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In Search of "Compass and Gyroscope": Where Were Adaptive Management and Principled Negotiation in Nova Scotia's Forest-Strategy Process?

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In his landmark 1993 book entitled Compass and Gyroscope: Integrating Science and Politics for the Environment, *Kai Lee outlined the need for stronger processes in support of sustainable development. The science of adaptive management and the politics of principled negotiation were offered as the most promising approaches. The author uses these concepts to evaluate the process used to develop Nova Scotia's natural resources strategies of August 2011, specifically the forest strategy following the* Environmental Goals and Sustainable Prosperity Act. *The findings show that, by comparison with similar policy-development processes used elsewhere in Canada, the Nova Scotia process lacked both foresight (drawing on adaptive management) and stakeholder consensus (drawing on principled negotiation). The author advocates for stronger analytical and political strategic processes in future policy development in the province.*

Dans son important ouvrage de 1993 intitulé « Compass and Gyroscope: Integrating Science and Politics for the Environment » (Boussole et gyroscope : intégrer la science et la politique pour l'environnement), Kai Lee affirme qu'il est nécessaire de mettre en place un processus solide à l'appui du développement durable. Il avance que la science de la gestion adaptative et la politique des négociations axées sur la collaboration sont les méthodes les plus prometteuses. L'auteur se fonde sur ces concepts pour évaluer le processus utilisé dans l'élaboration des stratégies de la Nouvelle-Écosse en matière de ressources naturelles adoptées en août 2011, plus précisément la stratégie concernant les forêts en vertu de la Environmental Goals and Sustainable Prosperity Act *(loi sur les objectifs environnementaux et la prospérité durable). Les conclusions montrent que, comparativement à divers processus d'élaboration de politiques utilisés ailleurs au Canada, le processus suivi en Nouvelle-Écosse péchait contre le principe de précaution (gestion adaptative) et sur le plan du consensus entre les parties prenantes (négociations axées sur la collaboration). L'auteur préconise qu'à l'avenir, la province utilise des processus stratégiques analytiques et politiques plus forts pour élaborer ses politiques.*

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Introduction

Contemporary resource and environmental policy development by democratic governments is usually characterized by a participatory process for citizens and organizational stakeholders.[1] Design and scope of such processes depends on a host of factors such as the nature of the policy to be developed, urgency of the policy need, orientation and style of the government convening the process, and expectations and customs of those to be consulted. Levels of participation, ranging from no participation at all, through tokenistic input, to stakeholder partnerships and full citizen control, have been described in the literature since the 1960s.[2] Much guidance is available to help policy-developers design and

1. PV Ellefson, *Forest Resources Policy: Process, Participants, and Programs* (New York: McGraw-Hill, 1992); and FW Cubbage, J O'Laughlin & CS Bullock III, *Forest Resource Policy* (New York: John Wiley & Sons, 1993).
2. See, e.g., SR Arnstein, "A ladder of citizen participation" (1969) 35 Journal of the American Institute of Planners 216.

implement strong processes, especially in relation to natural resources and the environment.[3]

In Nova Scotia, the *Environmental Goals and Sustainable Prosperity Act* was enacted in 2007.[4] Among its twenty-one goals was the following commitment: "(u) the Province will adopt strategies to ensure the sustainability of the Province's natural capital in the areas of forestry, mining, parks and biodiversity by the year 2010." The strategy development pursuant to this goal included more than three years of participatory process, culminating with the publication of *The Path We Share: A Natural Resources Strategy for Nova Scotia, 2011-2020*.[5] The strategy document addresses the four areas named in the *Act*: forestry, mining, parks, and biodiversity.

In this paper, the account and analysis focuses on forestry to evaluate the degree to which the Nova Scotia forest-strategy process measured up to best practice for development of natural resources policies. The linked concepts of adaptive management and principled negotiation, as described by Lee,[6] are used to characterize a strong policy-development process. The author contends that the strategy-development process in Nova Scotia lacked significant elements of best practice in relation to the style and quality of both the analytical and participatory processes used. The paper begins with a summary account of what happened during the strategy-development process, based on the direct experience of the author and from public documents. The paper then outlines some fundamentals of effective policy process as offered by Lee and exemplified by experiences elsewhere (New Brunswick and Ontario). Finally, the author highlights where the Nova Scotia strategy-development process could have been stronger.

3. See, e.g., PJ Johnson & PN Duinker, *Beyond Dispute: Collaborative Approaches to Resolving Natural Resources and Environmental Conflicts* (Thunder Bay: School of Forestry, Lakehead University, 1993); Ellefson, *supra* note 1; Cubbage, O'Laughlin & Bullock, *supra* note 1; GN Cormick et al, *Building Consensus for a Sustainable Future: Putting Principles into Practice* (Ottawa: National Round Table on the Environment and the Economy, 1996); and TM Beckley, JR Parkins & SRJ Sheppard, *Public Participation in Sustainable Forest Management: A Reference Guide* (Edmonton: Sustainable Forest Management Network, University of Alberta, 2006).

4. *Environmental Goals and Sustainable Prosperity Act*, SNS 2007, c 7 [*EGSPA*].

5. (Nova Scotia: Nova Scotia Department of Natural Resources, 2011) [*The Path We Share*].

6. KN Lee, *Compass and Gyroscope: Integrating Science and Politics for the Environment* (Washington, DC: Island Press, 1993).

I. *The Nova Scotia natural resources strategy of 2011: process, participants, products*

The Government of Nova Scotia published a forest policy in 1986 and replaced it, in practice, with an unpublished strategy in the late 1990s.[7] With the new millennium, it was high time for policy refreshment given the forest-sector transformations taking place in the province and across the country. Preliminary discussions about a process to renew the forest strategy revolved around a design for two parallel conversation tables: one on economic dimensions and one on environmental and social dimensions. Concerns over the proposed process, leadership, and membership, raised by environmental advocates to the Minister, led to abandonment of that plan and the creation of a much larger process to renew strategies for minerals, biodiversity (formerly wildlife), provincial parks, and forests.

The consequent strategy-development process was designed in three phases: (a) Phase I, a broad public consultation to get a sense of citizen priorities and issues (implemented 2008-2009); (b) Phase II, a narrower consultation involving expert panels and engagement of invited stakeholders (implemented 2009-2010); and (c) Phase III, an inside-government development of the final strategic directions (implemented 2010-2011).[8] Phase III of the process was limited to government staff and not publicly documented.

Voluntary Planning (VP), a long-standing arm's-length public-engagement agency of the Government of Nova Scotia, was tasked with implementing Phase I of the strategy development. VP struck a seven-person Natural Resources Citizen Engagement Committee to commence the consultations. Its stated objectives were to listen to Nova Scotians' visions and values associated with natural resources and to gather those visions and values to share with the government.[9] Twenty-seven community meetings were conducted across the province, three workshops conducted, and some six hundred submissions received. The final report, entitled *Our Common Ground: The Future of Nova Scotia's Natural Resources*,[10] identified five key values associated with management of Nova Scotia's natural resources:

7. *Forestry—A New Policy for Nova Scotia* (Halifax: Department of Lands and Forests, 1986).
8. *The Path We Share*, *supra* note 5.
9. Natural Resources Citizen Engagement Committee, *The Future of Nova Scotia's Natural Resources: What We Heard* (Halifax: Voluntary Planning, 2008).
10. Natural Resources Citizen Engagement Committee, *Our Common Ground: The Future of Nova Scotia's Natural Resources* (Halifax: Voluntary Planning, 2009).

> Sustainability. Nova Scotians want a natural resources strategy that can provide for them today without negatively affecting the culture, society, environment, and economy of generations to come. They want more jobs in rural areas, jobs based on sound ecological principles.
>
> Diversity. Nova Scotians believe diversity is an essential element of a resilient economy, a vibrant ecology, thriving communities, and a healthy way of life.
>
> Collaboration. Nova Scotians want the Department of Natural Resources to play a leadership role in bringing together the different views about natural resource management. They also want to continue to be part of the decision making process.
>
> Transparency. Nova Scotians value an open, clear, and easily understood decision making process. They want to know the rationale behind decisions.
>
> Informed decision making. Nova Scotians want the Department of Natural Resources to use the best available information pertaining to science, economics, citizen values, and community and traditional knowledge when making resource-management decisions. They also want to be kept informed so that they can better contribute to the decision making process.[11]

Phase II was led by a steering panel composed of three high-profile citizens of the province: Constance Glube, retired provincial chief justice; Joe Marshall, of the Union of Nova Scotia Indians; and Allan Shaw, chair of the Shaw Group of companies. Each of the four strategic theme areas—forests, parks, biodiversity, minerals—was to have its own expert panel that would feed recommendations to the steering panel. The Department of Natural Resources widely advertised the opportunity for forest experts to self-nominate for one of three positions on a Phase-II expert panel. The expert panel on forests included: Bob Bancroft, retired provincial-government biologist; Donna Crossland, ecologist with Parks Canada; and Jonathan Porter, industrial woodlands manager with Bowater Mersey Paper Company.

Over a period of a few months late in 2009 and early in 2010, the panel called a series of experts to share their views on a range of high-profile issues.[12] The panel's two reports to the Steering Committee were released in May 2010—one written by Bancroft and Crossland and the other by

11. *The Path We Share*, *supra* note 5, Appendix A.

12. The process used by the panel to develop the consequent recommendations was not made public, and therefore cannot be the subject of comment.

Porter.[13] It was clear that the panel could not reach consensus on the topics, tone, and direction of its policy recommendations. Equally surprising was that each report contained a large number of recommendations (113 in the Bancroft-Crossland report, 62 in the Porter report), ranging in target topic from the ultra-strategic (e.g., province-wide forest research funding and programming) to the ultra-tactical (e.g., including carbon budgets in forest modelling and maintaining the Woodlot Owner of the Year program). There was, however, neither strategic insight—in the sense of higher-order direction-setting—nor consensus among the panellists.

The disagreement between the two sets of recommendations from Phase II was sufficiently disconcerting to the Forest Products Association of Nova Scotia that it commissioned an independent peer review of the two forest-panel reports. Robert Wagner of the University of Maine completed that review. Wagner harshly criticized both the strategy process and the panel reports. In a particularly telling passage he stated:

> After reviewing the documents making up Nova Scotia's Natural Resources Strategy related to forests and forestry, however, I was largely dismayed at the process for making such crucial recommendations about the future management of Nova Scotia's forests. It was difficult to not come to the conclusion that *forest management strategic policy making and planning in Nova Scotia are broken!* Most troubling was that no evidence was offered by the Expert Panel or the Steering Panel that a critical analysis of the likely impacts of any of their recommendations was conducted as part of the Phase II analysis. Many of these recommendations are likely to have profound impacts on the future composition and structure of private and public forests in the province that will have significant effects on wood supplies, the forest-based economy, land use, wildlife habitat, and a wide range of other ecological considerations over many decades.[14]

Phase II was capped with the Steering Panel's report,[15] which addressed strategic priorities on leadership, citizen and stakeholder engagement, legislative renewal and compliance improvement, research capacity and knowledge sharing, education, and collaboration. Also

13. B Bancroft & D Crossland, *Restoring the Health of Nova Scotia's Forests: A Panel of Expertise Report on Forests to the Steering Panel* (Halifax: Department of Natural Resources, 2010); and, J Porter, *The Roots of Sustainable Prosperity in Nova Scotia: An Expert Panel Report on Forests to the Steering Panel* (Halifax: Department of Natural Resources, 2010).

14. RG Wagner, *Review of Reports and Recommendations Relating to Forests/Forestry as Part of Phase II of Nova Scotia's Natural Resources Strategy Development Process* (Truro, NS: Forest Products Association of Nova Scotia, 2010) [emphasis in original].

15. CR Glube, J Marshall & A Shaw, *Report of the Steering Panel, Phase II Natural Resources Strategy* (Halifax: Department of Natural Resources, 2010) online: <http://www.gov.ns.ca/natr/strategy/pdf/phase2-reports/Steering%20Panel_FINAL.pdf> [*Report Phase II*].

included were one or more pages specifically about each of the four strategy areas covered. Interestingly, while the Steering Panel presented recommendations on minerals, parks, and biodiversity directly from the respective expert panels, it developed its own recommendations for forests. These recommendations, ten in all, addressed integrated resource management, the *Code of Forest Practice*,[16] regulation of specific forest-management tools, best management practices, and biomass for electricity generation. The recommendations included neither explanatory statements (essential for justification), nor details on implementation. Also, they were not strategic, hitting individual volatile public issues rather than outlining overall directions for the resource and the forest sector. Exemplifying these traits were the recommendations associated with regulation of forest practices that suggested the province:

- Require management plans prior to cutting on all public and private lands.
- Allow clear-cutting by permit only.
- Allow use of pesticides and herbicides by permit only.
- Stop whole-tree harvesting as a forestry practice, except for Christmas tree farms.[17]

II. *Framework for evaluating policy-development processes*

In his seminal work, *Compass and Gyroscope: Integrating Science and Politics for the Environment*, Kai Lee provides a most elegant and persuasive framework for the pursuit of sustainable development.[18] Science and politics are welded together to provide the tools necessary to see and choose promising paths for resource and environmental management and policy. The essence of Lee's compass, the science of adaptive management, is well illustrated with an example from New Brunswick. The foundation of Lee's gyroscope, the politics of principled or bounded negotiation and civic engagement, is demonstrated with an example from Ontario. Two process vignettes covering experiences in these two provinces (New Brunswick and Ontario) evidence both technical and participatory strengths.

16. Nova Scotia, *Code of Forest Practice: A Framework for the Implementation of Sustainable Forest Management* (2012) online: <http://gov.ns.ca/natr/forestry/>.
17. *Report Phase II, supra* note 15 at 23.
18. Lee, *supra* note 6.

1. *Technical elements: New Brunswick's Task Force on Forest Diversity and Wood Supply*

a. *Adaptive management*

Adaptive management was heralded in the late 1970s as a promising approach to reduce uncertainty in the management of large resource and environmental systems.[19] Walters and Lee added further explanation and encouragement to the approach[20] and agencies across the USA[21] and Canada[22] have since espoused the approach within their mandates. Experience shows both successful applications[23] and less-than-successful attempts to adopt the adaptive management approach.[24]

To date, there remain proponents[25] and management systems[26] espousing the virtues of adaptive management. At the heart of adaptive management is a cycle including: (a) formal prediction of expected resource outcomes under alternative management regimes,[27] (b) rigorous monitoring of environmental conditions once a strategy is chosen and implemented,[28] and (c) explicit comparisons of expectations and realities to uncover errors and design appropriate further investigation and interventions.[29] Rarely is the cycle fully completed. In the predictive phase, analysts are often reluctant to commit, preferring qualitative—and therefore usually untestable—statements about future expectations.[30]

19. CS Holling, ed, *Adaptive Environmental Assessment and Management* (Toronto: John Wiley & Sons, 1978).
20. CJ Walters, *Adaptive Management of Renewable Resources* (New York: Macmillan Publishing, 1986); and Lee, *supra* note 6.
21. See, e.g., GH Stankey & B Shindler, *Adaptive Management Areas: Achieving the Promise, Avoiding the Peril—USDA Forest Service General Technical Report PNW-GTR-394* (Portland, OR: Pacific Northwest Research Station, 1997).
22. See, e.g., B Taylor, L Kremsater & R Ellis, *Adaptive Management of Forests in British Columbia* (Victoria: British Columbia Ministry of Forests, 1997).
23. See, e.g., Holling, *supra* note 19; and Lee, *supra* note 6.
24. RJ McClain & RG Lee, *Adaptive management: promises and pitfalls* (1996) 20 Environmental Management 437; and GH Stankey et al, "Adaptive Management and the Northwest Forest Plan" (2003) 191:1 Journal of Forestry 40.
25. See, e.g., PN Duinker & LM Trevisan, "Adaptive management: progress and prospects for Canadian forests" in V Adamowicz et al, eds, *Towards Sustainable Management of the Boreal Forest: Emulating Nature, Minimizing Impacts and Supporting Communities* (Ottawa: National Research Council Press, 2003) 857.
26. See, e.g., Canadian Standards Association, *Sustainable Forest Management—CAN/CSA-Z809-08* (Mississauga: CSA, 2009).
27. PN Duinker & GL Baskerville, "A systematic approach to forecasting in environmental impact assessment" (1986) 23 Journal of Environmental Management 271.
28. PN Duinker, "Ecological effects monitoring in environmental impact assessment: what can it accomplish?" (1989) 13 Environmental Management 797.
29. Duinker & Trevisan, *supra* note 25.
30. GE Beanlands & PN Duinker, "An ecological framework for environmental impact assessment" (1984) 18 Journal of Environmental Management 267.

This is tragic, given that monitoring systems cannot be designed with confidence without explicit hypotheses that drive consideration of the nature and strength of data-collection efforts.

Prediction in this context does not mean making one forecast and adopting it as the only expected outcome. Rather, it means making contingent statements about expected outcomes given specific decisions on action sets and the relationships among system components. When resource systems are amenable to quantitative description and there are some reasonably firm ideas about how they might respond to alternative action sets, it behoves us to model those responses to check whether specific policies might lead to desirable outcomes. The objective of foresight is decision-option insight.

b. *Example: New Brunswick*

The New Brunswick Task Force on Forest Diversity and Wood Supply described a helpful example of foresight in policy development in its report entitled *Management Alternatives for New Brunswick's Public Forest*.[31] Thom Erdle of the University of New Brunswick chaired the task force and led the group of nine New Brunswick citizens through a technical process that resulted in a series of long-term forecasts for nineteen indicators in response to potential adoption of eight alternative management strategies. The objective of the exercise was "to develop a set of realistic and practical forest management alternatives that would encompass a broad range of ways by which to manage New Brunswick's public forest."[32]

Those alternatives were to:

- generate increasing yields of a wider variety of commercial tree species and products to provide a diverse raw material base enabling wood-based forest industries to capitalize on current and future market opportunities;
- maintain the diversity and important ecological features of New Brunswick's Acadian Forest so that timber management practices do not simplify the forest through excessive reductions in species diversity and the abundance of old and biologically complex forest conditions characteristic of the natural Acadian Forest; and
- be characterized in terms of their probable environmental, social, and economic consequences to allow a reasonably full evaluation of their relative performance.

31. New Brunswick Task Force on Forest Diversity and Wood Supply, *Management Alternatives for New Brunswick's Public Forest* (Fredericton: New Brunswick, 2008) online: New Brunswick <http://www.gnb.ca/cnb/promos/forest/pdf/ErdleReport-e.pdf>.

32. *Ibid* at 2.

> The task force was not asked to make recommendations about how to manage the forest, but rather to inform the decision-making process by identifying and characterizing workable forest management alternatives.[33]

This is an excellent example of the technical analysis that should underlie forest-policy development. It provides the necessary technical insight to assess potential long-term consequences of strategic forest-management alternatives for New Brunswick's Crown land. If observers disagree with the results, the onus is on them to offer up their own forecasts. If observers accept the results as a plausible representation of long-term outcomes, then there is a firm basis for debating respective values and the relative desirability of the alternative outcomes. The New Brunswick exercise delivered the decision-option insight required by the project convenors.

2. *Political Elements: Ontario's Forest Policy Panel*

a. *Principled negotiation*

Lee espoused the process of principled negotiation as the appropriate way to address conflict among natural-resource stakeholders and interests.[34] Principled negotiation has been used for many decades in settings such as management-labour disputes, and became increasingly used in many forms and forums related to environment and natural resources beginning in the late 1970s.[35] Spurred primarily by the publication of *Our Common Future* there has been a proliferation of manuals and guides on principled negotiation.[36]

Negotiation processes for resources and the environment are premised on the notion that command-and-control decision-making is largely inappropriate in contemporary society for matters of public policy; a strict diet of representative democracy is similarly inappropriate for such issues. Participatory democracy, where a variety of interests can participate fully in the decision-making processes, is what Canadians generally expect. Voting processes wherein the majority rules frequently leave many parties feeling disenfranchised, whereas in negotiation all parties usually commit

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33. *Ibid* at 2.
34. Lee, *supra* note 6.
35. GW Cormick, "Theory and practice of environmental mediation" (1980) 2 Environmental Professional 24; and Johnson & Duinker, *supra* note 3.
36. World Commission on Environment and Development, *Our Common Future* (New York: Oxford University Press, 1987). Also see, for example, Commission on Resources and Environment. "Dispute Resolution" in *Provincial Land Use Strategy,* vol 4 (Victoria: British Columbia, 1995); J Hansen, *Table Manners for Round Tables*, 5th ed (Summerland, BC: The Green Group, 1995); and Cormick et al, *supra* note 3. Other guidance materials abound: see, e.g., TJ Sullivan, *Resolving Development Disputes through Negotiation* (New York: Plenum Press, 1984); and LJ Spencer, *Winning Through Participation* (Dubuque, IA: Kendall/Hunt Publishing Company, 1989).

to support outcomes even if their full suite of hopes and demands is not met. Decision processes in Canada's model forests are prime examples of the positive attributes of negotiation.[37]

