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PLANNING ENVIRONMENTAL ASSESSMENT, QUESTION 4 – "UNDER WHICH CIRCUMSTANCES SHOULD ENVIRONMENTAL ASSESSMENT BE UNDERTAKEN AT THE REGIONAL, STRATEGIC OR PROJECT-LEVEL"

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Abstract

The current one dimensional, project-based approach of Canadian federal environmental assessment is at the wrong scale to properly manage environmental effects of development activities. Noticeably absent from the current process under CEAA 2012 is the use of strategic and regional environmental assessments (SEAs and REAs, respectively).

An SEA can be viewed as an umbrella for any EAs that go beyond traditional project-level environmental assessments (PEAs) (e.g., Fundy Ocean Research Center for Energy in Bay of Fundy, Nova Scotia), but it does not necessarily consider all human activities within a given region (Sinclair et al., 2016). SEAs can uniquely consider synergistic and additive impacts of several small projects, where their combined effect is far greater than those predicted for each individual project (Therivel & Partidário, 1996). REAs are often carried out in conjunction with a regional development plan, and can help shape investment priorities and future development activities (World Bank, 1996).

SEA and REAs are needed to assist in identifying a proposed development's expected impacts and cumulative environmental effects. Understanding and addressing these aspects at broader geographic scales is necessary to ensure the sustainable development of the environment. However, cumulative effects assessment (CEA), in particular, has occurred at a rudimentary level, and largely within the constraints of PEA (CCME, 2009; Sinclair et al., 2016).

This paper begins with a review of EA methods in literature and its evolution at the federal level to arrive at the current problem facing the Canadian EA process. Next, options to reform the current EA process in Canada are explored. A recommendation to pursue a legislated, integrated approach to conduct EA at the regional, strategic and project levels is put forth, with limitations regarding its practical application.

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Acronyms and Abbreviations

BREA	Beaufort Sea regional environmental assessment
CCME	Canadian Council of Minister of the Environment
CEA	Cumulative effects assessment
CEAA	Canadian Environmental Assessment Act
EA	Environmental Assessment
EARP	Environmental Assessment and Review Process
FEA	Federal Environmental Assessment
FEARO	Federal Environmental Assessment Review Office
PEA	Project-level environmental assessment
PPP	Policies, plans, and programs
REA	Regional environmental assessment
SEA	Strategic environmental assessment

1. Introduction

1.1 Quality in EA

With our ever-increasing natural-resource-dependent economy, the importance of robust decision-making tools for evaluating the consequences of human actions on the environment, and when appropriate, mitigating those consequences, is paramount. Environmental assessment (EA) is a formally recognized planning tool that has been used in Canada since its conception in the 1970s (Government of Canada, 2016a). Without quality work in EA, possible risks include project cost implications, loss of public trust, worsening of environmental conditions, and consumer backlash against the industry and businesses responsible for environmental disasters (Sadar, 1996).

1.2 Question Addressed

The question chosen for this Federal EA (FEA) reform is under the Planning Environmental Assessment section: “Under which circumstances should environmental assessment be undertaken at the regional, strategic or project-level?” (EA Expert Panel, 2016).

1.3 Objective

Many believe that the current EA scheme under the Canadian Environmental Assessment Act (CEAA), 2012, is broken (Johnston, 2016; Sinclair et al., 2016). With a nearly exclusive focus on PEAs, the resultant EA process is more reactive than proactive in its approach to environmental management and sustainable development.

There is a crucial need to mandate the use of EA across the development of policies, plans, and programs (PPP) and multi-sector developments within a defined geographic area, alongside individual development initiatives. Hence, the objective of this report is to advocate for greater use of REA and SEA at the federal level, thus promoting an integrated, multi-tiered approach to conducting FEA. The timing is right to set a foundation for the integration of SEA, REA, and PEA schemes (Goodland and Tillman, 1995; Johnston, 2016).

1.4 Paper Layout

EA literature from scientific, social, and legal experts is summarized in Section 2 for each EA method. The evolution of these methods at the federal level in Canada is outlined in Section 3. A statement of the problem regarding the current FEA process is presented in Section 4, and various options to fix this issue are discussed in Section 5. Lastly, a recommendation and its potential limitations are outlined in Section 6.

2. Literature Summary

2.1 Strategic Environmental Assessment

SEAs could identify environmental and sustainability benchmarks by which the effects of a PPP can be tested, and appraise whether the impacts of a PPP are likely to be in accordance with sustainability objectives (Therivel & Partidário, 1996). An SEA is not intended to be an everyday appraisal tool (CCME, 2009). It is likely to be reserved for fairly significant and complex policy-making and strategic decision-making contexts. According to Braun (2006), the SEA approach has to be understood as an ‘umbrella’ or a collection of methods and procedures to facilitate the interface between environment and development issues at different levels of decision-making.

