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Conceptualizing strategic environmental assessment: Principles, approaches and research directions

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ABSTRACT

Increasing emphasis has been placed in recent years on transitioning strategic environmental assessment (SEA) away from its environmental impact assessment (EIA) roots. Scholars have argued the need to conceptualize SEA as a process designed to facilitate strategic thinking, thus enabling transitions toward sustainability. The practice of SEA, however, remains deeply rooted in the EIA tradition and scholars and practitioners often appear divided on the nature and purpose of SEA. This paper revisits the strategic principles of SEA and conceptualizes SEA as a multi-faceted and multi-dimensional assessment process. It is suggested that SEA can be conceptualized as series of approaches operating along a spectrum from *less* to *more* strategic – from impact assessment-based to strategy-based – with each approach to SEA differentiated by the specific objectives of SEA application and the extent to which strategic principles are reflected in its design and implementation. Advancing the effectiveness of SEA requires a continued research agenda focused on improving the traditional SEA approach, as a tool to assess the impacts of policies, plans and programs (PPPs). Realizing the full potential of SEA, however, requires a new research agenda – one focused on the development and testing of a deliberative governance approach to SEA that can facilitate strategic innovations in PPP formulation and drive transitions in short-term policy and initiatives based on longer-term thinking.

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1. Introduction

Now in place in some 60 countries (Fundingsland Tetlow and Hanusch, 2012), strategic environmental assessment (SEA) is a familiar member of the impact assessment family. Conceptualized under the philosophy of environmental impact assessment (EIA) as an assessment process appropriate for policies, plans and programs (PPPs) (Wood and Djeddour, 1989), SEA is now viewed as an instrument that can also help shape the formulation and implementation of strategic initiatives, and even play a political role in decision making (Partidário, 2015; Jiliberto, 2011; Bina, 2007). Scholarly research and thinking about the nature and scope of SEA have evolved significantly over the past 25 years (Partidário, 2015; Bina, 2007; Noble, 2000; Bailey and Renton, 1997; Lee and Walsh, 1992). Fischer and Onyango (2012), for example, a comprehensive overview of SEA related research projects and publications, reporting some 500 English language publications in referred journals on the subject. The result has been the development of multiple SEA methodologies and a range of applications (Sizo et al., 2016; Gunn and Noble, 2009; Dalkmann et al., 2004; Noble and Storey, 2001; Théritel and Partidário, 1996), along with more substantive interpretations of the strategic role of SEA beyond that of appraising

PPPs or assessing their impacts (Partidário, 2015; Pang et al., 2014; White and Noble, 2013; Jiliberto, 2011; Sloodweg and Jones, 2011).

The realization that SEA can have multiple roles and benefits in different decision contexts has also led to diversity in understandings and expectations about SEA (Noble et al., 2013; Partidário, 2012; Bina, 2007). There is a general consensus that SEA is somehow different than project-based EIA; however “considerations as to what SEA really is, what it delivers and how it should perform are still far from a consolidated stage” (Vicente and Partidário, 2006: 697). Noble (2000) argued that scholars and practitioners have failed to explain why certain assessments are *strategic* and how they differ from those that are non-strategic. We suggest that notwithstanding the international growth of SEA, and numerous scholarly papers addressing SEA concept and practice, understandings of SEA still vary considerably. Bina (2007: 586), for example, observes that “scholars and practitioners appear divided on such fundamental matters as the concept of and approach to SEA”; whilst Noble et al. (2013) identify the diversity of understandings of what SEA is, and expectations about what it can and should deliver, as major barriers to its advancement.

The purpose of this paper is to revisit the strategic nature of SEA, and to conceptualize SEA as a multi-faceted and multi-dimensional assessment process. Our objective is to help clarify specifically how SEA, as a flexible and multi-purpose assessment tool, relates to the policy and planning processes it is intended to inform. We do so in response to

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recent scholarly arguments suggesting the need to rethink the strategic nature and role(s) of SEA (Partidário, 2015; Partidário, 2012; Pope et al., 2013; Bina, 2007), and in light of the diversity of SEA expectations and understandings that exist amongst SEA scholars and practitioner communities (Silva et al., 2014; Fidler and Noble, 2013; Noble et al., 2013; Fischer and Onyango, 2012; Wallington et al., 2007). In the sections that follow we first briefly explore the evolution of SEA, and strategic thinking in SEA, followed by the fundamental principles that, based on the scholarly literature and evidence from practice, characterize *strategic* environmental assessment. We then conceptualize SEA as an approach to impact assessment that reflects multiple purposes, from appraising existing PPPs to assessing the institutional environments needed to enable the development and implementation of successful strategic initiatives. The paper concludes by suggesting directions in research to advance SEA understanding and influence.

2. Evolution of strategic thinking about SEA

Fundingsland Tetlow and Hanusch (2012) provide a comprehensive overview of the evolution of SEA. Our intent here is not to revisit this history; we focus instead on how strategic thinking about SEA has evolved. The basic concept of assessing the impacts of PPPs is rooted in the 1969 US National Environmental Policy Act, requiring the environmental assessments of proposed federal actions. Fischer and Onyango (2012) report that the concept of strategic assessment had started to gain much traction by the late 1970s, but it was not until the late 1980s, by way of a research report to the European Commission (Wood and Djeddour, 1989), that the term ‘strategic environmental assessment’ was formally introduced and popularized. At the time, SEA was described as environmental assessment appropriate to PPPs and of a more strategic nature than assessments applicable to individual development projects – setting the context for the most commonly cited definition of SEA – the environmental assessment of PPPs. The rationale for SEA at the time, and often still very much so today, was the need to address some of the limitations of project EIA, including the need to more proactively consider potential environmental impacts at earlier stages of decision making (Cherp et al., 2011; Partidário, 2000; Sadler and Verheem, 1996), to resolve longstanding concerns about how EIA approached cumulative environmental effects (Bidstrup et al., 2016; Therivel and Ross, 2007; CCME, 2009), and to set better direction for project-level approval processes (Johnson et al., 2011; Fischer, 2007; Hildén et al., 2004; