

Sustainability Assessment

Pluralism, practice and progress

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In preparing for public hearings, the Proponent, interveners and other participants should be aware that the Panel will evaluate the specific and overall sustainability effects of the proposed project and whether the proposed project will bring lasting net gains and whether the trade-offs made to ensure these gains are acceptable in the circumstances.

Mackenzie Gas Project Joint Review Panel (2005)

Introduction

Canada is a big and mostly fortunate country. It has plenty of space and considerable capacity for a wide range of experiments with many things, including sustainability assessments. For a variety of reasons, Canada does not have a formal sustainability-based assessment regime, at least not one that can easily be tested against the criteria set out in this book. But it does have a long and illuminating record of *de facto* sustainability assessments, only some of which were initiated under environmental assessment law. The discussion to follow will survey the range and high points of Canadian experience with sustainability assessments, identify strengths and limitations, and consider what broader lessons may be drawn from experience that is, inevitably, somewhat peculiar to the country involved.

Sustainability assessment as public practice

Humans have been immigrating to Canada for 20,000 years or more, bringing and building a diversity of cultures in a wide variety of climates and ecologies. The earliest arrivals, peoples now considered Aboriginal, were and mostly remain more inclined to assess options from a sustainability perspective than the European and other traditions that arrived later. The usual modern ideas that are centred on economic growth through the conquest of nature have prevailed in Canada as almost everywhere else. But there have always also been detectable counter positions – appreciations of place, community and beauty

that maintained longer and richer perspectives. And even in such a rich and generally advantaged country, the costs of unsustainable practices and needs for more farsighted and broadly beneficial undertakings have been visible to anyone who cares to notice.

It should not be surprising, then, to find examples of sustainability-based deliberation in many forms and venues. When lobster fishers operating out of a small harbour on Cape Breton Island, Nova Scotia, consider how best to maintain their customary means of allocating access to preserve the resource and community incomes fairly over the long term, they are engaged in a form of sustainability assessment. So are farmers and conservationists in Norfolk County, Ontario, discussing how to support agricultural livelihoods as well as ecological rehabilitation through payments for ecological goods and services. The multi-stakeholder development of Forest Stewardship Council certification rules for particular Canadian forests involves sustainability assessment. An undergraduate student group that is organizing a cooperative lunch counter serving local and fair trade products is carrying out a series of sustainability-based assessments.

I could go on. Probably I could fill this chapter with Canadian examples and merely scratch the surface. A roughly similar case might be made for most parts of the world. Probably most exemplary initiatives that seek lasting gains across a range of interdependent objectives arose from some form of sustainability assessment and may be applying that approach still through iterative learning. The words 'sustainability' and 'assessment' may not have been used. The participants may not have seen their effort as a special process. Perhaps no single decision or consequent undertaking was involved, and no particular legislated obligation or set of formal procedures ruled. Typically these assessments were and are phenomena of governance rather than government, of voluntary collaborations rather than formal authority. They are not usual subjects for evaluations of assessment processes and no one to my knowledge has attempted even to define the main categories, much less assemble a reasonably comprehensive list of the most notable cases. But while it is not possible in this space to present a reasonably credible and comprehensive review of these initiatives, it is crucial to recognize their significance – their evident number and diversity, their presence at every scale from the neighbourhood to the nation, their substantial (if more or less seriously imperfect) adherence to the basics of sustainability assessment, and most importantly their base in the recognized demands of actual circumstances rather than the imperatives of law and policy.

For the purposes of this chapter on sustainability assessment in Canada, I will focus on the experience to date in formal processes driven by government authority of some sort. As will be discussed below, the formal versions of sustainability assessment in Canada have also been numerous and diverse. They too have been mostly *ad hoc* and in many cases have happened despite, rather than because of, what was established by the relevant authorities.

In this they have reflected the character, and indicated the influence of the less formal initiatives. It is impossible to determine just how much the evolution of formal sustainability assessments in Canada owes to the proliferation of less formal, collaborative and circumstance-driven sustainability-based deliberations. But certainly a chapter on sustainability assessment in Canada properly begins with a salute to the innovators outside the usual assessment circle.

Evaluating formal sustainability assessments in Canada

In the introductory chapter of this book, I argued that the core of what sustainability assessment should deliver lies in six imperatives: sustainability assessment must

- aim to reverse the prevailing (unsustainable) trends
- integrate attention to all of the key intertwined factors that affect sustainability
- seek mutually reinforcing gains
- minimize trade-offs
- respect the context
- be open and broadly engaging.

These imperatives are complemented by other key considerations in the editors' Chapter 8, which sets out a more complete set of criteria emphasizing as well matters of procedural completeness, efficiency, learning, accommodation of interests, and actual delivery of substantive improvements.

Taken together, these criteria set a high standard. Whether any of the informal and collaborative initiatives discussed above meet this standard is an open question. In the realm of more formal, government-led law and practice involving assessments of some sort, it is doubtful that any existing regime comes close to providing a clear set of requirements and procedures for consistently effective, sustainability-based assessment. There is room for debate here because no one has attempted a comprehensive analysis of the many regimes that should be considered.

In Canada, responsibilities for sustainability-related issues are divided and shared among federal, provincial, territorial, Aboriginal, and municipal authorities. Some of the resulting complexities are evident in the multiplicity of law-based environmental assessment processes. The *Canadian Environmental Assessment Act* (Government of Canada, 2011) is accompanied by assessment legislation in each of the ten provinces and three territories, plus several more based in Aboriginal land claim agreements. Additional strategic level assessment requirements are established within law-based regimes for

urban and regional planning and for many particular sectors (e.g. management of forest lands, electrical energy systems, and telecommunications). And special project-level assessment requirements of various kinds are set out in laws concerning nuclear facilities, aggregates extraction, exports financing, and a host of other matters. No two of these regimes are the same. Not surprisingly, the challenges of coordination have led to many calls for harmonization and simplification. At the same time, however, some of the most salutary advances in public policy substance and process have come from initiatives of interjurisdictional collaboration, combining existing processes and/or establishing new joint mechanisms. That has been the story in sustainability assessment.

None of these many formal planning and/or assessment regimes in Canada include explicit recognition of the six core imperatives of sustainability assessment or are designed to meet more than a few of the other criteria set out in this book. The most that can be claimed is that over the past 40 years, a promising series of individual assessments or assessment-like initiatives have explored and demonstrated some of the rich possibilities of sustainability-based deliberation and evaluation. While no initiatives would satisfy all of the criteria, the cases collectively represent the gradual emergence of sustainability assessment practice in Canada and the best examples are, despite their imperfections, probably at the leading edge of practice in the world.

The following section provides brief accounts of seven initiatives that were, effectively, sustainability assessments. The seven were undertaken by several different authorities, sometimes in collaboration, and relied on a variety of legal foundations, including planning, resource management, and public inquiries law as well as environmental assessment legislation. All of these assessments were exceptional and most involved special arrangements to deal with a particularly challenging or controversial topic. The first three begin with the initial, powerful precedent of the Mackenzie Valley Pipeline Inquiry, and include a strategic-level forest-sector case under environmental assessment law, and a regional urban growth management case under planning law. They represent a larger diversity of examples with similar fundamentals. The last four cases provide the nearest Canadian approximation of an emerging line of practice. All are major project assessments (one is effectively strategic as well) where an explicit sustainability test was applied by independent review panels with public hearings, and all of them rest on provisions of the Canadian Environmental Assessment Act combined with the requirements of at least one other jurisdiction. These cases are characterized by the gradual evolution of sustainability assessment practice to emphasize rigorous comparative evaluation of alternatives in light of a well-developed and quite comprehensive set of sustainability criteria.

Seven sustainability assessments

The Mackenzie Valley Pipeline Inquiry (1974–1977)

In Canada in the 1970s, governments faced rising environmental awareness, demands for more transparent and participative decision making, and belatedly recognized Aboriginal rights. These influences came together in controversies surrounding a proposed multi-billion dollar pipeline to carry natural gas from Alaska and the Canadian western arctic, up the Mackenzie Valley in the Northwest Territories to markets in the south. In response, the federal government appointed Mr Justice Thomas Berger of the British Columbia Supreme Court to carry out a special public inquiry.

Berger's formal mandate was to examine the potential social-economic and cultural as well as biophysical effects of the proposed project and to recommend suitable terms and conditions for approving the project. However, he recognized that decisions on the pipeline would also be decisions about the future of a large portion of the Canadian north and that two competing visions were in play. For the project proponents, the north was a resource frontier for the industrial economy; for the largely Aboriginal residents, the north was a homeland. Berger's inquiry therefore centred not just on the effects of the pipeline and other developments it would induce, but also on whether and how the two visions could be reconciled (Gamble, 1978; Dacks, 1981; Page, 1986).

Assisted by great public interest across Canada, Berger used his independent authority to hold quasi-judicial public hearings with technical sessions for experts and community sessions in every settlement along or near the pipeline route. He also introduced intervenor funding, the provision of public funds to facilitate effective participation by stakeholders who have relevant perspectives and interests but who lack adequate resources (Gamble, 1978, pp.949–950).

Berger's final report, *Northern Frontier, Northern Homeland*, compared pipeline options, evaluated potential effects and uncertainties, and most notably, recommended a ten-year delay of project approval to allow for negotiation of land claims agreements between the governments and Aboriginal groups (Berger, 1977). Government authorities agreed, though it is not clear whether they were moved by Berger's arguments so much as by rising doubts about the project's potential economic viability in the face of competition from cheaper gas supplies near existing distribution systems in Alberta (Robinson, 1983). The pipeline proposal did not re-emerge for another quarter century.

Ontario's class environmental assessment of timber management on crown lands (1987–1994)

The forest industry in Canada has long been economically important, politically influential and, in many places, heavily reliant on harvesting from

publicly owned 'crown lands' under provincial authority. Traditionally, the provinces have exercised their planning and permitting control in close collaboration with the industry, treating forests mostly as a source of timber and fibre, and favouring foreseeable economic priorities over resource sustainability.

In Ontario, the inevitably rising conflicts with other forest users came to a head in the 1980s. By an accident of timing, the venue for the policy debate was the provincial environmental assessment process. The Ontario *Environmental Assessment Act* applies automatically to all provincial undertakings, plans as well as projects, unless formally exempted from assessment. To avoid multitudes of individual assessments of particular plans for access roads, harvesting, renewal and maintenance, the province invented a strategic level 'class environmental assessment' mechanism. It would address overall management issues and set out processes for developing and approving more specific plans for each of the 114 forest management units in the province.

In 1987, after more than a decade of delays, the Ministry of Natural Resources submitted its *Class Environmental Assessment for Timber Management on Crown Lands in Ontario* for quasi-judicial public hearings before a panel of the Environmental Assessment Board. Critics found the Ministry's class assessment document vague, narrowly focused on timber priorities and unlikely to maintain forest values in perpetuity. But it opened an inquiry into broad alternatives for forest planning and management, considering the full range of social, economic and cultural as well as biophysical effects, the implications for all forest uses and users, and the lasting maintenance of the resource (Dunster *et al.*, 1989).

The hearings lasted nearly four years. Virtually everyone found them unacceptably long, difficult and costly. But they played a major role in inducing a substantial policy shift that may not have been accomplished otherwise. Throughout all the previous years, Ministry officials had held firmly to their traditional focus on supplying the forest products industry, rather than integrated multi-purpose forest management engaging all forest interests. By the end of the hearings, the Ministry had adopted policy reforms recognizing non-timber uses of forest lands and introducing a consultative approach to forest planning. In April 1994, when the Board finally issued an approval with a long list of detailed conditions (EAB, 1994), the province had a new 'Policy Framework for Sustainable Forests' and was about to pass a new *Crown Forest Sustainability Act*, responding to the issues raised at the hearings.

While the Ontario timber management case was not formally an exercise in sustainability assessment, sustainability questions underlay all of the deliberations. The approach taken was messy and aggravating. It nevertheless demonstrated the power of assessment processes to encourage sustainability-oriented reform of basic policies and processes in the face of stiff proponent-resistance.

Development of an urban growth management strategy for British Columbia's Capital Regional District (1996-2003)

British Columbia's Capital Regional District (CRD) includes the city of Victoria and 15 adjacent municipalities and electoral districts at the south end of Vancouver Island. By the early 1990s the region was facing significant growth controversies. The population had been expanding quickly but the region, almost encircled by water, had limited space for urban expansion and strong public support for the remaining green spaces, recreational areas and agricultural lands. Unfortunately, no mechanism for effective response was immediately available. British Columbia does not have a tradition of strong regional governance and the CRD as a regional authority is a creature of its independent-minded constituent municipalities.

In 1995 the British Columbia legislature passed a new planning law encouraging municipalities with increasing populations to prepare Regional Growth Strategies (BC, 1996). As means of coordinating municipal action on regional issues, the strategies would be powerful. The municipalities' Official Community Plans would have to comply with approved regional strategies, as would infrastructure financing and other agreements with the province. In addition, the strategies would facilitate pursuit of sustainability objectives. Mandatory strategy contents covered 14 goals, including reducing urban sprawl, protecting environmentally sensitive areas, providing affordable housing and decreasing pollution (BC, 1996: s.849(2)).

Development of the CRD growth strategy took seven years. The process followed conventional rational planning steps – information gathering, trend analysis, priorities identification, scenario comparisons, and final negotiation of the details of the preferred option. It was also consultative, encouraged public involvement at successive stages, and was underpinned by the province's sustainability-based growth strategy goals. While much of the initiative and direction came from municipal leaders and the regional planning staff, key roles were played by a public advisory committee and a diversity of residents and citizens' groups. A key early step was depiction and publication of the business-as-usual scenario: the overall built-out effect of continued growth following the municipal plans then in place. Strongly negative public reaction to this scenario set the stage for a more motivated examination of alternatives that would preserve desired qualities and promise a generally more desirable future (Boyle *et al.*, 2004).

Negotiating the details of the strategy, especially concerning matters related to the placement and firmness of the urban containment boundary and the particular locations for densification within the boundary, was particularly difficult. Years of discussion, mediation and compromise were needed before the CRD Regional Growth Strategy was finally approved and adopted as a regional by-law in 2003. The result has not ended growth tensions and is unlikely to deliver a model for urban regional sustainability. But the

sustainability-based CRD Strategy process and result represent a significant transition to a substantially different approach to urban growth, with important implications not just for planning policies and practice but also for associated infrastructure options, building design, services delivery, financing priorities, and a host of other particulars.

The Voisey's Bay mine and mill environmental assessment (1997–2002)

Voisey's Bay on the north coast of Labrador is in the intersecting traditional territories of the Aboriginal Innu and Inuit. It is also subject to the overlapping authority of the Canadian federal government and the provincial government of Newfoundland and Labrador. In 1997, despite or perhaps because of a history of conflict (Gibson, 2006; O'Faircheallaigh, 2006), these four jurisdictions agreed to establish a joint panel to guide and review the environmental assessment of a nickel mine and mill, plus an associated port and marine shipping, proposed by a subsidiary of Inco Ltd (Government of Newfoundland and Labrador *et al.*, 1997). As with other such panel-level environmental assessments of major undertakings in Canada, the process for the Voisey's Bay Panel involved issuing guidelines for the proponent's preparation of an Environmental Impact Statement, receiving and reviewing the general adequacy of the submission, holding public hearings to consider the proposed project, carrying out a final review in light of the evidence received, and preparing a report with recommendations to the relevant governments.

The five-member Panel's terms of reference were broad, incorporating attention to a comprehensive set of human and biophysical factors, welcoming traditional ecological knowledge, and recognizing cumulative effects, beneficial effects, and lasting effects on renewable resources (Government of Newfoundland and Labrador *et al.*, 1997). 'Sustainability' was not mentioned. The Panel, however, interpreted its mandate as effectively requiring consideration of 'the extent to which the Undertaking may make a positive overall contribution towards the attainment of ecological and community sustainability, both at the local and regional levels' with attention to the preservation of ecosystem integrity, the rights of future generations, and 'the attainment of durable and equitable social and economic benefits' (Voisey's Bay Panel, 1997, s.3.3). In doing so, the Panel became the first in Canada to adopt and impose an explicit 'contribution to sustainability' test in the review of the proposed undertaking.

Mining is a counter-intuitive subject for sustainability expectations. Orebodies are depletable resources and mines are typically associated with immediate gains and permanent damage rather than lasting foundations for wellbeing. The main Voisey's Bay orebody, 'the Ovoid', was exceptionally rich and conveniently close to tidewater, but it was small. The 20,000 tonnes/day mill proposed by Inco would have been able to exhaust the Ovoid in about

seven years. For the Panel, however, the key issue was whether and how the project could be undertaken so that it would leave a positive legacy. In particular the Panel was interested in how the project life could be extended to provide a longer stream of benefits and allow more time and opportunity to build capacities and options for viable livelihoods when the mine closed (Voisey's Bay Panel, 1999, s.2.3). After its initial review of the submitted environmental impact statement, the Panel required additional information on possible alternative rates of ore extraction. This concern rose again in the Panel's public hearings in ten Labrador communities and in the provincial capital, and were central in the Panel's recommendations.

In its final report, released in March 1999, the Panel concluded that the project should be authorized subject to terms and conditions that the Panel set out in 107 recommendations (Voisey's Bay Panel, 1999, s.18). The recommendations covered a wide range of social, economic and ecological matters, but focused chiefly on means of extending the lifetime of the project and ensuring a flow of opportunities and potentially lasting benefits to the Innu and Inuit communities of the region. The company initially resisted reducing the capacity of the mill to ensure a longer project life. In the end, however, Inco agreed to build a 6,000 tonnes/day mill, less than a third of the size of the one originally proposed, anticipating a project life of at least 30 years (Inco Limited, 2002).

The results probably fall short of ensuring durable livelihoods after the mining ends and the Panel's approach did not encompass many of the national- and global-scale sustainability issues surrounding mining (Green, 1998). The Panel's pioneering sustainability-based assessment did, however, lead to remarkable agreement among Aboriginal and government interests that had long histories of conflict (Gibson, 2006), and set a contribution to sustainability precedent to be followed by subsequent panels established in part under the *Canadian Environmental Assessment Act*.

Whites Point quarry and marine terminal environmental assessment (2004–2007)

Late in 2004, the province of Nova Scotia and the Canadian federal government agreed to appoint a three-member panel to review a proposal for a large basalt quarry and associated shipping facilities, which had stirred considerable local opposition. The site was at Whites Point on Digby Neck, a scenic peninsula on the Bay of Fundy.

The quarry proponents – Bilcon, a US company based in New Jersey – anticipated a 50-year project, with local employment benefits, associated income tax gains for governments, and progressive rehabilitation of the site. Critics feared adverse effects on tourism and fishing, additional stresses on endangered whales and other marine species due to the increased ship traffic, minimal economic benefits, loss of tranquility, and a permanently scarred landscape (Whites Point Panel, 2007, pp.27–85).

With a federal-provincial mandate similar to the one provided in the Voisey's Bay case, the Whites Point Panel issued assessment guidelines that incorporated a contribution to sustainability test, using language borrowed from the Voisey's Bay guidelines. After a lively round of local hearings, the Panel undertook an analysis focused on compliance with the Panel's guidelines, including their guiding principles. The Panel gave particular attention to project viability, community sustainability, and the nature and distribution of benefits and burdens (Whites Point Panel, 2007, pp.13-14, 86-100).

The Panel concluded that the project 'would not make a net contribution to sustainability', that the economic gains would accrue mostly to the proponent at the expense of long-term qualities and sustainable community economic development opportunities consistent with the core values of the community, and that the project should not be approved (Whites Point Panel, 2007, p.101). As well, the Panel addressed a set of strategic-level concerns arising from its inquiry, including the evident need for anticipatory coastal zone planning. The federal and provincial authorities agreed to reject the proposed project and to consider the broader recommendations (Government of Nova Scotia, 2007).

Kemess North copper-gold mine environmental assessment (2005-2007)

The Kemess North Joint Review Panel appointed by the federal government and the provincial government of British Columbia was the third formal assessment panel in Canada to receive and apply an explicitly sustainability-focused mandate. Like its Voisey's Bay predecessor, the Kemess North Panel reviewed a proposal for a mine with a short life expectancy (11 years of anticipated mine operation) and substantial Aboriginal interests at stake.

The Kemess North mine, in north central British Columbia, was proposed as an expansion of an existing mine (Kemess South), six kilometres away. The new mine would benefit from use of the existing mine's infrastructure and would extend mine employment (475 jobs) and other social and economic benefits. In addition, however, the project involved dumping several hundred million tonnes of acid-generating mine tailings and waste rock into a natural lake that is spiritually significant to local First Nations.

To weigh the pros and cons, the Panel adopted a sustainability assessment framework drawing from earlier documents prepared by the international mining sector and the provincial government (Kemess North Panel, 2007, pp.233-234). The framework applied five 'sustainability perspectives: environmental stewardship; economic benefits and costs; social and cultural benefits and costs; fairness in the distribution of benefits and costs; and present versus future generations' (Kemess North Panel, 2007, p.xi). In the final chapter of its report, the Panel considered the effects of the proposed project from each perspective (Kemess North Panel, 2007, pp.234-245).

The Panel concluded that 'the project in its present form would not be in the public interest' because the recognized economic and social benefits would be transient and 'outweighed by the risks of significant adverse environmental, social and culture effects, some of which may not emerge until many years after mining operations cease' (Kemess North Panel, 2007, p.245). Central among the long-term adverse effects concerns were loss of the valued natural lake and the legacy of tailings management obligations, perhaps lasting thousands of years, to prevent acidification and other damage to downstream waters.

The federal and provincial authorities accepted the Panel's recommendations and denied the proponent's application.

Mackenzie Gas Project environmental assessment (2004-2009)

In August 2004, 30 years after the Berger Inquiry began, federal, territorial and Aboriginal authorities jointly announced the appointment of a new, seven-member environmental assessment panel to review a resurrected Mackenzie gas gathering and pipeline project (CEAA, 2004; MVEIRB *et al.*, 2004). Building not only on Berger's work but also on the intervening decades of learning about regional-scale assessment, northern development, and applied sustainability, the Joint Review Panel for the Mackenzie Gas Project has provided Canada's most advanced example of assessment applying a contribution to sustainability test (Gibson, 2011).

The Mackenzie Panel addressed an exceptionally challenging version of project-based assessment. The project as filed by a hydrocarbon industry consortium was for a \$16.2 billion package involving development of three gas fields in the Mackenzie Delta area, associated gas gathering facilities, and a 1200km pipeline up the Mackenzie Valley. The significant impacts, however, would also include those of additional, induced developments. While the initial three gas fields were expected to deliver 0.83 billion cubic feet per day (Bcf/d) of gas, the pipeline was designed to carry 1.2 Bcf/d immediately and to accommodate 1.8 Bcf/d through the addition of more heater and compressor stations. Some scenarios presented to the Panel anticipated even higher gas throughput and accordingly greater cumulative impacts, positive and negative, from more gas field and related infrastructure development, more revenues, more opportunities, and more stresses on ecological, social and administrative capacities (Mackenzie Panel, 2009, chap.3). Effectively, the case was a strategic assessment in the guise of a project assessment review.

Unlike the earlier panels, the Mackenzie Panel did not create its own guidelines for the preparation of the environmental impact statement. Instead the guides were provided in the Panel's terms of reference from the three governments. Also for the first time, the government-established mandate explicitly established 'contribution to sustainability' along with respect for traditional knowledge, land claims and treaties, diversity and the precautionary

approach, as fundamental principles for the assessment (IGC *et al.*, 2004, p.4). Like the other panel cases, the subject was a non-renewable resource undertaking that could not itself be sustainable and could contribute to sustainability only through a positive legacy.

The Panel interpreted its mandate in a clear statement of its sustainability test (see the quote that begins this chapter) and established a detailed analytical framework based on 36 key issues in five core categories that were meant to cover the full suite of requirements for progress towards sustainability (Mackenzie Panel, 2009, esp. chaps 5 and 19):

- cumulative impacts on the biophysical environment
- cumulative impacts on the human environment
- equity impacts (fair distribution of benefits and risks)
- legacy and bridging impacts
- cumulative impacts management and preparedness (capacities for managing the risks and opportunities).

In a process involving initial assessment review, additional information from the proponents and commissioned studies, 115 days of public hearings in 26 communities, some delays for court rulings, and a lengthy period of analysis and writing, the Panel elaborated and applied this framework. In the last chapter of its 679-page final report, the Panel summarized its analysis, showing how it evaluated the impacts in each issue area for the null option (no project), for the project as filed, and for a range of further development and project expansion scenarios up to and beyond what would deliver 18.6 billion m³ per year of gas pipeline throughput (Mackenzie Panel, 2009, chap.19). As well, the Panel determined, in each case, what the impacts would be with and without effective implementation of the Panel's 176 recommendations, how the various impacts might interact, positively and negatively, and what trade-offs would remain.

The Panel's overall conclusion was that the project could make a positive contribution to sustainability in the Mackenzie Valley but only if the proponents and governments implemented all of the Panel's recommendations (Mackenzie Panel, 2009, pp.613–615). Of the recommendations, the most significant and demanding ones were directed to the governments. These centred on anticipation and management of cumulative effects, especially through guiding the pace and scale of development, and on use of the revenues and other opportunities provided by the exploitation of non-renewable resources to make a transition to 'a more diverse, flexible and lasting basis for livelihoods in the region' (Mackenzie Panel, 2009, p.602).

The receiving governments rejected key aspects of the Panel's advice, particularly those requiring interventions in economic development to manage cumulative effects (Canada and the Northwest Territories, 2010). But by the time the Panel reported, controversial but effective new technology for

exploiting shale gas deposits much closer to the main North American markets had led to sharply reduced natural gas prices, making the Mackenzie project economically unfeasible for the foreseeable future. Whether the project eventually proceeds and, if so, under what surrounding governance arrangements, remains to be seen.

Lessons and prospects

The language of sustainable development and sustainability did not become popular in Canadian policy pronouncements until the mid-1980s and had little effect on Canadian environmental assessment regimes until the 1990s. Despite some significant and illuminating applications, sustainability assessment is still not firmly entrenched in Canadian assessment law and practice. The most ambitious examples – cases involving formal assessment processes of some sort, with open public deliberations on major proposed undertakings, comparative evaluation of competing options, explicit attention to the interactions of effects on communities and biophysical systems, and special focus on long-term implications – began in Canada in the 1970s, but they have been special individual phenomena. Openings for these exceptional cases have been provided by the alignment of particular forces, typically including active public concern, multi-jurisdictional involvement, independent adjudicators (e.g. joint review panels), important new players and influences (e.g. recognition of Aboriginal rights, see Chapter 13), and/or widely recognized problems for which no established process seemed potentially adequate (e.g. regional growth management).

In this record and trajectory, sustainability assessment in Canada reflects a common path for innovations that challenge convention – needing to find openings where the prevailing formal and informal rules are weak, experimenting and learning from experience in different contexts, vulnerable to accusations of going too far, and likely to seem inefficient (if only because cutting a new trail is slower than following a well-trod one).

Arguably all seven of the Canadian cases surveyed here were successes and failures. The initial three were trail-blazing initiatives that combined significant achievements with the practical difficulties that typically face pioneers. The Berger inquiry set an international standard for fair, thorough, and ambitious public review. It raised public awareness of different perspectives on 'development' and it played a major role in winning serious attention to Aboriginal land claims. But it also persuaded Canadian governments never again to appoint a single, capable, independent-minded jurist to run a major assessment review. The Ontario timber management assessment helped overcome longstanding barriers to more farsighted, multi-stakeholder and multi-purpose approaches to forest management, but even those whose arguments prevailed found the process insufferable. The CRD's growth manage-

ment strategy effort brought a new and much more promising approach to urban planning, but it too was slow work, and vulnerable to piecemeal weakening.

