Strategic environmental assessment benefits to industry: a case study of integrated SEA in Saskatchewan's forestry sector, Canada

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Introduction

Recent efforts to design and implement strategic environmental assessment (SEA) frameworks have focused predominately on government policy, plan and program decision-making with very little attention given to the value of SEA for industry planning. As a result, the potential benefits of SEA to industry, as a business tool in addition to its assessment role, have yet to be fully realized amongst industrial proponents (Marshall, 2003). That said, SEA practice is ongoing in industry, albeit informal and often under a different label, and is proving to be a valuable tool for industry planning and decision-making. Based on a case study of the Pasquai-Porcupine forest management plan and assessment in Saskatchewan, Canada, this paper illustrates the added value of integrating SEA with industry planning and decision-making practices. In this paper 'integrated SEA' simply refers to the merging of SEA principles and practices with decision-making to ensure that environmental considerations are fully addressed in all stages of resource development.

Background

There have been few incentives to encourage the adoption of strategic environmental assessment (SEA) principles and practices in industry planning and decision-making. If the long-term goal of SEA is to move towards the consideration of environmental aspects with planning and development in all stages of decision-making, then SEA principles must become an integral part of industry and the benefits of SEA must be fully recognized.

Wever (1996) identifies four fundamental principles of the business model of strategic planning, notably:

- long-term market survival;
- realization of the implications of business decisions on customers, competitors, communities and employees;
- establishment of a competitive advantage over competitors; and
- the selection of technology, operating standards, and procedures that contribute to the industry's performance and market position.

When corporate environmental responsibility is added to the business model, environmental issues have to be managed from each of these four perspectives (Jones and Mason, 2002). In other words, industry performance and success in the market depend in part of the industry's environmental performance, compliance with government standards and regulations, and the management and mitigation of potential costs borne by society.

Thus, if SEA is to be successful in industry planning practices, then it must "bring forward and initiate change in the strategic decision-making processes that are an accepted and valid worthwhile component of corporate planning and decision-making pathways" (Marshall, 2003). That is to say, SEA must provide an opportunity for industries to consider 'the effects of the environment on business.'

Case Study: Pasquai-Porcupine Forest Management Plan

The application of Canadian federal EA processes to forestry operations is relatively limited. In Canada, forest planning and management fall primarily under provincial jurisdiction. However, as Bonnell (2003) explains, at the provincial level the application of EA to forestry varies considerably from provinces such as New Brunswick and Alberta where forestry activities are not identified as being subject to or exempt from EA, or British Columbia and Quebec where forestry activities are covered under provincial forestry legislation.

In Saskatchewan, Section 9.1 of the *Environmental Assessment Act* does require the EA of forest management plans prepared by industry. Thus, forest companies wishing to enter into a forest management agreement for the purposes of harvesting, management and regeneration are required to prepare a 20-year Forest Management Plan (FMP) and an environmental impact statement for review by the Saskatchewan government and the public. While 20-year FMP assessments do not actually carry the SEA label, and there exists no formal requirement for SEA in Saskatchewan, in recent years three major forest management plans, including the Pasquai-Porcupine Forest Management Plan, have prepared 'strategic' assessments under Saskatchewan's EA *Act*. Although these assessments are not formally recognized as SEAs, they do demonstrate the principles of SEA and serve to illustrate a number of benefits to industry from integrating SEA with planning and decision-making.

The following sections highlight the key characteristics of the Pasquai-Porcupine Forest Management Plan and assessment, followed by a discussion of the contributions of integrated SEA systems and practices to industry-based planning and decision-making.

Scope of the Assessment

In 1995 a forest harvesting and management partnership was formed between MacMillan Bloedel Limited, one of Canada's largest forestry industries, and a subsidiary of the Saskatchewan Crown Investments Corporations, together known as the Saskfor-

MacMillan Partnership (SMLP). In compliance with the Saskatchewan *Environmental Assessment Act* and as set out under the province's *Forest Resources Management Act*, SMLP submitted an EA and application for development of the Pasquia-Porcupine forest management area, located along the Saskatchewan-Manitoba provincial border within the Boreal Plain Ecozone.

A reference framework was established for the Pasquia-Porcupine forest management area consisting of a description of the biophysical and socioeconomic baseline environment and trends of the region in question, identification of specific impacts and concerns to be addressed, specified planning goals and objectives (Table 1), and the requirements of other existing policies and plans within the forest management region. Twenty-nine specific acts, bylaws and associated regulations, ranging from the *Canada Fisheries Act* to municipal bylaws under the *Rural Municipality Act*, concerning provincial forest zoning and burning permits, were identified as applicable to the proposed plan operations an thus considered within the scope of the plan development and assessment process.

