The efficacy of EA for sustainable forest management

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Abstract

This paper examines the efficacy of environmental assessment (EA) as tool for sustainable forest management (SFM). In Canada, EA has been the subject of much criticism and there is considerable debate as to whether it is contributing to better environmental management. This is especially the case in the forest sector, where the application of EA is variable and inconsistent, and the role of EA in supporting SFM has received only limited attention. Based on a case study of 20-year Forest Management Planning (FMP) in Saskatchewan, Canada, we examine the efficacy of EA as a tool to support SFM activities. A set of indicators of 'effective' EA for SFM are developed based on the academic and professional literature, and applied to Mistik Management Ltd.'s 20-year FMP. Results indicate that EA plays an important role in the FMP process, providing for greater understanding of potential effects at the ecosystem-level, facilitating public engagement, and is more apt to consider broad alternatives to proposed FMP activities. However, the current approach to EA is only loosely linked to SFM objectives and outcomes. There is concern amongst stakeholders that requiring EA approval of 20-year FMPs is a costly and inefficient duplication of process. We argue that a more integrative approach to EA in the forest sector, specifically in the form of regional or strategic environmental assessment, and the explicit recognition of SFM objectives in the EA process is required if EA is to play a more effective role in ensuring SFM.

Introduction

In Canada, the application of EA to the forest sector varies from province to province and exemplifies a fragmented relationship leading to the assertion that forestry is an 'orphan' of EA (Bonnell 2003; Duffy 2004). Limited evidence of EA's contribution to forest management has led many to suggest that the potential environmental effects of forest management can be adequately managed by the forestry community itself, without any need for a required EA of proposed forestry operations (Bonnell 2003; Taylor 1990). Although EA surfaced as a project-based tool for identifying impacts and proposing mitigation measures prior to project design and approval (Morrison-Saunders and Fischer 2006; Caldwell 1993; Sadler 1996), since the early 1990s Saskatchewan has been using EA in its approval process of regionally-based 20-year FMPs. Lessons are now emerging from the longstanding relationship between EA and forest management planning in the province, showcasing a higher-tiered and integrative planning framework that is strategic EA (SEA) 'in all but name' (Noble 2004). However, despite its long history little is known of the extent to which EA has contributed to better managed forests in Saskatchewan.

This paper reports on the understandings of and expectations for EA's role in forest management planning in Saskatchewan's forest sector.

Environmental assessment in Saskatchewan's forest resource sector

Environmental assessment has been the primary instrument for environmental management in Saskatchewan since 1976. The EA process was formally enshrined in 1980 under the *Saskatchewan Environmental Assessment Act*. Due to their broad spatial and temporal scale, forest management plans were considered 'higher level planning' in Saskatchewan since the late 1970s (Government of Saskatchewan 2007). In 1991, following a recommendation by the Saskatchewan Environmental Assessment Review Commission, which stressed the need for more integrative and comprehensive environmental planning, the province added Section 9.1 to the *Act*, requiring

Ministerial approval of all 20-year FMPs. The EA process, as it applies to forestry in Saskatchewan, exists within a tiered system of forestry planning stemming from a provincial/strategic *Forest Accord*, to regional plans including FMPs, each requiring an EA, and below that more local/site-specific annual operating plans (AOPs). The staged requirements of each the EA and FMP process are shown below in Table 1.

Table 1. Overview of FMP and EA processes in Saskatchewan

FMP Process	**EA Process**
Proponent applies for long-term forest tenure (FMA-Forest Management Agreement) – project automatically designated a 'development'[1]	Provincial EA process is triggered
Proponent begins FMP process	Licensee/Proponent provides notice to stakeholders (Aboriginal groups and the public)
FMP actions and deliverables: ➢ FMP Terms of Reference ➢ FMP Workplan ➢ Public Consultation Plan ➢ FMP – Volume 1- Background information ➢ Values, objectives, indicators and targets (VOITS) set out ➢ Planning Inventory ➢ Forest Development Report ➢ Forest Estate Modeling Report ➢ FMP – Volume II – FMP direction and implementation	EA Public Consultation process undertaken: ➢ Ministry of Environment (MOE) commences Aboriginal Duty to Consult process ➢ Licensee/Proponent notifies stakeholders that FMP is available for public comment. ➢ Ministry representative attends all meetings. ➢ Draft FMP released for public review.
FMP submitted for review and approval by the Minister	MOE completes Aboriginal consultation process
Minister approves the 20-year FMP for a 10-year period FMA (or Term Supply License (TSL)> 5years) awarded	
10-year renewal stage of FMP pursuant to the *Forest Resources Management Act*	EA approval required for new 10-year plan to extend 20-year FMP only if there is a "Change in Development"

[1] as defined by the Saskatchewan *Forest Resources Management Act* and the Saskatchewan *Environmental Assessment Act*

In 1988 Mistik Management Ltd. (Mistik) entered into its existing Forest Management Agreement (FMA) to harvest timber in the northwest region of Saskatchewan, a forest management area of approximately 3 million hectares. Mistik is jointly owned by shareholders of NorSask Forest Products Inc. and Millar Western Pulp Ltd., Meadow Lake. Mistik provides an ideal case to examine the efficacy of EA in its role for forest management; it was the first 20-year FMP in Canada required to be fully reviewed under EA legislation before granting approval. Prior to EA application, FMPs were primarily constructed to sustain maximum wood fibre yield. The Mistik FMP achieved approval in 1997 and has recently completed 10-year renewal of its plan. Currently, the Saskatchewan government is seeking to formally integrate the EA and 20-year FMP processes into one *Environmental Code*. With Mistik's plan now in its 15th year and environmental regulation being on the threshold of change in Saskatchewan, timing is opportune to analyse EA's contribution to the Mistik FMP process. Results of this study may serve to inform development of the new *Code* and advance knowledge of EA efficacy within the context of SFM planning more broadly.

Methods

Evaluation of the efficacy of EA for SFM in Saskatchewan was done through a case-study of Mistik Management Ltd.'s 20-year FMP. Principles linking EA with SFM were adapted from international Forest Stewardship Council (FSC) Principles & Criteria for forest management (2002), national Canadian Council of Forest Ministers (CCFM) Criteria and Indicators for assessing sustainable forest management (2003), and what extant literature considers critical 'best practice' for 'effective' EA (see, for example, Doyle and Sadler 1996; Morrison-Saunders and Bailey 1999; Senecal et al. 1999; Fuggle 2005; Hilding-Rydevik 2006). These principles were applied to the Mistik FMA using a combination of document analysis and semi-structured interviews to gauge the extent to which EA has facilitated SFM practices and outcomes in this regional context. Participants were identified based on their experience and involvement with EA application and FMP development in Saskatchewan, and with Mistik specifically. Participants were asked to discuss EA's performance based on four principles that link EA and SFM, namely i) EA institutional and planning framework is conducive to SFM; ii) spatial and temporal scale of EA supports SFM practices; iii) EA facilitates maintenance or improvement of forest ecosystem health; iv) EA facilitates the maintenance or improvement of human well-being. Participants were also asked to provide comment in terms of value added by applying EA to the FMP, and also to provide their thoughts on integrating the two processes.

Results

Principle 1: EA institutional and planning framework is conductive to SFM:

There is a legal requirement to apply EA to forestry plans and operations with licenses greater than 5 years. Twenty-year FMPs are renewed every 10-years and updated annually on five year rolling cycles. Most participants reported that EA is currently an integrative part of, rather than applied to FMPs. Over half of the study participants indicated that EA falls short in terms of integrating information across agencies (i.e. within government) and disciplines (e.g. natural and social sciences). Terms of reference included in the EA did affect the development of the FMP, causing it to consider economic, social, and environmental impacts of the FMP. The majority of participants however reported that EA failed to link other higher-tiered and horizontal forest planning and management actions.

