difficult to run well and can earn a reputation for ponderous inefficiency or brusque inflexibility. Quasi-judicial hearings run by technical licensing bodies with permanent members can be unduly adversarial, narrowly restrictive and intimidating to inexperienced public participants.[190] Less formal hearings before panels appointed for the particular case may sacrifice rigorous testing of claims in hopes of a consensual atmosphere.

With or without hearings, the extent, quality and practical feasibility of public engagement in environmental assessment depends on the capacities of, and resources available to, public interest participants. Sometimes, potentially affected communities and other parties have previous assessment experience as well as relevant available expertise. Often, however, local organizations and members of the public have no background in environmental assessment processes, procedures and expectations, and face considerable challenges in learning how to present their understandings and perspectives about the context of the proposed activity and implications concerning its potential positive and adverse effects, risks and uncertainties. Contributions from such public participants are typically valuable and frequently crucial for informed assessment review. But they may not be able to participate effectively without funding or other support. In situations where communities face multiple concurrent project proposals and

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[189] A. John Sinclair and Alan P. Diduck, "Public participation in Canadian environmental assessment: enduring challenges and future directions," in Kevin S. Hanna, ed., *Environmental Impact Assessment Process and Practices in Canada*, 3rd edn. (Toronto: Oxford University Press, 2016).

[190] A. John Sinclair, G. Schneider, and L. Mitchell, "Environmental impact assessment substitution: experiences of public participants," *Impact Assessment and Project Appraisal*, 30:2 (2012), pp.85–94.

associated issues communities, their limited capacities for effective engagement may be overwhelmed by the uncoordinated flood of individual participation needs and demands.[191]

Unfortunately, participant support is provided by few jurisdictions. Ontario, once the national leader in participant assistance, allowed its funding programme to lapse in 1996.[192] While most jurisdictions (e.g., Nova Scotia) now have the legal authority to establish participant funding mechanisms, only the Manitoba and federal assessment processes currently include provision of direct participant assistance. The federal participant funding programme also addresses Crown obligations to meet the duty to consult and accommodate Aboriginal interests (see below) and includes a separate "envelope" for assistance to participating Aboriginal organizations. The problem of multiple assessment and other demands overwhelming community capacities, however, remains mostly beyond solution through adjustments to project assessment support mechanisms.[193]

While the problems besetting public participation in environmental assessment are serious, public participants evidently continue to be active contributors to assessment processes. Some observers, including the present federal minter of finance, have presented public participants as obstructionists hostile to all "development". Alternatively, public participants can be viewed as diverse voices who represent collectively the most reliably thorough and broadly informed reviewers of proposed undertakings. Most jurisdictions appear to stand in the middle ground, recognizing public participation as necessary and largely beneficial. Nonetheless, there are few signs of advanced efforts to understand the potential of public engagement in environmental assessment or to assessment processes as vehicles of learning and capacity building.[194]

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[191] Alan Diduck, "Public involvement in environmental assessment: the case of the nonparticipant," *Environmental Management* 29:4 (2002), 578-588.

[192] A. John Sinclair and Alan P. Diduck, "Public participation in Canadian environmental assessment: enduring challenges and future directions," in Kevin S. Hanna, ed., *Environmental Impact Assessment Process and Practices in Canada*, 3rd edn. (Toronto: Oxford University Press, 2016); David McRobert and Paula Boutis, "Proposal for a new Ontario Participant and Intervenor Funding Act filed with the Environmental Commissioner of Ontario," *Environews* 22:1 (2012), available at http://www.oba.org/en/pdf/sec_news_env_mar12_Proposal_Boutis.pdf.

[193] Efforts to consolidate attention to the big issues in strategic level processes could provide one main venue for community engagement. But even with good strategic level proceedings, communities will want and need to be involved in decision making about the more specific issues and options raised by individual projects. Moreover, effective engagement in strategic level exercises is often dependent on understanding developed through participating in project-level cases.

[194] A John Sinclair, "Conceptualizing learning for sustainability through environmental assessment: critical reflections on 15 years of research," *Environmental Impact Assessment Review* 28:7 (2008), pp.415-428; Alan Diduck, "Public involvement in

5. Effects assessment, review and follow-up performance

Effects assessment practice in Canada has benefitted from decades of experience, but it remains poor in key areas including determination of what options are examined and attention to potential interactive and cumulative effects, and monitoring of actual effects – all of which qualify as major considerations for next generation environmental assessment.

From the earliest years of environmental assessment process design, authorities and participants feared that assessment work, especially the identification and evaluation of effects, would be compromised by proponent bias. With a few exceptions, environmental assessment regimes around the world have been based on a reviewed self-assessment model whereby the proponents of undertakings are responsible for doing the impact assessment work and discipline is imposed by requiring submission and examination by government and other reviewers. Having most assessment work done by project proponents (or, more often, their consultants) is usually accepted as appropriate and necessary. The proponents are doing the planning and decision making into which assessment findings must be integrated. Moreover, good impact assessment should be incorporated as one of the costs of doing business. The big regime design question has been how to minimize the predictably corrupting influence of proponent bias.[195]

In practice most assessment work is done not by proponents themselves but by consultants who serve proponents, and who depend on a good relationship with proponents for repeat business. The relationship encourages consultants to concentrate on proponents' primary immediate interest in gaining project approval as quickly and inexpensively as possible. That means minimizing the scope and simplifying the methods of assessment and demonstrating that adverse effects on isolated (mostly) biophysical components affected by proposed activities are not likely or not significant enough to justify rejection or onerous conditions of approval. Attention to broader, more complex, more difficult, and more costly considerations suffers. So does commitment to matters not central to the approval decision. [196]

The major tools for counteracting proponent bias in assessments have been mandatory requirements and rigorous reviews. Both have been somewhat effective. But as the discussion below documents, they have not worked well enough. Moreover, in part due to

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environmental assessment: the case of the nonparticipant," *Environmental Management* 29:4 (2002), 578-588.

[195] Hugh Wilkins, "The need for subjectivity in EIA: discourse as a tool for sustainable development," *Environmental Impact Assessment Review* 23:4 (2003), esp. pp.404-405.

[196] Angus Morrison-Saunders and Jos Arts, *Assessing Impact: handbook of EIA and SEA follow-up* (London: Earthscan, 2004).

consistent pressure from motivated proponent interests, some jurisdictions have been softening or eliminating mandatory requirements, reducing their own capacities for research and review, and giving non-government intervenors less time and resource support to challenge the positions taken by the proponents' consultants, or to offer credible alternative perspectives.[197] The end result is a set of deficiencies to be corrected by next generation assessment regimes.

A common initial problem is failure to demand and facilitate critical consideration of the public interest need for, purpose of and alternatives to a proposed project deprives environmental assessment decision makers of the context needed to make good project decisions and restricts the potential for assessments to contribute to innovation in the public interest. Because proponents rarely have their own motives for doing so, environmental assessment rules need to include explicit requirements for information that will enable decision makers to determine whether the proposed activity represents the most environmentally, socially and economically sustainable manner of achieving a worthy societal objective.

For effects considerations that are mandatory in current assessments, the standard approach has been to focus on a project's impact on valued environmental components (VECs) or key indicators, without adequate consideration of broader contexts, such as ecosystem health and resilience, cumulative effects, uncertainties, and opportunities to integrate economic and social wellbeing with environmental protection. Environmental assessments rarely have the benefit of accurate information about the extent to which predictions made in similar past project environmental assessments have turned out to be accurate, and whether mitigation measures proposed have proven successful.[198]

The result has been thousands of individual project assessments carried out annually in Canada, largely in isolation, over a number of decades, with some improvement to individual project design and implementation. In spite of all this effort to understand and reduce the adverse effects of individual projects, overall indicators of sustainability, such as biodiversity, habitat preservation, pollution levels in air, water and soil, resource depletion and climate change, are worsening at alarming rates.

The VEC and key indicator approaches to project environmental assessment were initiated as innovative ways to incorporate local and conventional scientific knowledge and recognize system complexities.[199] But their development and application were influenced by the pressures of commercial assessment work and by the traditions of times when the concern over environmental effects of human development tended to be local rather than global, and tended to be about excessive harm caused to humans and other

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[197] *Ibid*.
[198] Kevin S. Hanna, ed., *Environmental Impact Assessment: practice and participation,* 3rd edn. (Toronto: Oxford University Press, 2016), p.167.
[199] See especially Gordon E. Beanlands and Peter N. Duinker, *An Ecological Framework for Environmental Impact Assessment in Canada* (Halifax: Institute for Resource and Environmental Studies, 1983).

specific species rather than whole ecosystems. The mindset was that in order to protect the environment, all environmental assessments had to do was to identify and mitigate the most significant biophysical effects. Local impacts and threats to individual species are still important; however, it has become clear over the past few decades that humanity faces much larger and complex challenges than the mitigation of individually significant local biophysical effects.[200]

Among the most obvious warning signs that this approach is inadequate are global threats to biodiversity, ecosystem health, climate change, persistent toxins in air, water and soil, reduced carrying capacity of many renewable resources, and the rapid depletion of many non-renewable resources. It has become abundantly clear that these challenges cannot be addressed adequately through the currently dominant approach centred on "likely significant effects on individual environmental components," which tends to ignore or undervalue broader implications.[201]

The limitations of the current approach go well beyond the conceptual difficulties with an approach that treats nature as a set of disconnected components. Efforts to identify and assess cumulative effects are often undertaken only at the project level; are limited to considering other existing, approved projects and projects in the approval process; and are too narrow in scope and methodology to illuminate how approving a proposed activity may impair future development options and wellbeing.[202] Pre-development baseline data are often not available, or not sought, resulting in current conditions being used as the baseline, thereby obscuring the extent to which the relevant ecosystems and communities may already be stressed.[203] Interactive effects and system behaviour are frequently ignored or underappreciated.[204] Far too often, cumulative effects are an afterthought separated from the remainder of the environmental assessment, rather than integrated into all aspects of the assessment process and analysis at both project and strategic levels.[205]

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[200] MEA, Millennium Ecosystem Assessment Board, *Current State and Trends Assessment* (2005), available at www.millenniumassessment.org/en/Condition.aspx.
[201] Robert B. Gibson, "Why sustainability assessment?" in Alan Bond, Angus Morrison-Saunders and Richard Howitt, eds*., Sustainability Assessment: pluralism, practice and progress* (London: Taylor and Francis, 2012), pp.3-17.
[202] Peter N. Duinker and Lorne A. Greig, "The impotence of cumulative effects assessment in Canada: ailments and ideas for redeployment," *Environmental Management* 37:2 (2006), pp.153-161.
[203] D. Owen Harrop and J. Ashley Nixon, *Environmental Assessment in Practice* (Hovve: Psychology Press, 1999).
[204] Fikret Berkes, Johan Colding and Carl Folke, *Navigating Social-Ecological Systems: building resilience for complexity and change* (Cambridge: Cambridge University Press, 2002).
[205] Peter N. Duinker and Lorne A. Greig, "The impotence of cumulative effects assessment in Canada: ailments and ideas for redeployment," *Environmental Management* 37:2 (2006), pp.153-161.

Anticipation of short term economic gains still tends to overshadow sound decision making regarding the effects of many assessed projects. Proponents of projects subject to federal assessment requirements are now normally asked to report broadly on anticipated benefits, but not to address direct socio-economic or cultural risks or adverse effects. Consequently, their assessments present all of the socio-economic positives (but only generally and without careful examination) and only some of the negatives.[206] Moreover, many projects subject to assessment requirements are evidently understood to be not open to potential rejection. The assessments consequently focus on marginal performance improvements rather than careful analysis of whether they offer net benefits to society in the medium or long term (or even in the short term in some cases).[207] In the absence of rigorous assessment and principled decision making, proposed activities that offer significant economic gains are therefore not seriously questioned, even when they are likely to contribute to significant regional and global problems.

Over the past decade or more, weak assessment work has often been accompanied by stated commitments to adaptive management. As a concept developed in recognition of uncertainties and predictive difficulties in complex systems, adaptive management has strong theoretical and practical foundations, but is also open to misinterpretation and misuse. The core idea is to prepare for uncertainty by designing projects (and other undertakings, including governance systems) to be adaptable and carefully monitored in implementation. The adaptability of design requires flexibility of components, reversibility of steps, and availability of back-up options. The careful monitoring involves tracking of actual effects in areas identified by best practice predictive assessment, plus early identification of and response to emerging problems (and positive opportunities). Too often, however, promises of adaptive management are not supported by the design features needed for adaptive capacity, and not followed by diligent monitoring. Instead, adaptive management commitments have been used as an excuse for not properly

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[206] The standard text in guidelines for the preparation of environmental impact assessments is as follows:

> *Benefits of the Project*
>
> The EIS will include a section describing the predicted environmental, economic and social benefits of the project. This information will be considered by the Government of Canada in assessing the justifiability of the significant adverse environmental effects, if necessary.

See, for example, Canadian Environmental Assessment Agency, *Environmental Impact Statement Guidelines for the Brucejack Gold Mine Project*, 24 May 2013, available at https://www.ceaa-acee.gc.ca/050/documents/p80034/89566E.pdf.