An SEA is not an add-on process, but one linked with the ongoing economic and social analyses underway (Government of Canada, 2016b). The analysis of the environmental considerations should be undertaken on an iterative basis throughout the policy development process, and be fully integrated into the analysis of each of the options developed, so that the consequences of alternative proposals can be compared (Government of Canada, 2016b). The final recommendation on PPPs are then informed by the results of the SEA.

SEAs are subject to greater levels of uncertainty than PEAs; PPPs are generally nebulous, non-linear, complex, and iterative (Therivel & Partidário, 1996). SEAs can also be seen as providing context and rationale within which to address cumulative effects (CCME, 2009). However, the evidence for how this synergism is achieved has yet to be demonstrated with adequate methodologies and empirical examples.

SEAs have successfully been used for addressing novel technologies. For example, in the Soest District in Germany, an SEA was conducted in 1995 for all of the wind farms proposed in the respective district. Inland wind farms were a relatively new phenomenon in the 1990s (Therivel & Partidário, 1996). More than 70 applications of wind turbines or wind farms were forwarded in 1995 just to the Soest District Council. Due to the high number of applications, the Soest District commissioned researchers to develop an SEA framework study for wind power developments (Therivel & Partidário, 1996). A proposed zoning model was introduced to better assist both the government and developers in decision-making. This is an example of a sensible, goal-oriented way of combining economic and ecological criteria in the form of an SEA

(Therivel & Partidário, 1996). The difficult and time-intensive decisions regarding individual projects were, in this case, eased through the rapid processing of a spatial zoning concept.

2.2 Regional Environmental Assessment

REA has shown to be effective in the identification of environmental actions to minimize environmental problems and support local sustainable development (Braun, 2006). REAs assess ongoing activities, multi-sector development plans, and potential project proposals in a defined geographical area, based on ecological, socioeconomic, administrative, and other boundaries, such as river basins (World Bank, 1996). REA has a close relation to CEA in that both approaches systematically address cumulative problems (Lawrence, 1994). Cumulative evaluation at the regional scale can support a better understanding of carrying capacity and the sustainable development process.

REAs help not only to protect the environment, but also to educate and provide economic opportunities for the local community. While an REA can respond to existing cumulative environmental problems, it also proposes precautionary actions for local, sustainable implementation, rendering the REA approach as both reactive and proactive (Braun, 2006).

An example of a current REA is the Beaufort REA (BREA), which is a multi-stakeholder initiative to sponsor regional environmental and socioeconomic research of oil and gas management in the Beaufort Sea (BREA, 2016). This REA's aim is to make historical information available and gather new information vital to the future management of this region. BREA hopes to help ensure that federal governments, Inuvialuit, and industry are better prepared

for offshore oil and gas exploration and development by filling appropriate regional information and data gaps, and supporting effective and efficient regulatory decision-making by providing the necessary multidisciplinary information to all stakeholders (BREA, 2016). This case study shows the potential opportunities to provide standardized, consistent, and relevant information which can inform proposed PEAs.

2.3 Project-level Environmental Assessment

PEA is now widely practiced, and has had a positive effect in regards to improving the planning and design of projects (Sadar, 1996). The PEAs primary function is to plan and develop, and to specify and explain the choices made, and the changes foreseen (Goodland and Tillman,1995). According to the Canadian Council of Ministers of the Environment (CCME) (2009), a PEA is a non-strategic assessment distinguished by its focus on the implementation of a predetermined action, with an emphasis on predicting the outcomes and how to mitigate them accordingly.

PEAs should be required for long-term projects where the EA could take on some of the characteristics of a SEA, such as an urban development project (World Bank, 1996). PEAs should not be required for many small projects or management plans, with additive effects, such as agricultural management schemes (Therivel & Partidário, 1996). PEAs should consider cumulative impacts, however, it is unlikely for an assessment to generate a complete picture in the absence of an REA and SEA (Duinker & Greig, 2006; Sinclair et al., 2016).

3. Evolution of Practice

3.1 Strategic Environmental Assessment

The federal Environmental Assessment and Review Process (EARP) was introduced as a cabinet policy in 1973, to specifically to address PPPs. Though not legislated, this marked the beginning of FEA which was established as a two-phase process (Sadar & Stolte, 1996); the initial self-assessment, followed by a public panel review (FEARO, 1980; Duffy, 1986). The Federal Environmental Assessment Review Office (FEARO) was created for administering the EARP. This reflected a shift in the government's focus from pollution control to a more proactive and comprehensive consideration of proposed activities (Doelle & Tollefson, 2013).