The four joint panel review cases were admirably successful in gradually raising the bar of demonstrated possibility and proper expectation in sustainability assessment; however, these gains have not yet been entrenched in conventional practice. Perhaps the panels' greatest accomplishments have been in developing more rigorous and defensible approaches to analysis, addressing cumulative effects and other strategic issues and strengthening attention to legacy effects. Most of the panels also reached conclusions that the relevant governments were willing to accept. But some of these same authorities, including the federal government, have been weakening environmental assessment law in the name of 'streamlining' decision making and have shown no inclination to entrench the contribution to sustainability test more firmly in the law. As a result, strong, sustainability-based assessments remain mostly limited to the exceptional big cases that go to panel review. Most formal assessment practice is still focused on mitigation. And despite the demonstrated strategic-level strengths of the sustainability assessments reviewed here, there is little sign yet of government inclination to extend requirements for open, sustainability-based assessment to the world of plans, programmes, and policies.

In summary, Canadian sustainability assessments have had a mixed record, considered in the light of the six effectiveness categories presented in Chapter 8. While there have been notable advances in applying the core principles, building analytical rigour, achieving substantive gains and learning from experience, progress has been far from smooth and the needed consistency of commitment, clarity of process, and efficiency of application are far from established.

The future is, as usual, uncertain. While the horizon includes a wide variety of attractive possibilities for further case applications of sustainability in Canada, there is no guarantee that an update of this chapter in five years' time will find many more completed examples to discuss, at least among the big initiatives that have been the focus here. Smaller scale, implicitly sustainability-based assessment activities of the sort noted at the beginning of this chapter, continue to proliferate widely. In the long run, as global and regional unsustainability effects become more pressing, demands for more rigorous and effective sustainability assessments at all scales, and in both formal and informal processes, are likely to increase. In the meantime, the eclectic set of Canadian sustainability-based assessments so far provides a promising foundation for further advances. Recognizing that no single process represents Canadian practice, Table 11.1 presents some general conclusions about Canadian practice based on the evaluation criteria set out in Chapter 8 of this book.

Table 11.1 Summary notes on the effectiveness of sustainability assessment in Canada

Framework criterion	Questions asked	Canadian perspective
Procedural effectiveness	<i>Have appropriate processes been followed that reflect institutional and professional standards and procedures?</i>	Practice varies widely. Some particular assessments have been exemplary in covering all steps and pushing the boundaries. Most regimes cover the basic procedural steps, but are weak in some key areas. Strategic-level assessments are typically ad hoc or done in a low-credibility policy-based process. Adequate monitoring is rare.
Substantive effectiveness	<i>In what ways, and to what extent, does sustainability assessment lead to changes in process, actions, or outcomes?</i>	Where applied, sustainability assessment has set a much higher test (positive contribution to sustainability rather than mitigation of adverse effects), has led to rejection of some major projects, and has had substantial effects on the nature of approved undertakings. Unfortunately, conventional practice in most jurisdictions addresses only a portion of the sustainability agenda.
Transactive effectiveness	<i>To what extent, and by whom, is the outcome of conducting sustainability assessment considered to be worth the time and cost involved?</i>	Some applications have been very lengthy, in part due to the role they have played in sectoral transitions that are rarely quick and tidy, and due to the use of big project assessments to address major strategic issues. Significantly greater efficiencies may depend on the introduction of linked strategic and project-level assessments.
Normative effectiveness	<i>In what ways, and to what extent, does the sustainability assessment satisfy the listed normative imperatives?</i>	The most advanced assessments adopt comprehensive sustainability-based criteria and specify them for the case and context, with consideration of interactive effects and trade-offs. This remains rare, however.
Pluralism	<i>How, and to what extent, are affected and concerned parties accommodated into and satisfied by the sustainability assessment process?</i>	Stakeholder engagement is generally well established in Canadian assessment processes, sometimes with intervenor funding. Major sustainability-based processes with public hearings are considerably more participative than the much more common smaller scale, mitigation-centred processes.
Knowledge and learning	<i>How, and to what extent, does the sustainability assessment process facilitate instrumental and conceptual learning?</i>	Sustainability assessments open a larger agenda, particularly concerning socio-economic/ecological interactions, long term/legacy effects, and broader alternatives. This facilitates more open public deliberation on desirable futures and how best to reach them. Participant learning about substantive issues and means of exerting influence has been evident. Institutional learning has been slowed by resistance to assessment results that challenge conventional assumptions and practices.

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