[207] Matthew Cashmore, "The interminable issue of effectiveness: substantive purposes, outcomes and research challenges in the advancement of environmental impact assessment theory," *Impact Assessment and Project Appraisal* 22:4 (2004), pp.295-310; Jaap G. Rozema and Alan Bond, "Framing effectiveness in impact assessment: Discourse accommodation in controversial infrastructure development," *Environmental Impact Assessment Review* 50 (2015), pp.66-73.

assessing, predicting or mitigating project effects rather than as an additional safeguard against unanticipated effects.[208]

One of the more disheartening conclusions from experience with environmental assessment in Canada so far is that we have not embraced the idea that we should learn from environmental assessment experience, including past mistakes.[209] In part because assessment processes focus on the pre-approval stage of proposed activities, follow-up programs are often neglected, and findings from the work that is completed are rarely sufficiently accessible (despite the ready convenience of on-line registries) or properly integrated into new environmental assessments. Given the uncertainties and risks associated with many of the predictions made about the adverse effects and benefits of proposed activities and the effectiveness of proposed mitigation measures, effective follow-up programs with findings fully integrated into future environmental assessments could have significantly enhanced our ability to make accurate predictions about effects and proposed mitigation.

6. Respect for constitutionally entrenched Aboriginal and treaty rights and the duty to consult and accommodate Aboriginal interests

The role of Aboriginal peoples in environmental assessment has evolved significantly over the past 20 years, and the process is ongoing. A number of at times conflicting developments have shaped this evolution. One development has been the growing recognition by courts of aborginal rights with respect to government decisions that have the potential to affect aboriginal rights and title.[210] Efforts to streamline consultation and decision-making processes have resulted in governments trying to use environmental assessment processes to meet their consitutional obligations. Resource restraints and streamlining efforts have also tended to result in delegation of engagement with aborginal communities to project proponents. In response, many aboriginal communities have pushed for consultations to take place separately from environmental assessment. The result has often been that aborginal communties have refused to engage with proponents, and have minimized their role in environmental assessments, resulting in information about impacts on aboriginal communities in environmental assessments being limited, leaving significant information gaps about the potential impacts, benefits, risks, and uncertainties of proposed projects.[211]

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[208] See Arlene J. Kwasniak, "Use and abuse of adaptive management in environmental assessment law and practice: a Canadian example and general lessons," *Journal of Environmental Assessment Policy and Management* 12:4 (December 2010), pp.425-468.
[209] Robert B. Gibson, "From Wreck Cove to Voisey's Bay: the evolution of federal environmental assessment in Canada," *Impact Assessment and Project Appraisal* 20:3 (2002), pp.151-159.
[210] Dominic Lai, "Constitutionally Protected (Maybe): Canadian Aboriginal Governance and Powers, Section 35, and the Nisga'a Final Agreement" (2014) *Journal of Political Studies* (2014) pp.49-57, available at http://www.ubcjps.com/past-editions/.
[211] Ciaran O'Faircheallaigh and Tony Corbett, "Indigenous participation in environmental management of mining projects: The role of negotiated agreements," *Environmental*

The Supreme Court of Canada has made it quite clear that governments have a duty to consult Aboriginal peoples before making decisions that have the potential to interfere with aboriginal rights or title, whether fully recognized or not.[212] Meaningful consultation includes attention to accommodation – adjustments to avoid, reduce and/or compensate for adverse effects on Aboriginal and/or Treaty Rights. In some situations, the consent of aboriginal communities may be required for a project to be able to proceed.[213] These constutltional obligations have led to efforts to link or integrate aboriginal consultations with environmental assessment processes. It has also led to alternative suggestions that a process of consultation and accomodation needs to take place independent of environmental assessment processes, in combination with appropriate information sharing between the respective processes.[214]

To appreciate the evolving role of Aboriginal peoples in the federal environmental assessment process, it is important to consider the range of aboriginal interests involved. Some rights arise out of the *Indian Act*, involving status Indians and the reserve structure of governance. Other rights arise out of agreements entered into between Aboriginal peoples and the Crown. Historic agreements are generally referred to as treaties, whereas the modern versions are referred to as land claims and self government agreements depending on their focus and scope. Finally, Aboriginal peoples may have retained certain inherent rights that reflect their pre-contact practices, customs and traditions.[215]

Section 35 of the Constitution is central to an understanding of aboriginal rights in the context of the federal environmental assessment process. This section and the general fiduciary duty of the Crown towards aboriginal communities has been interpreted over the past two decades to highlight a number of critical rights and obligations that are

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Politics 14:5 (2005), pp.629-747; Jeff Corntassel, *Forced Federalism: contemporary challenges to indigenous nationhood* (Norman: University of Oklahoma Press, 2008); Michael Coyle, "Negotiating indigenous peoples' exit from colonialism: the case for an integrative approach," *Canadian Journal of Law and Jurisprudence* 27:1 (2014), pp.283-303; David A. Lertzman and Harrie Vredenburg, "Indigenous peoples, resource extraction and sustainable development: an ethical approach," *Journal of Business Ethics* 56:3 (2005), pp.239-254.

[212] See *R. v. Sparrow*, [1990] 1 SCR 1075 for the test related to the infringement of Aboriginal rights. *Haida Nation v. British Columbia (Minister of Forests),* [2004] 3 SCR 511, paragraphs 57-59, made it clear that the duty to consult extends to the provincial Crown, but not to private entities.

[213] R. v. Delgamuukw, [1997] 3 SCR 1010, paragraph 169.

[214] Denis Kirchhoff, Holly L. Gardner and Leonard J.S. Tsuji, "The Canadian Environmental Assessment Act, 2012 and associated policy: implications for Aboriginal peoples," *International Indigenous Policy Journal* 4:3 (2013), pp.1-14.

[215] See *R. v. Sappier*, [2006] 2 SCR. 686. See also *Calder v. British Columbia (Attorney-General)***,** [1973] S.C.R. 313. For a discussion of such rights, see John Borrows, "Uncertain citizens: Aboriginal peoples and the Supreme Court," *Canadian Bar Review* 80:1/2 (2001), pp.15-41, esp. p.18.

relevant in the environmental assessment context.[216] The main sources of aboriginal rights are inherent rights that have not been relinquished, rights under various forms of agreements with the Crown, and statutory rights. Whatever the source, these rights can take the form of title to land or more selective or specific rights, such as a right of access to a resource. Access to resources can be for subsistence, for cultural purposes, or to earn a livelihood.[217] The exact nature and extent of the rights of a given Aboriginal community is often still in dispute. Only in areas that are subject to a recent land claims or self-government agreement are the rights of Aboriginal peoples generally clear and undisputed.

Governments have constitutional obligations to protect the range of aboriginal rights that may be affected through the approval of an assessed project. Where the right is proven, the obligation takes the form of a fiduciary obligation with respect to any right potentially affected. Where the right is claimed, but not proven, the obligation to consult arises out of the honour of the Crown rather than a fiduciary obligation to protect the aboriginal right potentially affected. This raises a number of critical questions about the relationship between the Crown's duty to consult and the federal environmental assessment process.[218]

What is the appropriate role of the environmental assessment process in identifying the possible infringement of aboriginal rights? Any impacts that arise out of biophysical changes in the environment are clearly within the scope of environmental assessment in all Canadian jurisdictions. In most, socio-economic and cultural effect are also (or can also be) covered. What is less clear is whether and how the environmental assessment process should deal with the nature of the aboriginal right potentially infringed as a result of the project's anticipated effects. In other words, there are two very different areas of uncertainty to explore. One is whether the project will have an impact on aboriginal communities. The other is whether the impacts constitute an infringement of aboriginal rights. The challenge with respect to the latter is that the exact nature of the rights that may be affected in many cases has been under dispute and negotiations for decades.

Most unclear and controversial is how approriate the environmental assessment process is or might be as a tool for consultations between the Crown and Aboriginal peoples on whether aboriginal rights would be infringed and whether an agreement can be reached on terms and conditions under which aboriginal communities are prepared to consent to a possible infringement. Recent cases have established that the Crown has a duty to consult

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[216] Starting with *R. v. Sparrow,* [1990] 1 SCR. 1075 in 1990, there have been well over 20 decisions of the Supreme Court of Canada dealing with the interpretation of various aspects of Aboriginal rights.

[217] See *R. v. Sappier*, [2006] 2 SCR. 686.

[218] *Taku River Tlingit First Nation v. British Columbia (Project Assessment Director),* [2004] 3 SCR 550; *Haida Nation v. British Columbia (Minister of Forests),* [2004] 3 SCR 511; *Mikisew Cree First Nation v. Canada (Minister of Canadian Heritage),* [2005] 3 SCR 388; and *Dene Tha' First Nation v. Canada (Minister of Environment)*, [2006] FCJ No. 1677 (FCTD).

with potentially affected aboriginal communities, and that the duty to consult is not limited to circumstances where the aboriginal claim has been settled or accepted by the Crown.[219]

Arising out of the Crown's fiduciary duty toward Aboriginal peoples is a general duty to consult on matters affecting the full range of Aboriginal interests, not only biophysical effects and not only effects that might be addressed adequately through mitigation. To serve well as a central means of meeting the Crown's fiduciary duties to Canada's Aboriginal peoples, environmental assessment processes would need to consider the full range of biophysical, social and economic effects, benefits, risks and uncertainties. They would also need to provide effective means of addressing cumulative effects, including in circumstances where multiple proponents, projects and communities are involved.

Essentially, compliance with the duty to consult is a precondition for courts accepting an infringement of an aboriginal right, but it may not be sufficient for courts to permit the infringement. The courts have thereby separated the question of whether the Crown has the right to infringe aboriginal rights from the question of due process in case of a possible infringement of aboriginal rights.

In some cases, such as a proven treaty right or a right confirmed in a land claims agreement, the Crown may not be able to infringe an aboriginal right without the consent of the aboriginal communities affected. In other cases, such as possible interference with inherent rights, or unsettled claims whether or not they have been accepted by the Crown, infringements may be possible without the consent of affected Aboriginal peoples.[220]

The courts have focused so far on procedural protection of aboriginal rights through the duty to consult. This means that, at a minimum, the federal Crown has a duty to consult with aboriginal communities who have a potential claim that a proposed project will infringe their title to land or other aboriginal rights in the form of inherent rights, treaty rights, or statutory rights. The level and form of consultation required will depend on the status of the rights involved and the nature of the possible infringement.[221]

The big question about whether or to what extent the environmental assessment process can and should serve to satisfy the federal Crown's duty to consult remains open. The

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[219] See, for example, *Haida Nation v. British Columbia (Minister of Forests),* [2004] 3 SCR 511, and *Taku River Tlingit First Nation v. British Columbia (Project Assessment Director),* [2004] 3 SCR 550.

[220] See *Delgamuukw v. British Columbia*, [1997] 3 S.C.R. 1010, where the Supreme Court of Canada raises the issue of consent in the case of a proven right and *Haida Nation v. British Columbia (Minister of Forests),* [2004] 3 S.C.R. 511, where the SCC suggests that consent is not required when the right is not proven.

[221] The National Energy Board and key federal departments are developing policies on EA and duty to consult Aboriginal communities. The Agency is expected to play a facilitator role. A new major projects office is expected to deal with issues for large projects with complex regulatory and environmental assessment requirements.

SCC decisions in *Taku River* and *Haida* suggest that the environmental assessment process can serve this function in certain circumstances. At least at the federal level, environmental assessment is now being presented as important means of meeting the Crown's duty to consult. In project assessments where the Canadian Environmental Assessment Agency is the responsible authority, "the Agency the Agency coordinates federal Aboriginal consultation activities."[222] Also, at least some federal guidance now treats environmental assessment as a means of requiring project proponents to help meet the duty to consult.[223]

At the same time, it is clear from the above that Aboriginal peoples' involvement in the environmental assessment process is essential regardless of whether there is agreement that it serves as the forum for consultations with the federal Crown. The question is whether to proceed with separate consultation and environmental assessment processes, whether to link the two, or whether to develop an integrated process. Until this issue is resolved either by the courts, through legislation, or informally, it will be critical that the role of the environmental assessment process with respect to the duty to consult be clarified on a case-by-case basis. Otherwise, there will be a disincentive for Aboriginal communities to participate fully in the federal environmental assessment process.[224]

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[222] Canadian Environmental Assessment Agency, "Aboriginal consultation in federal environmental assessment," available at http://www.ceaa.gc.ca/default.asp?lang=en&n=ED06FC83-1, last modified 28 May 2014.

[223] The following text is included in Canadian Environmental Assessment Agency, *Updated Guidelines for the Preparation of An Environmental Impact Statement for the Roberts Bank Terminal 2 Project*, 17 April 2015:

> Information provided related to potential adverse impacts on potential or established Aboriginal or Treaty rights will be considered by the Crown in meeting its common law duty to consult obligations as set out in the document "Updated Guidelines for Federal Officials to Fulfill the Duty to Consult (2011)".
>
> The Agency, in its capacity as Crown Consultation Coordinator, will provide additional instructions to the proponent in cases where further research and engagement effort by the proponent is required to support Canada's ability to fulfil the duty to consult with one or more Aboriginal groups that may be adversely affected by the project.
>
> Should the proponent have knowledge of potential adverse impacts to an Aboriginal group not appearing on the above list; the proponent will bring this to the attention of the Agency and the review panel, once appointed, at the earliest opportunity.

[224] For a discussion of implications for proponents, see Sandra Gogal, et al., "Aboriginal impact and benefit agreements: practical considerations," *Alberta Law Review* 43 (2005), p.129. For a recent case, see *Dene Tha' First Nation v. Canada (Minister of Environment)*, [2006] FCJ No. 1677 (FCTD).