Participatory decision-making processes have progressed beyond input on outcomes alone. While stakeholders are frequently satisfied with the knowledge that their voices have been heard and their opinions considered by decision-makers, with increasing frequency they want more than just this level of participation.[38] Contemporary process convenors find themselves not only engaging interested parties more often and with greater intensity, but also note that those parties want to influence the very design of the engagement process. Partnership arrangements, where parties with legal authority to make decisions are willing to share the shaping of those decisions with other parties, are increasingly abundant in relation to Canada's resources and the environment.[39] Negotiated solutions seem to have more endurance than administered solutions[40] and stakeholders seem more insistent regarding their involvement in negotiation processes.

b. *Example: Ontario*

One can readily argue for solution-seeking in resource and environmental problem-solving based on inclusive, consensus-seeking deliberations. When, however, the stakeholder set is vast, (e.g., the entire citizenry of a province) the process can rarely be all-inclusive. Such was the situation faced by the Ontario Forest Policy Panel, commissioned by the Minister of Natural Resources to work with the people of the province in developing a comprehensive forest-policy framework.[41] The Panel designed and facilitated its own consultation process, with numerous layers of idea generation and review. The program included a wide variety of means of engagement, including newsletters, press releases, a tabloid discussion paper, one-on-one stakeholder meetings, an invitation for submissions or phone calls, peer workshops, agency workshops, community workshops, special events (e.g., a sub-sector hearing), an inter-ministry coordinating committee, and review of a draft report. More than three thousand people participated in various process opportunities. In response to the Panel's

37. L LaPierre, "Canada's Model Forest Program" (2002) 78 Forestry Chronicle 613.

38. Johnson & Duinker, *supra* note 3; and PN Duinker, "Public participation's promising progress: advances in forest decision-making in Canada" (1998) 77:2 Commonwealth Forestry Review 107.

39. *Ibid.*

40. JM Wondolleck, *Public Lands Conflict and Resolution: Managing National Forest Disputes* (New York: Plenum Press, 1988); and JE Crowfoot & JM Wondolleck, eds, *Environmental Disputes: Community Involvement in Conflict Resolution* (Washington, DC: Island Press, 1990).

41. Ontario Forest Policy Panel, *Diversity: Forests, Peoples, Communities—Report of the Ontario Forest Policy Panel* (Toronto: Ministry of Natural Resources, 1993).

work, the Government of Ontario published its *Policy Framework for Sustainable Forests*, much of which was drawn directly from the Panel's final report.[42]

Particularly successful were the Panel's community consultations, including the more than twenty-five workshops with both ministry staff and local citizens. The panellists designed each workshop to attempt group consensus on specific themes, outcomes of which would then be used to launch discussions at subsequent workshops. In essence, each workshop was designed not only as an independent problem-solving exercise but also as an interdependent link in a yearlong process of strategy-building.

3. *Process examples combining incisive technical analysis with principled negotiation*

There are numerous examples of policy-development processes in Canada and abroad that have combined strong technical analysis with a strong participatory process. Two examples are worthy of description.[43]

The Wabakimi Park Boundary Committee was established by the Ontario Ministry of Natural Resources in 1992 to develop, through consensus, a recommendation for a new boundary for the wilderness park. The sixteen members engaged in a negotiations process with technical analysis based on evaluation of the costs and benefits of alternative park configurations on eleven key indicators. To support the evaluation, the landscape was delineated into approximately sixty small watersheds that could be analyzed independently against the indicators.[44] The landscape analysis was pivotal, allowing committee members to understand their opportunities and trade-offs under a range of boundary alternatives. While the Committee did not reach full consensus after two and a half years of deliberations, in hindsight members agreed that the process of seeking consensus was essential in reaching a useful outcome. The Government of Ontario expanded the park in 1997 from 155,000 ha to almost 890,000 ha.[45]

The second example, *EGSPA,* committed the Government of Nova Scotia to increasing the province's protected-areas system to 12% of the

42. Ontario, *Policy Framework for Sustainable Forests* (Sault Ste Marie: Ministry of Natural Resources, 1994); and Ontario Forest Policy Panel, *supra* note 41.

43. I served as a process facilitator and technical advisor in both these processes.

44. PN Duinker et al, "Using caribou knowledge in expanding the Wabakimi protected area" (1998) 10 Rangifer Special Issue 183.

45. Ontario Parks, *Wabakimi & Kopka River* (Ontario: Ministry of Natural Resources, 2003). online: Ontario Legislative Assembly <http://www.ontla.on.ca/library/repository/mon/8000/243645.pdf> at 1.

landbase by 2015.[46] The 12% goal was well entrenched across Canada even in the late twentieth century and conservationists in Nova Scotia had been working on this agenda for many years. Frustrated by a lack of progress early in the twenty-first century, protected-areas stakeholders, with encouragement from ardent conservationist Colin Stewart, agreed to move forward collectively. The Colin Stewart Forest Forum (Forum) represented a negotiation table populated by environmental, industrial, and government interests dedicated to charting a consensus-based path toward completion of Nova Scotia's protected-areas network. A memorandum of understanding among the parties set the broad parameters of engagement, and ground rules were established. Over a period of almost five years, the parties undertook detailed negotiations and technical investigations on protection priorities and wood-supply mitigation opportunities. The Forum filed its report with the Government of Nova Scotia in November 2009,[47] and the Government is implementing further protection measures, according to its *EGSPA* commitment, based largely on the group's work.[48]

III. *Evaluation of the Nova Scotia process to develop the forest strategy of 2011*[49]

1. *Technical elements*

Policy actions have consequences. If those consequences are amenable to quantification, they can usually be forecast using reasonably sophisticated forest-modelling tools, similar to those used by the New Brunswick Task Force on Forest Diversity and Wood Supply.[50] When consequences are difficult to quantify—or are simply not quantitative—qualitative scenario techniques can be used instead. What is essential, whether formal modelling is conducted or not, is for policy analysts (and indeed all policy proponents) to engage in some form of formal impact assessment. Insight on the potential consequences of alternative policy options is essential. Without impact analysis, choice among policy alternatives becomes merely an exercise of determining who has the strongest arm.

At least two modelling initiatives dedicated to shedding light on specific elements of forest strategy were undertaken in Nova Scotia. One was designed to elucidate the potential wood-supply ramifications of reducing

46. *EGSPA*, *supra* note 4, s 4(2)(a).
47. Colin Stewart Forest Forum Steering Committee, *Colin Stewart Forest Forum: Final Report* (Stewiacke, NS: Nova Forest Alliance, 2009).
48. PN Duinker, K DeGooyer & C Miller, *The Colin Stewart Forest Forum: an innovative approach to protected areas planning in Nova Scotia* (2012) [submitted to Conservation and Society].
49. *The Path We Share*, *supra* note 5.
50. *Supra* note 31.

the practice of clear-cutting in Nova Scotia.[51] The second investigated the wood-supply implications of alternative rates of participation of woodlot owners in the timber market.[52] Additionally, Woodbridge Associates undertook an economic impact analysis of timber management and supply changes on the province's forest-products industry.[53]

Such works, although insightful in their own right, hardly constitute any kind of comprehensive analysis of the consequences of implementing a package of reforms in Nova Scotia's forest strategy. Perhaps far more impact analysis was done as part of the confidential Phase III work. If so, plaudits to the government. Such analyses should, however, be participatory in the sense that non-state actors should have access to the construction, implementation, and results of analytical work. This was certainly not the case for Nova Scotia's forest strategy.

2. *Political elements*

In this author's experience, consensus processes are more effective than, and at least as efficient as, other kinds of decision-making processes. When consulted early on by Nova Scotia's Natural Resources Public Consultation Committee about process design, the author urged the Committee to implement a consensus-seeking process based on problem-solving workshops. That approach was not adopted. Instead, the Committee simply "heard from the people" in the age-old fashion of listening as one speaker or writer after another shared their personal concerns. It may be possible to identify some common ground among numerous individual contributors, but the approach is not consensus-based. The only consensus achieved at this level was among Committee members (of course, that in itself may well be a great achievement).

Hearing from the public in this manner is not a "bad thing" per se. Arguably, it should be seen as a necessary but insufficient element of an overall consultative process. Considering the complexity of natural-resource and environmental problems, gauging the public pulse through written and oral presentations generates rather shallow information on public sentiment and preferences and cannot be expected to deliver robust and innovative solutions. To achieve the latter end, consensus-seeking problem-solving exercises are needed.

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51. Department of Natural Resources, *Woodbridge Wood Supply Scenarios: Clearcut Harvest Policy Analysis* (Halifax: Nova Scotia, 2011).

52. Department of Natural Resources, *Non-Industrial Private Non-Participation Scenarios: Crown Lands Forest Model Online Reporting & Statistics for Potential Wood Supply* (Halifax: Nova Scotia, 2011).

53. Woodbridge Associates, *Economic Impact Analysis of Timber Management & Supply Changes on Nova Scotia's Forest Industry* (Halifax: Department of Natural Resources, Nova Scotia, 2011).

Phase II of the forest-strategy process clearly did not achieve consensus even among the three people on the panel, as evidenced by the production of majority and minority reports. It is unknown to those of us outside government whether any consensus was achieved among staff who contributed to the formation of the final strategy. Because government departments, and indeed majority-holding governments themselves, can operate on an authoritarian basis, the degree of internal consensus could rest anywhere along the spectrum of agreement. The natural resources strategy is in essence a government-issued policy decree that clearly anticipates the provincial governance system to uphold and implement it.

Given the demonstrated power of consensus-seeking processes to deliver enduring solutions to resource and environmental problems, one can continue to question why such processes were not implemented for the forest strategy of Nova Scotia. As noted, consensus-seeking processes may frequently take more time and resources than initially planned, but that must always take a back seat to effectiveness where parties at conflict are brought to a constructive peace. Consensus also results in all-party commitment to implementation of the ultimate agreement; neither occurred with the Nova Scotia forest strategy.

Conclusion

The Nova Scotia process to develop a new forest strategy failed on two counts: (a) it was not supported by a comprehensive examination of future potential states of key forest values (represented by some set of criteria and indicators) under alternative forest-policy directions; and, (b) it did not reach any meaningful consensus among forest-sector stakeholders to establish policy directions. That said, the strategy, in its implementation, might not be a failure: one can, of course, arrive at a good strategy largely by luck, intuition, or coercion, and hopefully this will be the case.

Whether the strategy will have demonstrably positive impacts on Nova Scotia's forests and the forest sector will depend not only on its faithful implementation *and* actualization of the hoped-for positive impacts, but also the public's ability to discern those impacts among the myriad of other influences on those same forest values. At the very time the strategy is beginning its implementation journey, the forest-products processing and manufacturing sector of the economy is undergoing profound change.[54] Evidence from a variety of sources suggests that woodlot owners are

54. House of Commons, Standing Committee on Natural Resources, *Canada's Forestry Industry: Recognizing the Challenges and Opportunities* (2008).

increasingly unwilling to harvest timber for the market.[55] Climate change continues unabated, global markets go their own ways, our energy future is incredibly uncertain, and so on. Incisive monitoring and analysis are crucial for gaining insight on strategy success.

It is, to be sure, a complicated situation. Perhaps we should view the strategy as the best outcome given the political processes designed to deliver it. Thus, it should be seen as the most interim of interim measures. If others agree that both the technical and the political elements of strategy development could be much stronger in this province, then Nova Scotians must collectively begin to discuss and develop stronger processes. In this context, let us assume that *EGSPA* delivered admirable targets and milestones for sustainable prosperity in Nova Scotia. We got a new forest strategy as per *EGSPA* directions, but the process was unnecessarily fractious and the result weak and unsupported on both technical and political grounds. Perhaps *EGSPA* should specify (or, rather, should have specified) some elements of strong process that would bias for, not against, technically defensible and politically supported solutions. On technical grounds, strategic environmental assessment offers much hope in terms of explicit analysis of potential future outcomes of policy alternatives. On political grounds, consensus-seeking negotiation among stakeholders holds the most promise.

Our forests deserve better. Forest-management problems in Nova Scotia, as elsewhere, are "wicked."[56] Such "wicked" problems are best tackled using the transdisciplinary imagination.[57] We have eight short years until 2020 when the forest strategy will need a successor. Let's get started!

55. L Sanderson & PN Duinker, "Woodland Owners and the Forests of Nova Scotia: Results of a Survey" (Halifax: School for Resource and Environmental Studies, Dalhousie University, 2012) [unpublished, copy on file with author].

56. GM Allen & EM Gould Jr, "Complexity, wickedness, and public forests" (1986) 84:4 Journal of Forestry 20.

57. VA Brown, JA Harris & JY Russell, eds, *Tackling Wicked Problems Through the Transdisciplinary Imagination* (London: Earthscan, 2010).