In the early 1980s, influencing factors such as the work of Beanlands and Duinker (1983) and the appointment of Charles Caccia as Minister of Environment encouraged the formalization of the EARP guidelines order in 1984 (Doelle & Tollefson, 2013). This indicated the federal decision-making responsibility, and clarified scope to physical projects, activities, and policies, plans, and programs. Before the 1990s, several EAs conducted were both REA and SEA in nature, such that they were concept-based assessments or area-wide reviews, and had public review panels (CCME, 2009).

The increase in the number of EAs conducted was marked by the introduction of the CEAA in 1995, which focused exclusively on PEAs. Currently, SEA is left to a separate process under a cabinet directive (i.e., Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals, 2010) which requires all federal departments to apply a mandatory yet non-legislated consideration of environmental concern at the strategic level of PPPs (Doelle &

Tollefson, 2013). The nature of this mandate allows for no formal requirements for the SEA procedure. Instead, SEAs are completed through an ad hoc process, creating significant uncertainty about form, content, timing, and procedure of the assessment (Doelle & Tollefson, 2013).

3.2 Regional Environmental Assessment

The FEA process does not explicitly mandate the need or process of REAs. However, the Canadian Environmental Assessment Agency website states that "the Minister of the Environment has the authority to establish a committee to conduct regional studies for regions that are entirely composed of federal lands. The minister may also establish the committee jointly with another jurisdiction, or jurisdiction to conduct a regional study for regions outside federal lands" (Government of Canada, 2016c).

3.3 Project-level Environmental Assessment

CEAA, 1995 is distinguished from its previous FEA process in two pertinent ways: it was enacted into law, and focused exclusively on PEAs (Doelle & Tollefson, 2013). Indeed, this resulted in a rapid proliferation of PEAs. The Canadian Environmental Assessment Agency was established to help support other federal departments in their application of the CEAA and its regulations (Sadar & Stolte, 1996).

The government used law-list regulations to determine under which circumstances to conduct a PEA. The definition of a project was provided under section 2 of the Act to prevent the exclusion of unanticipated and new projects (CEAA, 1995). If the proposed activity met the definition, the process applied. Alternative triggers, like trans-boundary

agreements, were also available in sections 46 - 48 (CEAA, 1995). Some projects were not bound to the FEA process through exclusion lists, on the grounds of national security, in case of emergencies, or insignificant impacts (CEAA, 1995). The federal process under CEAA remained fundamentally the same from 1995 to 2012 (Doelle & Tollefson, 2013), with a few minor amendments, less relevant to the evolution of SEA and REA.

The current CEAA, 2012 represented several changes to the FEA process, which led to a drastic reduction in the number and scope of federal PEAs (Doelle & Tollefson, 2013). There are several reasons for this, including a vague, discretionary, and constrained triggering process which politicized the FEA process (Doelle & Tollefson, 2013). The triggering process removed the legal test previously in place for determining whether a project required an assessment. The process today begins with the registration of designated projects determined from a listed regulation. Based on this information, the Canadian Environmental Assessment Agency has broad discretion to determine whether an EA is required. In addition, CEAA 2012 stated that "only projects of national significance" would require assessment (Canadian Environmental Assessment Agency, 2012).

4. Statement of Problem

The traditional approach to EA in Canada has been to address the symptoms or outcomes of individual project impacts and mitigating them until they are deemed acceptable, rather than also grappling with broader regional environmental change and the cumulative effects on valued ecosystem components (CCME, 2009). Procedurally, PEAs are concerned about the most likely impacts of a proposed development, and finding ways to mitigate those impacts so that they are deemed acceptable; it does not ask whether the proposed undertaking is the most appropriate

form of development or whether the CEA of such development are in conflict with broader regional environmental goals or desired future conditions (CCME, 2009). The scope and requirements of CEA are simply beyond the reach of any single organization, creating an inherent flaw in the sole reliance of PEAs to properly identify and manage environmental impacts (Sinclair et al., 2016). Other limitations of an exclusive PEA process includes the inability to assess impacts from ancillary developments and discussing broad alternatives, especially the "no-action" alternative, as it would unnecessarily be inefficient and contentious. Therefore, an approach is needed that addresses the cumulative effects of human development actions and provides direction for planning and development decision-making beyond which is possible in PEA (CCME, 2009; Noble, 2010).

After more than forty years of FEA practice, the notion of an explicitly stated and legislative regional and strategic approach to EA is gaining scholarly acceptance (Gibson et al., 2010; Noble, 2010). However, SEAs have been slow to evolve, and its value-added to regional environmental planning and decision-making has not been fully realized (CCME, 2009). In addition, REA has been less prevalent than SEA, largely because development banks and the federal government tend to take a sector approach to strategic development thinking (Annandale et al., 2001).