Recognizing that socioeconomic impacts may extend well beyond the forest management area, in addition to the 34 primary impact communities, 54 secondary impact communities were considered within the spatial scope of the plan and assessment, including 10 recognized First Nations Reserves.

Public involvement commenced during the scoping phase of plan development with the distribution of a public information brochure informing communities and municipalities of the SMLP agreement and inviting their participation in the planning and assessment process. Initial scoping meetings were followed by a series of public meetings and forums with traditional users of the Pasquia-Porcupine area and discussion with the existing Pasquia-Porcupine Forest Management Advisory Committee.

Table 1: SMLP plan development and EA objectives

Vision:

- Sustainable forest management: enhancing the long-term health of forest ecosystems while providing ecological, economic, social, and cultural opportunities

Mandate:

- To produce the optimum supply of outputs to all stakeholders and provide a fair distribution of social and economic benefits to local communities

Selected goals and objectives:

i. Provide quality products to meet customer's needs and fair returns to stakeholders
ii. Provide safe and stable jobs
iii. Safeguard heritage resources and traditional land uses
iv. Maintain forest diversity and diversity of life forms and ecosystems
v. Protect primary resources
vi. Ensure forest areas are regenerating after harvest

Source: SMLP (1997)

Plan and Assessment Alternatives

In preparing the 20-year FMP and assessment document, SMLP identified five strategic forest management plan alternatives. These alternatives were intended to assist the assessment process and inform the responsible decision maker in the final determination of the most appropriate timber harvest schedule and volume in light of stated goals, objectives, industry regulations, and existing biophysical and socioeconomic baseline conditions and trends. The five plan alternatives proposed by SMLP (1998:23) included:

- no timber harvesting (baseline condition);
- low timber priority with reforestation based on historic levels, including retention of mature forest stands and hydrological constraints on clearcutting;
- intermediate timber priority with enhanced reforestation, including retention of mature forest stands and hydrological constraints on clearcutting;
- high timber priority with enhanced reforestation, reforestation of all unstocked productive land, no maintenance of old growth forests, and no hydrological constraints on clearcutting; and
- the SMLP proposed option of a combination of the above with enhanced reforestation, restoration of insufficiently restocked areas, retention of old growth, and hydrological, species-specific, and ecosystem sensitivity constraints on clearcutting.

Assessment Criteria and Indicators

The assessment criteria identified in the plan represented the specific parameters and standards that must be met as set out by the broader vision, mandate, and plan goals and objectives. Indicators for each plan goal were identified for the various affected socioeconomic and environmental components and used as gauges in the assessment process to inform plan development (Table 2).

Table 2. Selected assessment criteria and indicators

Goal/objective: Provide quality products to meet customer's needs and fair returns to stakeholders	
	Criteria/indicators: Average annual gross domestic product of at least $100 million during the plan period without affecting the contributions of other sectors
Goal/objective: Provide safe and stable jobs	
	Criteria/indicators: Employ 500 persons in harvesting and forest management operations
Goal/objective: Safeguard heritage resources and traditional land uses	
	Criteria/indicators: Maintain the availability and quality of recreational opportunities and ensure that operations do not detract from existing land uses

Source: SMLP (1997)

Impact Evaluation

Impact evaluation was carried out for each alternative in relation to the key criteria, indicators, and goals within the context of the baseline environment and broader forest management vision. For biophysical impacts, each alternative was assessed by a panel of

physical scientists using physical modeling, forest land inventories, and computer simulation techniques. A pre-harvest baseline environment was established combining ecological and silvicultural data, and spatially-based forest planning and simulation models constructed to predict yields and changes to the forest environment for each of the proposed plan alternatives.

In a similar fashion, the socioeconomic impacts of each alternative were assessed by experts in forest modeling, economics, and the social sciences using socioeconomic impact input-output models and integrated forest planning and simulation modeling.

Outcome and Mitigation

The final plan, informed by the assessment process, identified the proposed SMLP option as the preferred alternative for forest management and development. Based on the assessment criteria and specified goals and objectives, while the SMLP proposed alternative would not generate the most significant economic benefits or result in the least number of negative environmental effects, it was the preferred alternatives based on maximizing timber supply, creating local economic benefits, and balancing environmental and socioeconomic concerns with sustained industry growth. Under the proposed SMLP plan alternative, 22 potentially negative residual impacts and 65 management measures were identified.

Summary

Although not formally recognized as an SEA, neither was it carried out under any formal SEA system, the Pasquia-Porcupine plan and assessment did adopt an integrative SEA approach to plan development (Table 3).

Table 3. Pasquai-Porcupine FMP SEA characteristics

SEA Principles	**FMP characteristics and components**
SEA Input	
i) Clear requirements and guidance	▪ Section 9(1) Saskatchewan EA Act ▪ Saskatchewan Forest Resources Management Act
ii) Vision and goal led	▪ Guided by Canadian Standards Association vision of sustainable forest management ▪ Clear statement of plan and assessment philosophy ▪ 11 plan and assessment goals and objectives
iii) PPP directed	▪ Focuses on plan development ▪ Set within the context of 29 related acts and bylaws

SEA Process	
iv) Reference framework	▪ Reference framework establishing plan and assessment goals and objectives ▪ GIS inventory developed for resource assessment and monitoring ▪ Baseline environmental and socioeconomic provide constructed for directly and indirectly affected communities and municipalities
v) Alternatives	▪ Baseline, SMLP preferred option, and three additional plan alternatives presented for consideration
vi) Integrative	▪ Biophysical, social and economic impacts assessed for each plan alternative ▪ Assessment unfolded with plan development and informed ongoing decision making processes
vii) Systematic	▪ Structured assessment process from screening, scoping, and alternatives assessment to follow-up
viii) Accountable	▪ Objectives, verifiable criteria and indicators stated for each goal ▪ 65 measure proposed to prevent or management impacts presented in the final plan
ix) Participative	▪ Public involvement stated explicitly as a planning goal ▪ Public involved from the outset of plan scoping

Observations

In light of the Pasquia-Porcupine experience, a number of observations concerning the added value of integrating SEA with industry planning are ventured.

First, integrating SEA with plan development streamlines EA procedures and requirements. Wever's (1996) model of strategic business planning, for example, identifies efficiency as a central concern to business success. As illustrated by the Pasquia-Porcupine assessment, using SEA to inform the planning process reduces the necessity of preparing a separate plan assessment document and, ideally, reduces the role of legality following plan development. In the Pasquia-Porcupine case, a consolidated forest management plan and assessment document was presented at the close of the planning process.

Second, adopting SEA principles and practices to industry planning demonstrates industry's commitment to environment and society. As suggested by Wever (1996), corporate responsibility implies demonstrating industry commitment to environmental conservation and societal sustainability through its plans and operations. In the Pasquia-Porcupine case this commitment was demonstrated by preparing a plan that was based on the Canadian Standards Association's vision of 'sustainable forest management,' an

industry mandate which included 'sustainable communities,' and eleven assessment goals and objectives each paired with measurable progress indicators.

Third, integrating SEA facilitates compliance with industry and environmental regulations and standards. Under the traditional 'end-of-the-pipe' approach to plan impact assessment, the focus is on presenting a plan, predicting its potential impacts, establishing a management system, and then monitoring for compliance. By integrating SEA as part of plan development, assessment results can inform decision making and ensure that the resultant planning document will be consistent with standards, regulations and existing policies, plans and programs. In the Pasquia-Porcupine assessment, for example, 29 acts, by-laws and regulations were used to guide plan development and strategic decisions.

Fourth, SEA through industry planning demonstrates accountability in decision-making. Rather than ask 'what are the likely impacts of the proposed action,' SEA allows industry to identify, present, and systematically demonstrate the potential benefits and limitations of competing plan alternatives. At a minimum, alternatives assessment provides an opportunity for industry to market its 'preferred' alternative.

Fifth, integrating SEA principles with industry planning facilitates the early integration of affected interests and values. Public are rarely part of industry planning and decision-making and public involvement is typically an add-on component at the stage of plan completion and review. Under the SEA model, public are integrated at the earliest possible stages of decision-making, during plan scoping. In this way the final plan is not a 'public surprise' and, ideally, public concerns have already been identified and addressed prior to plan presentation for approval.

Finally, and perhaps most importantly from an industry perspective, is that the integration of SEA principles with industry planning and decision-making enhances the likelihood that the final plan will be accepted by both the public and regulatory agencies. As opposed to being 'presented and measured', an integrative approach ensures that the necessary terns and conditions of plan approval are met during plan development.

Conclusion

To conclude, whether under a formal SEA system or informally as a set of planning principles, SEA can facilitate improved environmental planning processes. When implemented as an integral part of industry planning and decision-making, industry can potentially benefit from: a more streamlined and efficient environmental assessment and regulatory approval process; the availability of data concerning the potential impacts of decision options as the planning process unfolds; quality assurance with regard to meeting industry standards and policy requirements; early and demonstrated compliance with guidelines and regulations at the time of plan completion; and perhaps most importantly, increased likelihood that the plan or course of action will be accepted by regulators and the public.

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Note

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