7. Authoritative and credible decision making

The diversity of Canadian environmental assessment laws and practices extends to provisions for decision making. Those decisions include choices made in the design and administration of assessment regimes – about purposes, scope, rules of application, provisions for public engagement, etc.[225] – and decisions in individual assessment cases – about objectives, options, study methods, effects significance, consultation and participation strategies, cost justifications, mitigation and (perhaps) enhancement choices, argument presentation, implementation plans, monitoring arrangements, responses to emerging problems, closure plans, and so on through the entire conceptual and practical life of the undertaking.[226]

Necessarily many different approaches to decision making are involved and probably all of them merit critical examination. For the broad purposes of generational improvement of assessment processes, however, a few key decision issues are crucial. These include decision making on the major process design and administrative options and on the big decisions in individual assessment cases. For both the basic principles are roughly the same. The decision making should be impartial, transparent and accountable, explicitly justified, and authoritative.[227] As well, given the complexity and diversity of assessment issues cases and contexts, decision making must combine consistency with flexibility.[228]

The wildly divergent assessment processes in Canada are all products of legislative processes that are advantageously tied to electoral accountability but that have well-recognized deficiencies most of which are beyond redemption though environmental assessment reform. However, as will be suggested in the next section, open collaborative discussion of upward harmonization of assessment in all Canadian jurisdictions might help to provide a well reasoned and supported base for improvement in assessment law making.[229]

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[225] Kevin S. Hanna, ed., *Environmental Impact Assessment: practice and participation,* 3rd edn. (Toronto: Oxford University Press, 2016); John Glasson, Riki Therivel and Andrew Chadwick, *Introduction to Environmental Impact Assessment* (London: Routledge, 2013).

[226] Ralf Aschemann et al., *Handbook of Strategic Environmental Assessment* (London: Routledge, 2012); Barry Dalal-Clayton and Barry Sadler, *Sustainability Appraisal: a sourcebook and reference guide to international experience* (London: Routledge, 2012).

[227] These principles overlap with the broader expectations for access to justice noted above (see the discussion under facilitation of public engagement, p.39ff.).

[228] Robert B. Gibson et al., *Sustainability Assessment: criteria and processes* (London: Earthscan, 2005), chapter 7.

[229] Deborah Carver, Robert B. Gibson, Jessie Irving and Erin Burbidge, *Inter-jurisdictional Coordination of EA: challenges and opportunities arising from differences among provincial and territorial assessment requirements and processes,* a commissioned report for the Canadian Environmental Assessment Agency, through the

There is more to learn from experience with the administration of environmental laws, including regulation making, process implementation guidance and decisions on application. Jurisdictions that have customarily facilitated meaningful public discussion of draft proposals for decisions in these areas have consistently benefited from the credibility as well as quality of the results. Several Canadian jurisdictions have also benefited from advice from independent advisory bodies on big issues and options. The federal government, for example, used a multi-stakeholder regulatory advisory committee that was often able to achieve a remarkable level of consensus on difficult issues.[230] Ontario used a three person independent advisory committee to hold informal public hearings and offer advice on contentious cases and other matters. Both bodies were eliminated by governments more eager for cost saving than for independent advice. But in retrospect the advice received and the credibility gains from involvement of independent voices have stood up well.[231]

Confidence in the defensibility of decision making within assessment processes has perhaps suffered most from the combination of minimally fettered discretion and lack of transparency.[232] The difficulties are greatest where assessments are narrowly scoped and approval decisions are made on broader, but invisible grounds. This happens, for example, where assessments focus on biophysical effects and approval decisions are made in confidential deliberations (often at the ministerial level) that combine attention to environmental assessment review recommendations with consideration of other, especially economic and political imperatives. Reasons for such decisions can be helpful. But in the usual absence of explicit criteria for decisions, including trade-offs, the rationality and defensibility of decisions may be doubted. Certainly, prospects for credible and appropriately justified decisions are greater where assessments have comprehensive mandates and the law requires associated decisions to be supported by published reasons based on explicit, sustainability-based criteria.[233]

Environmental Planning and Assessment Caucus, 20 November 2010, available at http://rcen.ca/caucus/environmental-planning-and-assessment/resources.

[230] National Roundtable on the Environment and Economy, "National Roundtable on the Environment and Economy" (NRTEE, 22 March 2013), available at http://collectionscanada.gc.ca/webarchives2/20130322140948/http:/nrtee-trnee.ca/.

[231] Jeffrey Simpson, "Ottawa kills the emissions messenger," *Globe and Mail,* 20 June 2012), available at http://www.theglobeandmail.com/globe-debate/ottawa-kills-the-emissions-messenger/article4350552.

[232] A. John Sinclair and Meinhard Doelle. "Environmental assessment in Canada: encouraging decisions for sustainability," in Bruce Mitchell, ed., *Resource and Environmental Management in Canada: addressing conflict and uncertainty* (Toronto: Oxford University Press, 2015), pp.112-141.

[233] Appropriate assessment law would also have to ensure transparency of decision making, including assess to the information base for decisions, and opportunity to the challenge decisions that are demonstrably inconsistent with the criteria and/or the information before decision makers. See A. John Sinclair, Alan Diduck and Patricia Fitzpatrick, "Conceptualizing learning for sustainability through environmental

Even where assessment processes are comprehensive – covering needs, purposes and alternatives as well as the full suite of social, economic, cultural and biophysical effects considerations – there may be questioning of the merits of decisions by authorities who were not engaged in the assessment deliberations, and who seem to be incorporating considerations not tested in the public process.[234] At the same time, decision making by electorally accountable authorities has accepted advantages.[235] One response, used for example in Ontario, provides for decisions made by a hearing tribunal, subject to adjustment or rejection with reasons by the minister or Cabinet.

One area where there now seems to be broad agreement is that approval decisions following environmental assessments should be effectively enforceable.[236] Even the federal government, after decades of resistance, has now accepted this approach.[237]

In this discussion, as in much of environmental assessment practice, the approval decision has been at the centre of attention. This is reasonable insofar as most other assessment decisions are made with an eye to the effects on or guidance from the decision that determines whether or not and under what conditions the proposed undertaking may proceed. Exclusive focus on that one decision is, however, regrettable for two main reasons.

Most obviously, focus on the approval decision distracts attention from other key and too often neglected decisions in the assessment process – especially the early decisions on needs, purposes and alternatives, which define the core agenda and open or close opportunities for useful innovation, and the post-approval decisions on monitoring and responses, which concern the actual effects and main opportunities for learning. No less

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assessment: critical reflections on 15 years of research," *Environmental Impact Assessment Review* 28:7 (2008), pp.415-428.

[234] Anahita A. N. Jami and Philip R. Walsh, "The role of public participation in identifying stakeholder synergies in wind power project development: the case study of Ontario, Canada," *Renewable Energy* 68 (2014), pp.194-202; Ciaran O'Faircheallaigh, "Public participation and environmental impact assessment: Purposes, implications, and lessons for public policy making," *Environmental Impact Assessment Review* 30:1 (2010), pp.19-27.

[235] Robin Gregory, Tim McDaniels and Daryl Fields, "Decision aiding, not dispute resolution: creating insights through structured environmental decisions," *Journal of Policy Analysis and Management* 20:3 (2001), pp.415-432.

[236] Jos Arts, Paula Caldwell and Angus Morrison-Saunders, "Environmental impact assessment follow-up: good practice and future directions – findings from a workshop at the IAIA 2000 conference," *Impact Assessment and Project Appraisal* 19:3 (2001), pp.175-185.

[237] Canadian Environmental Assessment Agency, Government of Canada, "Follow-up programs under the Canadian Environmental Assessment Act – policy and guidance," (updated December 2011), available at https://www.ceaa-acee.gc.ca/default.asp?lang=En&n=499F0D58-1.

significantly, focus on project approval keeps all eyes on the project and whether it goes ahead. It discourages attention to how the project may fit in the bigger picture of alternatives, effects and decisions – how it may or should affect larger cumulative effects, future options, etc. And it may obscure attention to relations with more particular decisions about licensing and permitting.

As was noted above in the discussion of assessment process application issues, project-centred assessments have proved often to be ineffective and inefficient means of addressing broad alternatives and cumulative effects. Assessment practitioners have also frequently complained of poor integration of project assessment and regulatory approval requirements (overlapping but inconsistent information demands, contradictory timing demands, etc.). A more promising approach would involve integrated, tiered regimes in which project-centred assessment would be one component. At the larger scale, open strategic level assessments or the equivalent would address the big issues and establish credible and authoritative strategic guidance for project-level undertakings. Project approval requirements and decisions would be coordinated with licensing demands. Ideally, these arrangements within jurisdictions would also be harmonized with those of other jurisdictions.[238]

8. Cooperation and harmonization of assessment processes

Canada has a grand diversity of environmental assessment laws, policies, overall regime designs, particular case-by-case decision requirements and customary practices.[239] The diversity has arisen quite organically in a confederated nation and in the absence of any serious early efforts to build national consistency. The results reflect the different but overlapping mandates and authority of the federal, provincial, territorial, Aboriginal and other jurisdictions involved. They are also the product of differences in the kinds of undertakings to be assessed, the social and ecological contexts that will be affected, and the economic and political pressures to be faced. The challenges of environmental assessment in Nunavut are in important ways different from those in Prince Edward Island. It is appropriate that their approaches to assessment should differ as well.

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[238] Robert B. Gibson et al., "Strengthening strategic environmental assessment in Canada: an evaluation of three basic options" *Journal of Environmental Law and Practice* 20:3 (2010), pp.175-211; Bram F. Noble, "Promise and dismay: the state of strategic environmental assessment systems and practices in Canada," *Environmental Impact Assessment Review* 29:1 (2009), pp.66-75; Ralf Aschemann et al., *Handbook of Strategic Environmental Assessment* (London: Routledge, 2012).

[239] Stephen Kennett, "Hard law, soft law and diplomacy: the emerging paradigm for intergovernmental cooperation in environmental assessment," *Alberta Law Review* 31:4 (1993), pp.644–61; Deborah Carver, Robert B. Gibson, Jessie Irving and Erin Burbidge, *Inter-jurisdictional Coordination of EA: challenges and opportunities arising from differences among provincial and territorial assessment requirements and processes* (November 2010), available at http://rcen.ca/caucus/environmental-planning-and-assessment/resources; Bram F. Noble, *Introduction to Environmental Impact Assessment: A Guide to Principles and Practice*, 2nd edn. (Toronto: Oxford University Press. 2010).

Moreover, diversity is usually valuable in complex situations and should be considered a richness to be preserved while the associated problems are addressed. Diversity of approaches and participating authorities provides more resources and options and more flexibility to deal with a range of applications, contexts, opportunities and perils. Nevertheless, the overlaps, inconsistencies and incompatibilities of Canadian environmental assessment regimes have been major concerns in reform for at least two decades.[240]

The main concerns have been rooted in frustrations in cases where two or more assessment regimes apply to a single project.[241] Especially because of overlapping federal and provincial jurisdiction in environmental matters, double application has been common. The usual complaints have centred on duplication of effort leading to unjustified costs and delays in approvals. But the core difficulties are probably not attributable to duplication so much as to incompatible assessment process structures and requirements, evidently limited inclination and capacity for effectively cooperative application of overlapping processes, and differing political priorities.[242]

As has been seen in the discussions above, Canadian assessment regimes take very different approaches not only to what must be addressed (concerning purposes, alternatives, effects beyond those on the biophysical environment, evidence of overall desirability, etc.) but also when processes begin and what decision making steps must be followed (when application is determined, how early the formal process begins, whether there is a further screening step, etc.) and where there may be openings for the exercise of political discretion (e.g., in expanding or narrowing the scope of assessment). As a result, cooperative integration of requirements is seldom easy.[243]

Also, insofar as effective integration entails adoption of the most demanding requirements from the overlapping processes, the effects may receive mixed receptions

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[240] See, for example, S. Kennett, "Meeting the Intergovernmental Challenge of Environmental Assessment," in P.C. Fafard and K. Harrison, eds., *Managing the Environmental Union: intergovernmental relations and environmental policy in Canada* (Kingston: School of Policy Studies, Queen's University, 2000) pp.107–131.

[241] Patricia Fitzpatrick and A. John Sinclair, "Multi-jurisdictional environmental impact assessment: Canadian experiences," *Environmental Impact Assessment Review* 29:4 (2009), pp.252-260.

[242] Deborah Carver, Robert B. Gibson, Jessie Irving and Erin Burbidge, *Inter-jurisdictional Coordination of EA: challenges and opportunities arising from differences among provincial and territorial assessment requirements and processes* (November 2010), available at http://rcen.ca/caucus/environmental-planning-and-assessment/resources.