5. Options to Fix the Problem

5.1 Integrated Management

A synergy between REA, SEA, and PEA can support and develop sustainable initiatives. Johnston (2016) argues that integrated, tiered assessments, starting at the strategic and regional levels, is needed to better improve the EA process. Proper legislation is required to establish the

legal framework, which would include criteria such as "when they are triggered, their processes and substantive requirements, linkages to other levels of assessment, resource management and planning, public and stakeholder engagement requirements, and provision for Indigenous co-governance of all those elements" (Johnston, 2016, p.4). In addition, this integrated approach must be flexible and assessed by a case-by-case basis.

As with the PEA process, SEA and REA are not effective when conducted in isolation. SEA focuses on wider perspectives by analyzing the strategic effects and implications of development of PPPs. The SEA approach tends to be more useful as a broad study to support decision-making, but when it comes to long-term project interventions, it is necessary to develop more detailed, local environmental studies to predict positive and negative impacts with less uncertainty (Braun, 2006). Furthermore, REA alone does not indicate how to improve institutional capacity and finance local sustainable development plans and projects (Braun, 2006).

5.2 Cumulative Effects Assessments at Regional Level

Another option to fix the divorce between a single project's impacts, and REAs and SEAs, is to conduct CEA at a broader, regional level. This would effectively remove the requirement for PEAs to identify cumulative effects since the CEA would be conducted through an REA. In this option, SEA will be conducted as status quo. The need to better assess and manage the cumulative environmental effects of human development activities is well established. However, there are constant and consistent messages that CEA and management in its current form in Canada is simply not working (Duinker & Greig, 2006; Sinclair et al, 2016).

There is an opportunity at the level of policy and land-use planning to integrate cumulative effects science and considerations in the development of land-use plans, strategies, and visions for future regional developments (Noble, 2010). Seitz and others (2011) argue that governments must assume leadership for the integration of establishing objectives and thresholds based on sound scientific guidance and social policy, ensuring that PEAs are relevant to evaluating and monitoring cumulative effects at the broader regional scale, and providing direction to development decision-making through knowledge gained from regional CEA programs. However, the development of approaches to doing regional CEA is still in its state of infancy (Baxter et al., 2001). Moreover, this option could create friction between industry proponents and the government in regards to industry relinquishing control of its own EA process, leading to greater uncertainty about the project and its approval.

6. Recommendations

The sustainable development process requires that today's PEAs extend 'upstream' for improved and strategic decision-making (Goodland & Tillman, 1995). Therefore, it is recommended to have an integrated SEA, REA and PEA approach. SEA and REA should be seen as EA-tools on par with PEA (Therivel & Partidário, 1996).

SEAs and REAs should both be approved earlier than the authorization of the related PEAs to reduce the time and effort normally required for the latter (World Bank, 1991). This is due to SEAs and REAs identifying environmental issues, collecting baseline data, and assembling existing data in advance of PEAs. SEA and REA, if performed as a precursor to PEA, can also consider broad development alternatives and interconnected CEAs, i.e., assessments that are not

currently mandated in industry proponents' narrow EA scope. In certain cases, this may eliminate the need for PEA altogether.

One interpretation of this approach can be seen in recent changes to the Australian Commonwealth EA process. Australia applies SEA and REA, the latter where the Commonwealth has clear jurisdiction (e.g., offshore petroleum exploration). The Australian government, by moving towards an integrated decision-making framework, is increasing its involvement in the FEA process to reduce the frequency of PEAs and their resultant "day-to-day" decision-making (Government of Canada, 2016d). By adopting a more effective and efficient use of limited EA resources, the Australian government is hoping to be more transparent and provide diligent input to a higher level of policy and program development (Government of Canada, 2016d).

A barrier to an integrated approach is the continuing hesitancy of governments to open up their strategic decision-making, and the ingrained habit of treating assessment as an approval hoop rather than a route to better decisions (Gibson et al., 2010). Given that the federal government has yet to establish a legislated framework for mandatory SEA, as recommended by the House of Commons Standing Committee on Environment and Sustainable Development, before the 2010 Parliamentary review of EA, the Canadian government might not be able to adjust to an integrated EA scheme.

However, the rapid international expansion of SEA and REA practice suggests that these barriers are crumbling in many jurisdictions (Rees, 1999; Gibson et al., 2010). FEA in Canada must

successfully move away from its current silos of assessment, science, and management. The pursuit of the proposed integrated management is adaptive in nature. By defining the vision of sustainable development at the SEA and REA level, future PEAs conducted will be informed by, and feed back into, the processes and outcomes.

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