Principle 2: Spatial and temporal scale of EA support SFM practices

The EA process for Mistik's 20-year FMP was applied at the FMA level. Environmental impacts occurring at both the forest-level and site-specific level were considered. Results from document analysis and stakeholder interviews considered the Mistik EA to be 'regional' in scale and comparable to provincial and regional land use planning assessment. Interview responses indicated that there was an added-value of ecosystem-based management planning as a result of EA application to FMPs, with a participant from the academic community noting that *"we have a better idea of what we have in our forests now and that's been a good thing".*

Principle 3: EA facilitates maintenance or improvement of forest ecosystem health

According to recent provincial government 'state of the environment' reports (see 2009 and 2011 reports; CPAWS State of Saskatchewan's Boreal Forest), Saskatchewan forests are healthy, productive, and harvest sites that were once backlogged are now successfully regenerated. Most participants indicated that potentially adverse effects of forest operations were identified early on in the FMP, prior to plan implementation and accounted for in the EA. The extent to which EA specifically has contributed to maintaining and enhancing forest ecosystem health (e.g. condition and productivity), however, was largely unknown to stakeholders. Although most agreed that management of the Mistik forest is more considerate of the entire ecosystem since the late 1990s, most stakeholders attributed this

outcome to a combination of the FMP, voluntary forest certification requirements (e.g. FSC, CSA), and the integrity of the forest company (i.e. Mistik), and to a lesser extent the EA process.

Principle 4: EA facilitates maintenance or improvement of human well-being

Formal requirements for public consultation and engagement with stakeholder groups were accounted for in the EA. Participants acknowledged that due to the EA process, a larger (i.e. provincial) 'public' was consulted than what would occur under the FMP consultation process alone. Participants indicated that the legal 'right' to participate exists, but that public engagement through the EA process did not provide stakeholders with the means to participant in terms of funding, accessibility and timing to review relevant information prior to consultation in order for their input to influence FMP outcomes and practices.

Discussion

Most participants were unable to differentiate the responsibilities and contributions of EA to SFM from those of the FMP. The majority of participants expressed that they lacked confidence to evaluate EAs role for SFM based on the principles and parameters developed and implemented as part of the study method. Many expressed that following approval of the FMP, the EA no longer influenced forest planning and management activities in the FMA. Yet, few participants would do away with EA approval for 20-year FMPs, indicating that it allows for broader public consultation, accounts for a wider consideration of the ecosystem including non-forest values, and it provides a 'no harvest' option- considering alternatives 'to', not merely 'within', the FMP. It was generally agreed that the EA and FMP already work together in an informal strategic and mostly simultaneous way and that formal integration would increase timing efficiency and save on high costs incurred by meeting the demands of both processes.

Although feedback from participants indicated that the link between EA and better managed forests is ambiguous at best, several lessons emerged suggesting that as a result of applying EA to 20-year FMPs both processes are strengthened. In recent years, academics have coined EA application to 20-year FMPs as informal SEA (Noble 2004; Gachechiladze et al. 2009). This appears to be the case with the Mistik EA/FMP, which has demonstrated such higher-level/strategic planning characteristics as:

- A guiding mission statement emphasizing Mistik's commitment to an optimal and equitable balance among all forest users (NorSask 1995).
- Evidence of commitment to other higher- and lower-tiered regulations, acts, and policies affecting forestry in the FMA area (e.g. EA requirements, FMA licensing requirements, Roads and Transportation Agreement, co-management agreement responsibilities).
- Monitoring and follow-up program identified in the EA and actualized through the FMP (e.g. annual reports affect AOPs, which affect 5-year rolling plans).
- Public involvement in the process is clearly stated as a goal, evidenced by established co-management agreements with local communities to share decision-making in forest management activities.

Conclusion

Environmental assessment is among Canada's primary tools for environmental management. However, the extent to which it has served this purpose, especially as it applies to forest management, is largely unknown. Currently, both the EA and 20-year FMP are formally stand-alone, yet highly integrated processes. There is a significant opportunity, given the changing regulatory environment in Saskatchewan, to integrate the two processes in a formal and perhaps 'strategic' framework that maintains the environment-enhancing components of each process and subsequently improves time- and cost-effectiveness. Although the EA process has been criticized as

being a mere administrative exercise by some, in the case of 20-year forest management planning it has contributed to a better understanding of the forest environment; better, more publicly, informed decisions; and forest management outcomes that results show are better than those prior to EA application.

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