[243] *Ibid*; Kevin S. Hanna, ed., *Environmental Impact Assessment: process and practices in Canada*, 3rd edn, (Toronto: Oxford University Press, 2016); Patricia Fitzpatrick and A. John Sinclair, "Multi-jurisdictional environmental impact assessment: Canadian experiences" *Environmental Impact Assessment Review* 29:4 (2009), pp.252-260.

from some major assessment players.[244] Upward harmonization of assessment requirements in cases of overlapping jurisdiction has been favoured by public interest advocates and others who see case-by-case harmonization of this kind as a step towards cooperation in efforts to accomplish more general coordination and strengthening of assessment regimes. For proponents, well-coordinated upward harmonization of assessment requirements provides greater clarity and consistency of expectations, but also more rigorous demands that could imperil marginally acceptable projects. For assessment administrators, the benefits of cooperation may be difficult to achieve in practice, in part because of the basic process incompatibilities involved. In the political realm, reception depends on whether the ruling authorities favour cooperative accomplishment or less government and (in the case of some provinces) whether they see cooperation as contribution to or compromise of their own powers and authority.[245]

The current federal government has preferred to address overlapping jurisdiction problems by focusing its assessment efforts on matters of exclusive federal jurisdiction,[246] and encouraging elimination of federal assessment proceedings where "equivalent" provincial assessment processes can be substituted.[247] In such substitution cases, the federal government expects to use the provincial process findings as the basis for assessment-related decisions within federal jurisdiction.[248] This approach responds to longstanding private sector calls for government action to apply a "one project, one assessment" principle to assessment requirements in Canada.[249] However, it does little to

[244] S. Kennett, "Meeting the intergovernmental challenge of environmental assessment," in P.C. Fafard and K. Harrison, eds., *Managing the Environmental Union: intergovernmental relations and environmental policy in Canada* (Kingston: School of Policy Studies, Queen's University, 2000) pp.107–131.

[245] Deborah Carver, Robert B. Gibson, Jessie Irving and Erin Burbidge, *Inter-jurisdictional Coordination of EA: challenges and opportunities arising from differences among provincial and territorial assessment requirements and processes* (November 2010), available at http://rcen.ca/caucus/environmental-planning-and-assessment/resources.

[246] CEAA 2012, s.5(1).

[247] CEAA 2012, s.32-36. Canada and British Columbia have negotiated a "memorandum of Understanding on the Substitution of Environmental Assessments" (February 2013) and have since agreed on the substitution of 12 individual assessments, though no substitute process has yet been completed. CEAA 2012 also establishes proceedings of the National Energy Board and the Canadian Nuclear Safety Committee as means of meeting federal assessment requirements for undertakings subject to the authority of those bodies.

[248] Meinhard Doelle, "The evolution of federal EA in Canada: one step forward, two steps back?" (Dalhousie University, Schulich School of Law, 24 January 2014), available at http://ssrn.com/abstract=2384541.

[249] Standing Committee on Environment and Sustainable Development and Mark Warawa, *Statutory Review of the Canadian Environmental Assessment Act, Protecting the Environment, Managing Our Resources* (Ottawa: House of Commons, 2012).

address the many and widely varying deficiencies of assessment processes across the country.[250]

The main, more comprehensive alternative has been to seek overall upward harmonization through a combination of basic standardization of key assessment components and consequently much easier inter-jurisdictional cooperation. This option has been discussed for decades. An initial outline was developed by the Canadian Council of Ministers of the Environment in the early 1990s.[251] Later in that decade, the federal government sponsored a formal Canadian Standards Association process to develop a non-binding best practices standard for environmental assessment process design in Canada. The multi-stakeholder technical committee for this standard reached near consensus on an advanced draft document,[252] but the initiative eventually collapsed and has not been revived. Conditions now for such an initiative are in some ways more difficult and in others more compelling.

Implications

This review of key areas of Canadian assessment process strengths and limitations has focused on matters of controversy and concerns. It is important to remember the positive contributions and fundamental importance of environmental assessment even when its implementation has been far from ideal. Environmental assessment law and practice so far have been society's imperfect, indeed often messy and difficult but crucial set of responses to intolerable behaviour. They represent our recognition that, for reasons deeply entrenched in the prevailing political economy and its peculiar suite of driving motivations, neither public nor private sector proponents of environmentally and socially important undertakings cannot be relied upon to incorporate broad public interest considerations in their decision making. Designing and applying environmental assessment as a corrective to all of this was never going to be easy. The overall conclusion to be drawn from the discussion so far is not that the record of environmental assessment efforts in Canada is generally negative, but that much has now been learned, or at least is now available for learning, about what needs improving and how to go about it.

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[250] Patricia J. Fitzpatrick, and A.J. Sinclair, "Multi-Jurisdictional Environmental Assessment in Canada," in Kevin S. Hanna, ed., *Environmental Impact Assessment Process and Practices in Canada*, 3rd edn. (Toronto: Oxford University Press, 2016).

[251] Canadian Council of Ministers of the Environment, "Cooperative principles for environmental assessment," (Winnipeg: CCME, May 1991), available at http://www.ccme.ca/files/Resources/enviro_assessment/ea_principles_e.pdf; Canadian Council of Ministers of the Environment, "Framework for environmental assessment harmonization," (Winnipeg: CCME, November, 1992), http://www.ccme.ca/files/Resources/enviro_assessment/enviro_assess_fmwk_e.pdf.

[252] Canadian Standards Association Working Group on Environmental Impact Assessment, CAN/CSA Z770-00 *Environmental Assessment* (preliminary draft standard), draft #14, 26 July 1999.

The improvements can and should extend beyond particular repairs to systemic regeneration. Our review of the evolving global and Canadian context for environmental assessment and appreciation of the strengths and limitations of current Canadian assessment processes and practices points to multiple needs and opportunities for reform. More importantly, many of the implications for reform are linked and interdependent. Taken together, the findings imply that pursuit of a next generation of environmental assessment law and practice is now timely and feasible.

Next generation environmental assessment for Canada

Canada has been practicing environmental assessment for over 40 years. You might think we would be good at it by now. But we are not. The history of Canadian environmental assessment has been a race between accomplishment and disappointment. Today, assessment deliberations are characterized by tensions between needs for improvement and pressures for faster, easier and cheaper approvals.

Probably that was predictable. From the outset, environmental assessment laws demanded change and stirred resistance. They required proponents of major undertakings to incorporate environmental factors (variously defined) alongside financial, technical and political considerations in their planning because many proponents were not motivated to do so voluntarily. Moreover, given Canadian constitutional arrangements, the laws needed to be designed and applied cooperatively by the many Canadian jurisdictions (federal, provincial, territorial and Aboriginal) with environmental responsibilities – evidently also something for which existing motivations would prove to be insufficient.

Canada's first generation environmental assessment regimes have made important contributions. They have won greater attention to environmental considerations. They have opened some significant decision making to public scrutiny. In their brightest moments, they have been instrumental in forcing re-examination of prevailing priorities and practices. But environmental assessment laws and practices in Canada have not achieved the initially desired transformation in proponent and associated decision-maker culture to integrate habitual attention to environmental concerns. And they have not yet moved effectively to take on new understandings and imperatives – especially growing recognition of complex interactions in socio-ecological systems and increasingly pressing needs to ensure progress towards sustainability.

Centred on applications for project approvals and focused on mitigation of adverse effects, Canadian assessment processes have usually aimed for less bad projects rather than best service to the public interest.[253] Focused on the effects of individual projects, they have been poorly equipped to deal with cumulative and strategic effects and broad

[253] Meinhard Doelle, *The Federal Environmental Assessment Process: a guide and critique* (Markham: LexisNexis, 2008).

alternatives.[254] No two Canadian assessment regimes are the same and none represents a consistently high standard.[255] And with modest exceptions, assessment has not evolved well to address changing global and domestic conditions.[256] Mostly, environmental assessment in Canada has struggled to be much more than a slightly earlier, more open and better integrated process for environmental licensing of conventional projects, and even then it has been criticized for slowing approvals.[257]

Next generation environmental assessment will have to aim higher. Five main transitions are involved:

(i) In contrast to the prevailing focus on mitigating significant adverse effects, next generation environmental assessment would expect proposals to represent the best option for delivery of lasting wellbeing, preferably through multiple, mutually reinforcing and fairly distributed benefits, while also avoiding adverse effects.[258]

(ii) In contrast to the common notion that economic, ecological and social objectives are inherently in conflict, can be addressed separately and will be accommodated through trade-offs that are "acceptable in the circumstances," next generation environmental assessment would recognize that sustainability-enhancing economic, ecological and

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[254] Peter N. Duinker and Lorne A. Greig, "The impotence of cumulative effects assessment in Canada: ailments and ideas for redeployment" *Environmental Management* 37:2 (2006), pp.153-161; Bram F. Noble, "Promise and dismay: the state of strategic environmental assessment systems and practices in Canada," *Environmental Impact Assessment Review* 29:1 (2009), pp.66-75.

[255] Deborah Carver, Robert B. Gibson, Jessie Irving and Erin Burbidge, *Inter-jurisdictional Coordination of EA: challenges and opportunities arising from differences among provincial and territorial assessment requirements and processes* (November 2010), available at http://rcen.ca/caucus/environmental-planning-and-assessment/resources; Patricia J. Fitzpatrick and A. John Sinclair, "Multi-jurisdictional environmental assessment," in Kevin S. Hanna, ed., *Environmental Impact Assessment: Practice and Participation*, 3rd edn. (Toronto: Oxford University Press, 2016), pp.354-372.

[256] The key new global and domestic conditions for assessment work include deepening unsustainability, greater understanding of complexity and its implications for interactive effects and precautionary approaches, links between financial and ecological debt, skepticism about the capability and credibility of governments and other authorities, and rising public expectations to be actively involved in decision making on important matters including beyond the project level.

[257] A. John Sinclair and Meinhard Doelle, "Environmental assessment in Canada: encouraging decisions for sustainability," in Bruce Mitchell, ed., *Resource and Environmental Management in Canada: addressing conflict and uncertainty* (Toronto: Oxford University Press, 2015), pp.112-141.

[258] Robert B. Gibson, Selma Hassan, Susan Holtz, James Tansey and Graham Whitelaw, *Sustainability Assessment: criteria and* processes (London: Earthscan, 2005).

social objectives are interdependent. While some trade-offs will be unavoidable, they will acceptable only in the last resort and under clearly delineated rules.[259]

(iii) In contrast to the assumption that effectiveness, efficiency and fairness are competing objectives, next generation environmental assessment would see that they too are logically and practically interdependent. Efficiencies would be sought by emphasizing assessment requirements where they can be most effective, especially through assessment in the development of policies, programmes and plans that are best suited to addressing cumulative effects and broad alternatives and to providing efficient guidance for projects and other more specific initiatives,[260] and by fostering upward harmonization of the disparate assessment regimes (and associated regulatory permitting and post-approval monitoring) across Canada to compatible versions of a high next generation standard.

(iv) In contrast to environmental assessment being one, unusually open contribution to the broader set of largely inaccessible decision-making processes affecting individual projects, next generation environmental assessment would be the main public vehicle for deliberations and decisions on significant undertakings. It would adopt comprehensive sustainability-based purposes and their elaboration in criteria and it would apply to strategic level policies, plans and programmes as well as projects. In effect, environmental assessment would evolve into a tiered and integrated sustainability governance process.

(v) In contrast to treating assessment as hoops for proponents to jump through to gain project approval, next generation environmental assessment would be centred on learning, building a culture of sustainability and serving the long as well as short term public interest.

The following sections sketch out an initial framework of interrelated next generation components for environmental assessment regimes in Canada at the federal, provincial and territorial levels. The substance may be largely relevant to federal jurisdictions beyond Canada and to Canadian assessment regimes established through Aboriginal land claim agreements. There is no assumption here that a next generation regime would rely entirely on environmental assessment law. Useful roles are, for example, likely for strategic processes in regional planning, sectoral policy and regulation, and municipal decision making. Insofar as Canadian jurisdictions may be persuaded to adopt the basic assessment regime components presented here (with adjustments for their own circumstances), the results should deliver beneficial upward harmonization of environmental assessment in Canada.

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[259] See Robert B Gibson, "Avoiding sustainability trade-offs in environmental assessment," *Impact Assessment Project Appraisal* 31:1 (2013), pp.1-12; Angus Morrison-Saunders and Jenny Pope, "Conceptualising and managing trade-offs in sustainability assessment," *Environmental Impact Assessment Review* 38 (2013), p.54-63.
[260] Robert B. Gibson et al., "Strengthening strategic environmental assessment in Canada: an evaluation of three basic options" *Journal of Environmental Law and Practice* 20:3 (2010), pp.175-211.

Components of a framework for next generation environmental assessment

The basic components proposed for next generation environmental assessment for Canada are outlined below in categories that reflect the conventional steps of environmental assessment deliberations from purposes and application rules to follow-up monitoring and enforcement, plus design considerations that affect the whole process.

1. The purpose of environmental assessment

The core purpose of next generation environmental assessment is to ensure that deliberations and decision making on new and renewed undertakings at the project and strategic (policies, plans and programmes) levels foster proposal development, approvals and implementation that deliver the strongest feasible positive contributions to lasting wellbeing while avoiding significant adverse effects. More generally, the objective is to protect and enhance the resilience of desirable biophysical, socio-ecological and human systems and to foster and facilitate creative innovation and just transitions to more sustainable practices.

Serving this core purpose would entail adoption of corollary purposes concerning process and substantive requirements. Because transition to sustainable structures, cultures and behaviour is a long-term venture, next generation assessment must aim to establish deliberative decision-making processes that foster mutual learning among all interested participants to build understanding and capacities for effective engagement in governance for lasting wellbeing. To do that, it would need to facilitate collaboration with other authorities and meaningful public engagement from the conception through to the end of potential effects from undertakings that may have significant implications for progress towards sustainability.

For very practical purposes, assessment regimes would need to be structured to strengthen consistency and efficiency in decision making – from policy making, planning and programme design to post-approval project implementation and monitoring – through process linking and application of a common set of fundamental requirements. They would also need to favour flexibility and decentralization by respecting uncertainty and context, work iteratively with relevant stakeholders, and emphasize capacity to adapt to different ecosystems and communities, new understandings, and emerging challenges and opportunities.

Entrenchment of these purposes in next generation assessment law would begin with an explicit overall legislated objective tied to seeking progress towards sustainability. But the purposes would also need to be incorporated in the substance of all legislated provisions. Crucial components would include requirements for

- development and application of broad but comprehensive sustainability-based criteria for evaluations and decisions (see next section);

- emphasis on comprehensive and integrated attention to all factors affecting the long term as well as immediate desirability and durability of effects;
- comparative evaluation of potentially reasonable alternatives to identify best options for each undertaking, to move cumulatively to more sustainable practice; and
- application of case-specified sustainability-based purposes and criteria as the main structure for deliberations and decisions at all process stages for subject undertakings from initial identification of appropriate purposes and options (alternatives) to final deliberations on renewal, closure, decommissioning and continued management.

2. Sustainability-based criteria for evaluations and decision making

In next generation environmental assessment, explicit sustainability-based criteria play several crucial roles. They provide a comprehensive, credible and explicit base for choices and decisions throughout the assessment process, enhancing the transparency and accountability of the deliberations. In the public interest, they ensure a focus on achieving maximum gains for sustainability by aiming for the selection of the best option, rather than attempting to judge the "acceptability" of proposed undertakings.[261] They encourage enhancement of multiple, mutually reinforcing, fairly distributed and lasting benefits in addition to avoidance or mitigation of significant negative effects.[262] And they motivate innovation in creating options that eliminate or minimize invidious trade-offs.

The legislation would need to establish the generic criteria for assessment decision making and provide for specification of these criteria for application to particular cases and contexts. The generic criteria would cover all core requirements for progress towards sustainability and their interactions.[263] Specifying the criteria for individual applications

[261] Effective attention to broader options or alternatives (and associated cumulative effects) will often be more feasible at the strategic level than at the project level. Accordingly, application rules and process design would emphasize assessment of strategic level initiatives that guide alternatives selection at the project level.

[262] In some cases, overall sustainability gains will be elusive. Best efforts to deal with residual stockpiles of high-level radioactive wastes, for example, may deliver only least bad solutions. However, some unsustainable undertakings, such as ones based on the exploitation of non-renewable hydrocarbon fields or mineral orebodies, can make a positive contribution to sustainability if designed and used (e.g. through investment of associated revenues and other opportunities) as bridges to more sustainable livelihood activities.

[263] Despite widespread inconsistencies and obfuscation even in professional references to sustainability, the core requirements for progress towards more sustainable futures are well established and supported. For one synthesis now well tested in practice, see Robert B. Gibson et al., *Sustainability Assessment: criteria and processes* (London: Earthscan, 2005), chapter 5. Some Canadian jurisdictions already have reasonably comprehensive sets of legislatively-grounded sustainability principles and guidelines. See, for example, those of the province of Manitoba at http://www.gov.mb.ca/conservation/susresmb/sd/.

would be through informed choices by authorities and stakeholders, without compromising any of the generic requirements.[264] In particular cases, the criteria could evolve as new considerations and understandings arise, but they would provide the essential framework for evaluations and decisions through all stages of the assessment process.

In addition, next generation assessment law should establish explicit rules for evaluating trade-offs, and provide for case and context-specific elaboration of them. Trade-off rules would provide guidance on expectations for net sustainability gains, avoidance of significant adverse effects, allocation of the burden of argument, protection of unrepresented future generations, explicit justification, and open process.[265]

This emphasis on specified criteria and trade-off rules is meant to ensure attention to all key considerations for lasting wellbeing, including openings for multiple, mutually reinforcing benefits. But it also facilitates more open discussion of the otherwise often hidden, obscure and/or confused grounds for important decisions. Because such criteria will have significant influence, their adoption and case specification may become a focus for controversy and conflict. Such tensions are common in assessment processes now and are inevitable in any process of transition. Centring the tensions on explicit grounds for decision making seems to be a sensible option. Moreover, the difficulties should be accompanied and slowly mitigated by incremental learning and gradual enhancement of capacities for discursive problem solving. Nevertheless, the potential for discord adds to reasons for insistence on fair process.

Key additional needs associated with sustainability-based criteria include requirements for

- defining the public interest purpose of each assessed undertaking;
- identifying and comparing alternatives with selection of the most desirable option in light of the criteria;
- providing reasons based on application of the criteria for all assessment decisions;
- explicit identification and justification of trade-offs in light of explicit trade-off criteria; and
- precautionary recognition of uncertainties, with preference for low risk options and adaptive design as well as implementation.

3. Application rules

A fundamental aim of the assessment regime is to ensure sustainability-based assessments are carried out for all proposed undertakings – including policies,

[264] In some cases, strategic level assessments covering sectoral or regional issues could contribute a framework of specified criteria for deliberations on individual projects or more particular strategic undertakings in the sector or region.

[265] Robert B. Gibson et al., *Sustainability Assessment: criteria and processes* (London: Earthscan, 2005), chapter 6.

programmes and plans as well as capital projects and physical activities – that might have significant effects on prospects for sustainability in and beyond the legislating jurisdiction. This includes undertakings that have potential for significant adverse effects, on their own and cumulatively. It also includes proposed undertakings that could foreclose other initiatives that would make a more positive contribution, and undertakings that warrant careful consideration of the manner in which the undertaking should be carried out to maximize benefits and minimize harm.

Meeting this aim requires, as much as possible, the anticipation and pre-identification of categories or characteristics of undertakings that are, or are likely to be, subject to assessment requirements. This will allow proponents and other potential participants to begin deliberations knowing their obligations and incorporating them from the outset.

Application decisions, which determine what undertakings are subject to formal assessment requirements and the particular streams of assessment required, will be critical for the success of a next generation regime. To be predictable and accountable, all application decisions will need to be guided by the legislated purposes, principles and criteria, and to be fully transparent. Decisions need to be justified in written reasons demonstrating consistency with the general purposes of the process and the specific principles, rules and criteria developed for application decisions, in combination with an opportunity to challenge decisions that are not. At the same time, flexibility is needed to recognize unanticipated cases and exceptional situations.

The general scope of application should respect three core considerations. First, the process should apply to undertakings at the project and strategic levels with appropriate streams for different categories of undertakings. Second, it should apply to new undertakings as well as continuing undertakings that merit periodic review, or that are to be revised, renewed or replaced. And third, it should apply to undertakings that are not in active development but have been identified as desirable, such as a new strategic initiative to address a pressing or anticipated issue raised in a project level assessment.

Specific rules of application should be designed to ensure the following:

- automatic application to undertakings in pre-identified categories set out in regulations made under the law to ensure early recognition of assessment obligations on the part of proponents and other interests;
- effective mechanisms to ensure early application to other undertakings with potentially significant effects, with clear rules, principles and criteria to maximize clarity and accountability;
- application to significant policies, programmes and plans that require ministerial approval, again with clear rules, principles and criteria to maximize clarity and accountability;
- application to new strategic level initiatives where the need for strategic level clarification has been identified in the course of a project level assessment;[266]

[266] See A John Sinclair and Meinhard Doelle, "Using law as a tool to ensure meaningful public participation in environmental assessment," *Journal of Environmental Law and*

- application in other cases where the government chooses to require an assessment in response to public concern, through a transparent and accountable petition process set out in legislation, or on its own initiative in recognition of issues of significance for sustainability; and
- ability to make adjustments to application requirements in accordance with clearly established rules, principles and criteria and in a transparent and accountable manner.

4. Assessment streams

To be effective, efficient, and fair, assessment processes must be suitable for the size and nature of the undertaking, the potential magnitude of adverse effects and benefits, and the level of public interest and concern. To this end, each type of undertaking should be clearly allocated to an appropriate assessment stream. The assessment process therefore needs to provide a range of specified streams. The number and particular characteristics of these streams might vary considerably among jurisdictions, but would include at least

- a demanding stream with detailed substantive evaluation and rigorous public and institutional review for the most significant undertakings with the greatest implications for ensuring and enhancing contributions to sustainability; and
- a more expeditious assessment stream for less significant undertakings.

While particular requirements for the scope of the assessment and the extent of public engagement will vary from stream to stream, all streams must meet a minimum standard of assessment. Each stream needs to apply the full set of sustainability criteria and trade-off rules, and include timely public notice and opportunities for public comment. Each stream must also meet the minimum scope requirements set out below, except where a narrower scope is established in the conclusions of a higher tier assessment. Each stream will have to include a mechanism for shifting exceptional cases to a more appropriate stream with clear rules, transparency and accountability for streaming decisions.

5. Linked tiers

Tiers in assessment processes recognize that the design, approval and implementation of most undertakings that have important socio-economic and ecological implications are influenced by decisions at different levels, ranging from broad policy making to regulatory licensing, and that much can be gained by linking the decision making at all of these levels.

The main tiering idea links the project and strategic levels and has two parts – to use law-based strategic assessments for policies, plans and programmes to address big issues and opportunities, broad alternatives and cumulative effects that cannot be covered as

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Practice 12:1 (2003), pp.27-54. See also Robert B. Gibson et al., "Strengthening strategic environmental assessment in Canada: an evaluation of three basic options," *Journal of Environmental Law and Practice* 20:3 (2010), pp.175-211.

effectively and efficiently at the project level, and to use the strategic level findings as authoritative guidance for project planning and assessment.[267] Examples of strategic undertakings that would likely produce useful guidance for subsequent project planning and assessment include planning initiatives that explore desirable and feasible futures for a region, and policy development efforts that examine the characteristics and potential cumulative effects of alternative ways of meeting a societal need.

Policies, plans and programmes that have been subjected to or are based on sustainability-based next generation assessments may guide specific scoping, stream selection and other process decisions for assessments at the project level. They may help to focus the lower level assessment on a more limited range of alternatives than would be required in the absence of the broader level assessment. Findings at the strategic level about potential cumulative effects and their implications, and about appropriate means of avoiding adverse cumulative effects and enhancing positive ones, should also make project level assessments more efficient, effective and fair. In turn, project level assessments may often identify strategic assessment needs, opportunities, issues and options.

To facilitate such tiering, next generation assessment law would need to ensure application of assessment requirements to strategic level undertakings (see the discussion of application rules, above), provide for authoritative guidance from the strategic to project level and clarify the extent of, and limits to, this authority (e.g. through sunset provisions and renewal requirements). Legislative provisions would also establish equivalency rules for other sustainability-based and participative processes that develop and assess policies, plans or programmes that could provide legitimately authoritative guidance for projects planning and assessment.

For tiering links from the project to strategic level, next generation law should establish a mechanism for project level assessment processes to identify needs for strategic level consideration and response.[268] Normally, resulting strategic level assessments would be carried out concurrently with the continuing project assessment, but some cases may require suspension of the project assessment to ensure the strategic assessment findings can be integrated fully into the project assessment. The law could provide for earlier consideration of requests for amendments to existing policies, plans or programmes in light of problems or opportunities at the project level, but only through open processes applying specified, sustainability-based criteria. Parties seeking an amendment would have to justify it on the grounds of exceptional circumstances or recent changes in important factors.

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[267] Such tiered arrangements are already common internationally (e.g. in linked strategic and project assessment processes in the European Union) and in related fields in Canada, including urban and regional planning and forest management.

[268] Robert B. Gibson et al., "Strengthening strategic environmental assessment in Canada: an evaluation of three basic options" *Journal of Environmental Law and Practice* 20:3 (2010), pp.175-211.

Tiering links that identify, clarify and coordinate the relationship between project assessments and regulatory licensing have similarly great potential. Next generation assessment legislative provisions as well as administrative changes will be needed for example to clarify the level of detail required at each level, enhance the compatibility of requirements (e.g. documentation expectations and effects prediction methodologies), establish procedures for reconsideration of assessment findings in light of new information at the regulatory licensing level, and integrate assessment monitoring and follow-up into the regulatory process.

6. Scope of assessment requirements

The overriding driver of scope determinations should be to allow environmental assessments to serve the sustainability-based purposes set out above. That entails ensuring the scope of all assessments covers the full suite of considerations that affect the potential for progress towards sustainability and facilitates identification of options, designs and implementation practices that deliver the best, most feasible undertakings in the long-term public interest. Efficiencies are gained by addressing appropriate issues at higher assessment tiers and using the results to shape project level decisions, not by artificially or arbitrarily limiting the scope of any assessment.

The assessment process should provide for a core legislated scope for all assessments (project and strategic levels) requiring attention to

- the purposes of and need for the undertaking (with both purposes and need related to the lasting public interest);
- potential reasonable alternatives;
- the full set of sustainability-related considerations and effects – biophysical and socio-economic (and their interactions), positive and negative, indirect and direct, interactive/cumulative and individual, lasting and immediate;
- the full life of options (alternatives to and alternative means of pursuing the preferred alternative), including the upstream and downstream life cycle plus legacy effects;
- cumulative effects;
- enhancement of positive effects as well as mitigation/avoidance of adverse effects;
- uncertainties and means of accommodating surprise; and
- monitoring of effects and compliance, and response to the findings.

The process should ensure application of the core scope to all levels and streams of assessment and to requirements for equivalency in tiering links with undertakings prepared and assessed under other processes and regimes. It should clearly set out the more specific scope requirements for different applications, including assessments at different levels and in different streams, as well as ways to adjust and finalize the scope for individual assessments.

7. Effects assessment

Next generation assessment regimes need to be carefully designed to ensure reliable effects assessment. The prediction and evaluation of effects is a central process component. It is crucial to understanding the prospects for positive and adverse sustainability effects, illuminating the comparison of alternatives, identifying best means of enhancing positive effects and avoiding or minimizing adverse effects, and evaluating potential trade-offs. It also provides the basis for decision making concerning approvals or rejections, conditions of approval, and monitoring requirements.

To minimize process uncertainties and delays, effects assessment requirements should be pre-defined to the extent possible, so that all participants in the assessment process know the expectations and their obligations and openings to contribute. The key general requirement is that all effects assessment is to be guided by application of the sustainability criteria specified for the case, and must recognize and document uncertainties (in study design as well as in effects prediction). Consequently, the requirements for effects assessment must be tied directly to application of the legislated purposes, the more specific decision making rules and the sustainability-based criteria. In addition to requirements discussed elsewhere, the mandatory obligations in law should include application of the sustainability criteria in all steps of effects assessment, including selecting alternatives to be compared; identifying most valued ecological, social and socio-ecological systems, characteristics and services to be examined most closely;[269] choosing methodologies and setting priorities for effects predictions and monitoring; and evaluating the significance of individual and cumulative effects and uncertainties (at the prediction and monitoring stages).

The assessment process should provide for early and open engagement of authorities, including Aboriginal governments, and stakeholders in criteria specification and application in the effects assessment steps above. Such engagement is also needed in discussions to clarify effects assessment scope and priorities (including identification of valued components), to review proposed methods, and to develop other case-specific guidance for design and implementation of effects studies and assessments. A final key topic for early and open engagement is the selection of consultants, which needs to be done in a way that will reduce conflicts associated with consultant dependency on and ties to proponent interest.

[269] Note that we refer here to valued systems, characteristics and services rather than to key indicators. Environmental assessment practice has sometimes demonstrated a tendency to restrict consideration to a few key indicators that may have insufficient ability to represent the status of or trends affecting larger systems. While the enormous complexity of potentially affected systems makes reliance of selected indicators inevitable, the objective must always be to build a reliable understanding of interactive effects. See, for the original work, Gordon E. Beanlands and Peter N. Duinker, *An Ecological Framework for Environmental Impact Assessment in Canada* (Halifax: Institute for Resource and Environmental Studies, Dalhousie University & Hull: Federal Environmental Assessment Review Office, 1983).

Beyond individual cases, it will be important to offer advanced general guidance materials on key aspects of sustainability-based effects assessment, including attention to positive sustainability effects and their enhancement, long term and legacy effects, and interactive and cumulative effects. General guidance should be complemented with more specific sectoral, regional and other guidance for assessment work relevant to categories of anticipated undertakings. In some cases, strategic level assessments will serve to develop such guidance.

Finally, effects assessment requirements need to ensure an emphasis on cumulative effects, and fully utilize the critical role of strategic level assessments for effective and efficient attention to cumulative effects predictions, implications and response options.[270]

8. Participation

Participatory processes in next generation assessment regimes need to incorporate the insights of deliberative democracy, collaborative rationality and environmental justice.[271] By participation we mean encouraging and facilitating the active involvement of members of the public, stakeholders, relevant authorities and proponents in environmental assessment with the aim to enhance the quality and credibility of assessment decision making and to ensure associated learning and capacity building benefits are captured.[272] To ensure the basic legitimacy of next generation assessment, participatory processes also need to be meaningful by incorporating the basic components of participation into environmental assessment.

The basic components of meaningful participation have been well documented in the literature.[273] They include provisions to ensure adequate public notice, timely and convenient access to information, participant assistance, opportunities for public comment, public hearings, deliberative forums and early and ongoing participation throughout the process stages, including

- early deliberations on purposes/needs and alternatives, criteria specification, main consultant selection, and determination of effects assessment priorities and design of effects studies;

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[270] A. John Sinclair, Peter Duinker and Meinhard Doelle, "Looking up, down, and sideways: reconceiving cumulative effects assessment as a mindset," *Environmental Impact Assessment Review* (forthcoming 2016).

[271] Richard K. Morgan, "Environmental impact assessment: the state of the art," *Impact Assessment and Project Appraisal* 30:1 (2012), pp.5-14.

[272] In participation provisions, and in regime design generally, it will be important to recognize Aboriginal and treaty rights and needs to ensure special efforts to facilitate their effective engagement as relevant authorities, not mere stakeholders.

[273] Robert B. Gibson, "Environmental assessment design: lessons from the Canadian Experience," *The Environmental Professional* 15 (1993), pp.12-24; David P. Lawrence, *Impact Assessment: practical solutions to recurrent problems and contemporary challenges*, 2nd edn. (Hoboken: John Wiley and Son, 2013).

- review of initial effects findings and conclusions concerning the relative merits of alternatives;
- formal review of submitted proposals for approval, including environmental impact statements (or the equivalent in sustainability-based assessments), as appropriate draft review recommendations and decisions by the responsible authorities; and
- design of and participation in monitoring programmes and review of findings and response plans.[274]

While each of these basic components enjoys some recognition in assessment practice in Canada, special and renewed attention needs to be given to providing the capacity and funding necessary to enable representation of important interests and considerations not otherwise effectively included (for example, disadvantaged populations, future generations, broader socio-ecological relations). This will be a significant step given that only two jurisdictions in Canada currently offer some level of support to participants. Provisions for public hearings on cases of particular public interest and significance for sustainability will also have to include explicit detailed criteria for determining when public hearings are necessary and the establishment of an arm's-length body for advising on contested cases.

Initiating deliberative forums as an integral component of participation also requires new attention. Proponents, who most often lead participatory activities, frequently use open houses (and similar consultation methods), while government officials occasionally convene hearings, with the result that dialogic participation techniques are rarely used in Canadian assessment processes. As Sinclair and Diduck have noted, effective techniques for assessment participation use vehicles such as multi-stakeholder advisory committees and task forces, mediation and non-adversarial negotiation, and community boards to facilitate ongoing dialogue and communication among project proponents, environmental assessment officials, and civic organizations, and serve important mutual learning, relationship building, and conflict resolution functions.[275] Such approaches also anticipate the re-engagement of public officials and experts as well as stakeholders and members of the public in the participatory process.

Beyond specific provisions for involvement, next generation assessment also requires the establishment of a multi-stakeholder advisory body for open deliberations on issues and options for regulatory attention and other key matters of process implementation. Also needed are mandatory requirements for regular and open public reviews of assessment regime performance, including consideration of potential improvements to participatory processes.

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[274] A. John Sinclair and Alan P. Diduck, "Public participation in Canadian environmental assessment: enduring challenges and future directions," in Kevin S. Hanna, ed., *Environmental Impact Assessment: practice and participation*, 3rd edn. (Toronto: Oxford University Press, 2016), pp.65-95.
[275] Ibid.

9. Review and decision-making processes

Thorough review of environment assessment documentation through credible and transparent decision-making processes is another essential component of next generation assessment. A basic aim in this regard is to ensure consistent efforts to serve the objectives of assessment to advance prospects for lasting wellbeing in all key decision making – not only about proponent assessments, but also about proposed assessment policies, guidance and other matters concerning regime implementation. Next generation assessment must also enhance the quality and credibility of assessment decision making, including by guarding against bias in public proceedings where the more narrowly motivated proponent leads proposal development and assessment.

As outlined above, more credible decision making will require mandatory development and application of explicit sustainability-based criteria, specified for the context of the case at hand. Evaluations of effects predictions, comparison of options and other key assessment review matters need to be based on the application of the explicit sustainability-based criteria developed. The review process also must be transparent and open to effective government, stakeholder and public engagement from the beginning of the deliberations. Regulation must allow the extent, nature and formality of requirements scaled to the significance of opportunities to avoid adverse effects and/or enhance positive ones, the level or potential for public concern and the potential for conflict or consensus.

Ensuring rigorous and open reviews will require multiple review process options that recognize differences among assessment streams, between strategic and project level undertakings, between single and multi-jurisdictional cases, and between cases promising conflict or consensus. Potentially desirable options include

- semi-formal public discussions with impartial facilitation where feasible and reasonable;
- reviews led by a credible government review body receiving open comments, and issuing draft findings, conclusions and recommendations for public review before finalization;
- informal hearings by an independent panel with members appointed in light of explicit selection criteria;
- opportunities for negotiation, arbitration or mediation (perhaps only on certain elements of a review);
- formal hearings, including consolidated hearings of two or more agencies and/or jurisdictions; and
- reviews with public deliberations led by independent experts with public review experience, such as those by the Royal Society[276] and OEER Association.[277]

[276] Conrad Brunk and Brian Ellis, *Elements of Precaution: recommendations for the regulation of food biotechnology in Canada* by (Ottawa: Royal Society of Canada, 2001).
[277] OEER, *Fundy Tidal Energy Strategic Environmental Assessment,* prepared for the Nova Scotia Department of Energy (April 2008), available at http://www.marinerenewables.ca/wp-content/uploads/2012/11/Fundy-Tidal-Energy-Strategic-Environmental-Assessment-Final-Report.pdf.

10. Decisions

While the decision to approve a proposed undertaking attracts most attention, influential decisions are made at all stages of assessment processes. Many key decisions are made by or for the private or public sector proponents of undertakings subject to assessment requirements. Much of assessment law is aimed at guiding these proponent decisions, both directly by setting out assessment requirements and indirectly by establishing review, approval and other tests to ensure the requirements are met. Next generation environmental assessment must aim to ensure that all of these decisions are credible and sustainability-enhancing.

To be aligned with the purposes of next generation assessment, all decisions should aim to expand understanding and illuminate application of the "contribution to sustainability" test to the proposal and alternatives at hand. Approval decisions, in particular, play the gatekeeping role of ensuring that the earlier studies, deliberations and choices have delivered a proposed undertaking that represents the best option in the public interest, will deliver multiple mutually reinforcing gains and avoid significant adverse effects. Each approval decision must be supported by persuasive evidence reflecting application of the context-specified sustainability criteria. The main uncertainties must be identified. And where trade-offs are unavoidable, approval decisions must be accompanied by reasons based on the sustainability criteria and following explicit trade-off rules.

Next generation assessment law will also need provisions to ensure that decisions and conditions of approval (which may include meeting commitments made by the proponent in the proceedings) are practically enforceable. This will entail specification of enforcement and penalty powers; expectations for clear delineation of commitments and conditions of approval; and explicit allocation and provision of resources for, compliance monitoring and enforcement responsibilities.

Throughout all assessment decision making, the preference is for participative and, to the extent possible, consensus-based approaches, subject to adherence to the sustainability-based criteria. Over time, key next generation features, including insistence on public interest purposes and results, should increase prospects for consensus in assessment processes. Significant conflicts in aims and interests are, however, likely to characterize many future assessment cases. While integration of conflict management capacities in assessment deliberations may mitigate some tensions, assessment processes must continue to emphasize provisions not only for effective engagement (see "participation," above) but also for fair adjudication.

Consequently, decision-making responsibility and authority must be vested in credible and accountable hands. Credibility is most likely for impartial decision makers who have been closely engaged in the deliberations and evidence and accountability is most likely for elected officials. In these circumstances, the best option is likely to be reliant on approval decision making initially by the impartial government authority (in government but at arms length from particular departmental mandates or partisan pressures) that

considered the evidence, with ultimate ministerial/Cabinet(s) authority within a specified period following the initial ruling to reverse, revise, or require reconsideration or new review. These arrangements would need to be accompanied by provisions for quasi-judicial appeals of the initial decision and judicial review of the ultimate political decision. The appeal should be based on a standard of correctness, whereas the judicial review could be based on reasonableness. Both avenues would consider whether the decision was adequately justified, based on and consistent with the sustainability-based criteria, and whether the decision-making process was fair.

11. Monitoring of effects and compliance, and response to findings

Sound environmental assessment requires follow-up, yet it is most often done poorly, when it is done at all.[278] Follow-up properly includes monitoring, response to monitoring findings in environmental management, communication, and learning.[279] Monitoring programmes must aim to identify unanticipated positive and adverse effects, as well as other unpredicted pressures, opportunities and changes that may require interventions to correct or pursue. Monitoring also needs to provide an information base for ensuring that the terms and conditions of approvals are met, and commitments are fulfilled. Throughout implementation and after completion of an undertaking, those responsible for environmental management must be able to act adaptively to address problems and new opportunities identified by monitoring work. There must also be communication with regulators and the interested public and commitment to learn from the experience to enable better predictions, more reliable assessments, and better decision making in the future.[280]

Achieving these aims will depend on provisions for mandatory effects and compliance monitoring, scaled to the potential significance of the effects and contraventions, integrated into the regulatory framework of next generation assessment processes. The regulatory framework should also include powers to set requirements for

- specific commitments and conditions of approval (in part to facilitate effective monitoring of effects and compliance);
- anticipatory arrangements, and assignments of responsibility including for funding and public reporting, for monitoring of effects and compliance and for timely response to emerging problems and opportunities; and

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[278] A. John Sinclair and Meinhard Doelle, "Environmental assessment in Canada: encouraging decisions for sustainability," in Bruce Mitchell, ed., *Resource and Environmental Management in Canada: addressing conflict and uncertainty* (Toronto: Oxford University Press, 2015), pp.112-141; Bram F. Noble and Sarah N. Macharia, "Towards a working framework for 'best'-practice EA follow-up: lessons from Canadian case studies," *Prairie Perspectives* 7 (2004), pp.209-226.

[279] Angus Morrison-Saunders, Jill Baker and Jos Arts, "Lessons from practice: towards successful follow-up," *Impact Assessment and Project Appraisal* 21:1 (2003) pp.43-56,

[280] Jos Arts, Paula Caldwell and Angus Morrison-Saunders, "Environmental impact assessment follow-up: good practice and future directions," *Impact Assessment and Project Appraisal* 19:3 (2001), pp.175-185.

- public reporting of effects monitoring findings, with particular efforts to foster application of insights from monitoring in future assessments.

Regime design should anticipate monitoring and response needs by recognizing adaptive capacity as a criterion for design of approvable undertakings and implementation plans, acknowledging that effective adaptive management depends on adaptive capacity including adaptable design. Best practice in effects monitoring implementation will entail emphasis on the engagement of local residents, who are often most motivated to undertake effective monitoring, best placed to do so regularly and efficiently and most likely to gain from the learning opportunity. Best practice expectations also affect monitoring priorities. In particular, they suggest a focus on debatable predictions, untried mitigation and enhancement measures, as well as potential effects on vulnerable people, communities, species, and ecological relationships. And they encourage particular efforts in early identification of emerging problems and opportunities and response options. These monitoring and response obligations need to be treated as costs of the undertaking and not paid for from the public purse.

Compliance monitoring needs should also be anticipated in regime design. Effective compliance monitoring and response depends on ensuring that approval conditions and commitments are clear and specific enough to be monitored and that repercussions of non-compliance are well known. Rather than treating compliance monitoring findings as confidential business information, transparent public reporting should be emphasized. The findings could reward responsible proponents, shame non-compliers and contribute to monitoring of overall progress towards sustainability.

12. Learning

At least since 1995, participation in environmental assessment has been recognized as a means to broad-based individual and social learning that could enable the transition to sustainability.[281] Relying on assessment case evidence, Sinclair et al. developed a conceptual framework related to learning about and through environmental assessment. The framework establishes the potential for individual and collective capacity building and other learning, including about how to maintain and strengthen prospects for lasting

[281] Alan Diduck and Bruce Mitchell, "Learning, public involvement and environmental assessment: a Canadian case study," *Environmental Assessment Policy and Management* 5:3 (2003), pp.339-364; Patricia Fitzpatrick and A. John Sinclair, "Learning through public involvement in environmental assessment hearings" *Journal of Environmental Management* 67:2 (2003), pp.161-174; Juan R. Palerm, "An empirical–theoretical analysis framework for public participation in environmental impact assessment," *Journal of Environmental Planning and Management* 43:5 (2000), pp.581-600; A. John Sinclair and Alan P. Diduck, "Public involvement in EA in Canada: a transformative learning perspective," *Environmental Impact Assessment Review* 21:2 (2001), pp.113-136; Thomas Webler, Hans Kastenholz and Ortwin Renn, "Public participation in impact assessment: a social learning perspective," *Environmental Impact Assessment Review* 15:5 (1995), pp.443-463.

ecological, social and economic wellbeing.[282] In this regard, next generation assessment must build understandings, capacities and motivations in all sectors and among all players. Assessment would be a useful venue for increased research and practice aimed at shedding light on the factors and implications of learning-oriented approaches to participation.[283]

To capture the potential for learning, next generation assessment will need to establish contributions to mutual learning as a responsibility for all assessment participants. Relevant responsibilities include providing opportunities for and facilitation of deliberative multi-stakeholder collaboration using the full range of methods in the participation toolbox – including more deliberative forums that include scenario building and visioning, increased attention to alternative dispute resolution and increased advocacy for sustainability assessment by public interest interveners.[284] Where possible, contributions to mutual learning should occur in overall regime deliberations (for example, concerning regulation and policy development and revision) as well as in individual cases (for example, in specifying terms of reference, elaboration of sustainability-based evaluation and decision criteria for particular applications, and design and application of assessment methodologies, including in post-approval monitoring).

Especially important are strong linkages between improving the provisions, opportunities and support for public participation in next generation assessment development, review and monitoring, as outlined above, and the increased potential for mutual learning outcomes this will avail. Mandatory monitoring and public reporting of effects in comparison with effects predictions, and of the effectiveness of responses to emerging problems and opportunities, will be essential to encouraging learning outcomes that are lasting and applicable beyond a single case. In this regard, an important facilitating step will be the establishment of an easily accessed, well-organized and searchable electronic library (or linked set of libraries) of environmental assessment case materials, including documentation of impact predictions and monitoring findings, records of decisions and justifications, and associated cases in law.[285] If made available to

[282] For details see above and A. John Sinclair, Alan Diduck and Patricia Fitzpatrick, "Conceptualizing learning for sustainability through environmental assessment: critical reflections on 15 years of research," *Environmental Impact Assessment Review* 28:7 (2008), pp.415-428.
[283] A. John Sinclair, Alan P. Diduck and Morgan Vespa, "Public participation in sustainability assessment: essential elements, practical challenges and emerging directions," in Angus Morrison-Saunders, Jenny Pope and Alan Bond, eds., *Handbook of Sustainability Assessment* (Cheltenham, UK: Edward Elgar, 2015), pp.349-374.
[284] Ibid.
[285] L.E. Sanchez and A. Morrison-Saunders, "Learning about knowledge management for improving environmental impact assessment in a government agency: the Western Australian experience," *Journal of Environmental Management* 92:9 (2011), pp.2260-2271.

all, such a resource could be used by all parties in the assessment community to improve future project and strategic level assessments and decisions over time and to identify needs and opening for improvements to assessment law, regulation and policy. Regularly updating and upgrading guidance material and reviews of individual regime performance and progress towards upward harmonization within and across jurisdictions will also be required.

13. Authoritative requirements in legislation, regulation and guidance

An effective assessment process should take full advantage of the different ways elements of the process can be established – in statute, in regulations, in binding policies, and in non-binding guidance. The objective should be to enshrine in statute the key elements and expectations that are not expected to change with experience and evolving circumstances. Elements that need to be open to regular and reasonably quick adjustment should not be included in statutes. Regulations offer a middle ground in that they are still legally binding, and require some process and scrutiny to be amended, but can be amended quickly and easily by governments.

Policies and guidelines can, in some circumstances still be binding on decision makers, but are generally not, and can be changed at will. They should therefore be seen as a vehicle for providing helpful information about how parties can best carry out the legal obligations set out in statutes and regulations. Enforceable requirements are needed for new obligations that those with assessment responsibilities may not be motivated to carry out on their own.

A key objective in deciding what to include in statute, regulations, policies and guidance is to provide clarity and facilitate consistency and authority in the application of fundamental requirements while retaining flexibility to accommodate differences in undertakings and context, and to permit progressive innovation. The core elements of the assessment regime to be set out in the statute should include the following:

- a fundamental commitment to sustainability-based public interest purposes, principles and core criteria for decision making;
- basic components of the scope of assessment, including requirements for establishment of public interest based needs and purposes, comprehensive coverage of sustainability-related considerations, focus on cumulative effects, comparative evaluation of potentially reasonable alternatives;
- the essential characteristics of different streams of assessment for undertakings that merit more or less demanding expectations and review processes;
- central provisions guaranteeing and facilitating meaningful public engagement throughout the assessment process;
- core process elements and process alternatives (especially streams, see above) specified in law with explicitly limited openings for discretionary avoidance or compromise;
- application to strategic as well as project level undertakings and provisions for linking strategic and project level assessments;

- requirements for explicit development and application of case-specified sustainability-based criteria, elaborating the core criteria set in the law; and for application in decision making, including explicit justification of trade-offs;
- transparent, accountable and enforceable decisions and conditions;
- mandatory monitoring of effects and compliance, comparison of actual and predicted effects, and identification of response needs and options;
- provisions for effective enforcement of assessment requirements, including terms and conditions of approval;
- independent monitoring and regular review of the regime for continuous improvement; and
- provisions for coordination and consolidation with equivalent assessment processes and process components in other jurisdictions.

Core elements set out in statute should be elaborated upon in more easily amended regulations. For example, detailed rules of application of the assessment process with emphasis on pre-identification of undertakings requiring assessment should be set out in regulations and updated as needed. Rules on how strategic level assessments can help streamline project level assessments can similarly be set out in regulations and developed with experience.

Non-binding guidance should focus on issues such as suitable approaches to specifying sustainability-based evaluation and decision criteria, clarification of implications for different sectors, regions and other circumstances, and emerging best practice methods for effects identification and assessment, including methods of addressing interactive effects, cumulative effects and uncertainties in assessments.

14. Process administration

Any credible assessment regime depends heavily on capable and impartial overall process application and management. While expectations for the body assigned to the task centre on administrative implementation of the requirements set out in the laws and regulations establishing the regime, they necessarily also extend into making important decisions that affect the quality of assessment processes and the substance of assessment rulings.

Obvious decision-making roles include those related to specifying requirements for particular cases and carrying out formal reviews of proposed undertakings that are not assigned to public review panels. Decision-making responsibilities will also be involved in establishing the key details about process components and procedures (e.g. for each assessment stream), clarifying new provisions (e.g. for strategic level assessments and linked strategic and project level assessments) and requirements (e.g. for development and application of sustainability-based evaluation criteria and trade-off rules), and ensuring appropriate support for effective public participation (e.g. through intervenor funding programmes).

In addition, the administrative body would participate in assessment learning and regime evolution. The body would need to monitor application successes and limitations, including strengths and deficiencies of impact predictions, public engagement, trade-off avoidance, compliance and effects monitoring. It would be responsible for identifying emerging needs and opportunities; considering implications for revision of procedures and guidance (and possibly regulations and statutory requirements); and consulting on response options.

Beyond internal functions, the administrative body would have responsibilities to collaborate with others within and beyond the immediate jurisdiction. The roles would include collaboration with

- governments and other bodies engaged in the broader development and application of sustainability-based decision principles and guidance, including sustainable development strategies that could inform and be informed by strategic and project assessment findings;
- bodies with expertise needed in assessment design, review and monitoring;
- bodies with complementary mandates and authority for monitoring trends, enhancing positive sustainability effects and avoiding or mitigating damage and risk;
- agencies leading or administering the development and review of strategic level undertakings that could be or become equivalent to strategic level environmental assessments and be effectively linked into tiered assessment arrangements;
- regulatory licensing bodies with interests in harmonized information and process requirements;
- bodies in other jurisdictions that may be willing to engage in joint and coordinated assessments, establishment of inter-jurisdictional tiering arrangements, joint research and policy development, and more generally the advancement of upward harmonization of assessment processes and requirements; and
- leaders of other sustainability-based activities and initiatives within and beyond government.

The administrative body should be required and empowered to be broadly consultative in carrying out its mandate. An important vehicle for consultation would be a multi-stakeholder advisory body (or bodies) that is consulted generally on matters of regulation, policy and guidance development. Particular topics suitable for advisory body attention include guidance on application of assessment requirements to strategic undertakings, tiering, means of enhancing participative engagement, best practice assessment methodologies, specification of sustainability criteria including for particular individual sectors and regions, application rules for different assessment streams and allocation of categories of undertakings to different streams.

Because of significance and delicacy of these roles and the comprehensive scope of the sustainability-based agenda, the location of the administrative body within government is important, as are arrangements for ensuring its credibility and impartiality. The matter of location is most difficult. Clearly the body should be situated at arm's length from

particular departmental mandates and partisan political interests. Probably it should also be positioned near the centre of government authority, rather than assigned to report to government through the environment minister or equivalent, as is now common in federal and provincial arrangements. Regime design must, however, ensure that movement of next generation assessment to a more central reporting position is done only where firm sustainability commitments ensure no loss of emphasis on the biophysical foundations of wellbeing.

The independent decision-making authority of the administrative body should be subject to override by the elected government as represented by Cabinet. However, any Cabinet override must be accompanied by an explicit public justification that respects the legislated purposes. For broader accountability, the administrative body should also be subject to mandatory transparency of reasons for decisions as well as regular independent auditing (e.g. by an equivalent of the federal Commissioner of the Environment and Sustainable Development), with public reporting of findings.

15. Linkages beyond assessment

Assessment that seeks best contributions to sustainability is considerably more ambitious than assessment that is satisfied with mitigating adverse effects. Nevertheless, it is only one of many means of pursuing lasting wellbeing. These means will need to be diverse, innovative and adaptable to opportunities. But the main initiatives of public government will be served better if coordinated and, where feasible, integrated. Accordingly, environmental assessment should be linked with governments' broader efforts to identify emerging challenges and opportunities, set priorities, initiate responses, review progress and adjust accordingly.

To facilitate desirable connections, next generation assessment needs legislative and policy provisions for collaborations with and other links to

- sustainability-related policy-making, including development of sustainability principles, criteria and strategies;
- regional and sectoral planning regimes and *ad hoc* planning initiatives (especially where these may become assessment equivalents at the strategic level);
- regulatory permitting and licensing; and
- sustainability reporting and other data banking that may inform assessment deliberations and should be linked to assessment products including assessment and monitoring findings.

More broadly, assessment process interests should be involved in inquiries into the design and application of other complementary tools to strengthen motivations for shifts to more sustainability-enhancing undertakings, structures, behaviours – for example, through pricing (of carbon and ecological goods and services), pilot/demonstration projects, ecological tax reform, non-economic status enhancement, and shame-based mechanisms.

Assessment processes would also benefit from participation in multi-party efforts to clarify and rationalize relations between environmental assessment and negotiation of private agreements that may have significant implications for project effects. These include agreements between project proponents and Aboriginal authorities and/or other communities or regions, concerning matters such as the distribution of economic opportunities and revenues, the mitigation and enhancement of other effects, and/or provisions for monitoring and response.

16. Effectiveness, efficiency and fairness considerations

The perceived trade-off between effectiveness and efficiency, at the expense of fairness, has dominated the implementation of environmental assessment since its inception.[286] In next generation sustainability-centred assessment applications, effectiveness, efficiency and fairness are recognized to be interdependent and not candidates for trading off one for the other. In this context, effectiveness is centred on success in serving the purposes of sustainability-based environmental assessment (see above), while efficiency is the achievement of maximum benefit from the use of resources to deliver effectiveness. Fairness includes substantive fairness (enhancement of equity in the distribution of the positive and adverse effects of decisions, within and among generations) and process fairness (fairness in effective opportunity for able and influential engagement in deliberations and impartiality in decision making).

Within a sustainability-based assessment regime, effectiveness, efficiency and fairness in the delivery of positive contributions to sustainability are most likely to be enhanced by: clear generic rules, maintained beyond discretionary avoidance or compromise; early application; consistent guidance (e.g. from the strategic level to project planning); flexibility to recognize key contextual factors; and placing assessment at the centre of decision making on assessed undertakings. Within a jurisdiction, application of these enhancements will most likely be improved further with a strong commitment to progress towards sustainability, that includes collaboration and linking of associated policy, planning/assessment regulatory licensing and monitoring processes. This will require agencies within a jurisdiction to have shared sustainability-based purposes, shared information and expertise, equivalency of scope in policy, planning and assessment, equivalency of opportunity for effective public engagement, provisions for tiered guidance (for example, through law and policy to guide broad planning, in turn to guide project planning) and a focus on the collaborative implementation of associated policy, planning and regulatory licensing processes.

Across jurisdictions (federal/provincial/territorial/Aboriginal), effectiveness, efficiency and fairness in the delivery of positive contributions to sustainability are most

[286] A. John Sinclair and Meinhard Doelle, "Environmental assessment in Canada: encouraging decisions for sustainability," in Bruce Mitchell, ed., *Resource and Environmental Management in Canada: addressing conflict and uncertainty* (Toronto: Oxford University Press, 2015), pp.112-141; Meinhard Doelle, *The Federal Environmental Assessment Process: a guide and critique* (Markham: LexisNexis, 2008).

likely to be enhanced by upward harmonization of assessment law and process to ensure equivalency in the key process components (purposes, scope, participative opportunities, etc.) as a foundation for linking associated policy, planning/assessment regulatory licensing and monitoring processes, and by sharing information and expertise. Such actions should be guided by general law and process harmonization principles that include

- acceptance of process diversity within equivalency of fundamental process components;
- emphasis on broad engagement, sharing of expertise and learning (especially as governments reduce their in-house expertise in key areas of environmental assessment issues and applications); and,
- recognition that the greatest efficiency gains may require broader system changes that strengthen or expand motivations to incorporate attention to sustainability-related considerations (through carbon taxes, transparency in corporate reporting, requirements for free, prior and informed consent from affected communities, etc.).

Environmental assessment has always been about changing entrenched practices and next generation environmental assessment pushes this further. The transition to decision making that seeks positive contributions to sustainability, rather than only mitigation of significant adverse effects, is meant to bring lasting benefits and substantive fairness in relation to the distribution of the positive and adverse effects of decisions. Inevitably, however, this will cause disruptions and, despite best efforts, will involve trade-offs. In all change, risks are greatest for the sociologically and ecologically vulnerable. Next generation assessment must ensure consistent and committed attention to reduction of risks to the most vulnerable and fair distribution of the benefits. The likelihood of achieving this transition will be enhanced with provisions that at least ensure procedural fairness.

Conclusions and ways forward

Next generation environmental assessment has been presented here as a key means of assisting a transition from broadly unsustainable trends to brighter prospects for lasting wellbeing. No such transition can be quick and easy. Establishing the new assessment regimes with the components sketched out here will demand much at all levels of government. Significant shifts in objectives, structures and practices are involved and it is safe to assume that some of the needed changes will face serious resistance. But a future path without such changes is likely to be a good deal less comfortable. Environmental assessments in Canada are already venues for conflicts rooted in concerns about cumulative risks damages to lands, waters, traditional territories, climate and fairness in the distribution of benefits and risks. We consequently all have good reason to begin the learning process that will take us to next generation assessment.

Opportunities to implement what we have outlined above will arise at different times and in different ways in jurisdictions across Canada. Immediate progress could be made

through adjustments at the regulatory or policy level. Other incremental improvements can be achieved through the application of particular tools, such as federal-provincial harmonization agreements, pilots to explore collaborative strategic environmental assessments, and experimental tiering of existing sustainability-based strategic planning with relevant project assessments. As has been done in some Canadian Environmental Assessment Agency panel reviews, the application of sustainability criteria and a net contribution to sustainability test can continue to be advanced on a case by case basis. In short, considerable progress can continue to be made within existing legislative structures.

A more fundamental shift towards the approach to environmental assessment that we have proposed is also now a realistic possibility. At the federal level, the new government's directive to review and reform federal environmental assessment provides a critical opportunity for transition towards the next generation. Provinces feeling the impact of the previous federal government's retreat from environmental assessment may choose to act on their own but could gain more through cooperation with the new federal government and other authorities on fundamental reform.

There are many ways to initiate a broader discussion in Canada about the need for the kind of reform to environmental assessment we have outlined here. A multi-stakeholder process to develop and implement a next generation best practice standard for environmental assessment in Canada would be one way forward, with the promise of moving jurisdictions at all levels of government, including federal, aboriginal, provincial and municipal governments, towards the implementation of a sustainability-based assessment and decision-making approach that is integrated, transparent, and accountable.

Appendix 1: Generic Criteria Categories for Sustainability Assessments

Socio-ecological system integrity
the requirement
Build human-ecological relations to establish and maintain the long term integrity of socio-biophysical systems and protect the irreplaceable life support functions upon which human as well as ecological well-being depends.

illustrative implications:
- need to understand better the complex systemic implications of our own activities
- need to reduce indirect and overall as well as direct and specific human threats to system integrity and life support viability

Livelihood sufficiency and opportunity
the requirement:
Ensure that everyone and every community has enough for a decent life and that everyone has opportunities to seek improvements in ways that do not compromise future generations' possibilities for sufficiency and opportunity.

illustrative implications:
- need to ensure provision of key prerequisites for a decent life (which, typically, are not now enjoyed by those who have little or no access to basic resources and essential services, who have few if any satisfactory employment opportunities, who are especially vulnerable to disease, or who face physical or economic insecurity)
- need to appreciate the diversity, and ensure the involvement, of those whose needs are being addressed

Intragenerational equity
the requirement:
Ensure that sufficiency and effective choices for all are pursued in ways that reduce dangerous gaps in sufficiency and opportunity (and health, security, social recognition, political influence, etc) between the rich and the poor.

illustrative implications:
- need to build sustainable livelihoods for all, including practically available livelihood choices and the power to choose
- need to emphasize less materially and energy intensive approaches to personal satisfactions among the advantaged, to permit material and energy sufficiency for all

Intergenerational equity
the requirement:
Favour present options and actions that are most likely to preserve or enhance the opportunities and capabilities of future generations to live sustainably.

illustrative implications:
• need to return current resource exploitation and other pressures on ecological systems and their functions to levels that are safely within the perpetual capacity of those systems to provide resources and services likely to be needed by future generations
• need to build the integrity of socio-ecological systems, maintaining the diversity, accountability, broad engagement and other qualities required for long term adaptive adjustment.

Resource maintenance and efficiency
the requirement:
Provide a larger base for ensuring sustainable livelihoods for all while reducing threats to the long term integrity of socio-ecological systems by reducing extractive damage, avoiding waste and cutting overall material and energy use per unit of benefit.

illustrative implications:
• need to do more with less (optimize production through decreasing material and energy inputs and cutting waste outputs through product and process redesign throughout product lifecycles) to permit continued economic expansion where it is needed, with associated employment and wealth generation, while reducing demands on resource stocks and pressures on ecosystems
• need to consider purposes and end uses recognizing that efficiency gains are of no great value if the savings go to more advantages and more consumption by the already affluent

Socio-ecological civility and democratic governance
the requirement:
Build the capacity, motivation and habitual inclination of individuals, communities and other collective decision-making bodies to apply sustainability requirements through more open and better informed deliberations, greater attention to fostering reciprocal awareness and collective responsibility, and more integrated use of administrative, market, customary and personal decision-making practices.

illustrative implications:
• need governance structures capable of integrated responses to complex, intertwined and dynamic conditions
• need to mobilize more participants, mechanisms and motivations, including producers, consumers, investors, lenders, insurers, employees, auditors, reporters
• need to strengthen individual and collective understanding of ecology and community, foster customary civility and ecological responsibility, and build civil capacity for effective involvement in collective decision making

Precaution and adaptation
the requirement:
Respect uncertainty, avoid even poorly understood risks of serious or irreversible damage to the foundations for sustainability, plan to learn, design for surprise, and manage for adaptation.

illustrative implications:
• need to act on incomplete but suggestive information where social and ecological systems that are crucial for sustainability are at risk
• need to design for surprise and adaptation, favouring diversity, flexibility and reversibility
• need to prefer safe fail over fail-safe technologies
• need to seek broadly comprehensible options rather than those that are dependent on specialized expertise
• need to ensure the availability and practicality of backup alternatives
• need to establish mechanisms for effective monitoring and response

Immediate and long term integration
the requirement:
Apply all principles of sustainability at once, seeking mutually supportive benefits and multiple gains.

considerations:
• integration is not the same as balancing
• because greater efficiency, equity, ecological integrity and civility are all necessary for sustainability, then positive gains in all areas must be achieved
• what happens in any one area affects what happens in all of the others
• it is reasonable to expect, but not safe to assume, that positive steps in different areas will be mutually reinforcing

illustrative implications:
• need positive steps in all areas, at least in general and at least in the long term
• need to resist convenient immediate compromises unless they clearly promise an eventual gain

- from Robert B. Gibson *et al.*, *Sustainability Assessment: Criteria and Processes (London: Earthscan, 2005).*

Appendix 2: Basic Trade-off Rules for Sustainability Assessments

Maximum net gains
Any acceptable trade-off or set of trade-offs must deliver net progress towards meeting the requirements for sustainability; it must seek mutually reinforcing, cumulative and lasting contributions and must favour achievement of the most positive feasible overall result, while avoiding significant adverse effects.

Burden of argument on trade-off proponent
Trade-off compromises that involve acceptance of adverse effects in sustainability-related areas are undesirable unless proven (or reasonably established) otherwise; the burden of justification falls on the proponent of the trade-off.

Avoidance of significant adverse effects
No trade-off that involves a significant adverse effect on any sustainability requirement area (for example, any effect that might undermine the integrity of a viable socio-ecological system) can be justified unless the alternative is acceptance of an even more significant adverse effect.

- Generally, then, no compromise or trade-off is acceptable if it entails further decline or risk of decline in a major area of existing concern (for example, as set out in official international, national or other sustainability strategies or accords or as identified in open public processes at the local level), or if it endangers prospects for resolving problems properly identified as global, national and/or local priorities.

- Similarly, no trade-off is acceptable if it deepens problems in any requirement area (integrity, equity, etc.) where further decline in the existing situation may imperil the long term viability of the whole, even if compensations of other kinds, or in other places are offered (for example, if inequities are already deep, there may be no ecological rehabilitation or efficiency compensation for introduction of significantly greater inequities).

- No enhancement can be permitted as an acceptable trade-off against incomplete mitigation of significant adverse effects if stronger mitigation efforts are feasible.

Protection of the future
No displacement of a significant adverse effect from the present to the future can be justified unless the alternative is displacement of an even more significant negative effect from the present to the future.

Explicit justification
All trade-offs must be accompanied by an explicit justification based on openly identified, context specific priorities as well as the sustainability decision criteria and the general trade-off rules.

• Justifications will be assisted by the presence of clarifying guides (sustainability policies, priority statements, plans based on analyses of existing stresses and desirable futures, guides to the evaluation of "significance", etc.) that have been developed in processes as open and participative as those expected for sustainability assessments.

Open process
Proposed compromises and trade-offs must be addressed and justified through processes that include open and effective involvement of all stakeholders.

• Relevant stakeholders include those representing sustainability-relevant positions (for example, community elders speaking for future generations) as well as those directly affected.

• While application of specialized expertise and technical tools can be very helpful, the decisions to be made are essentially and unavoidably value-laden and a public role is crucial.

- from Robert B. Gibson *et al.*, *Sustainability Assessment: Criteria and Processes (London: Earthscan, 2005).*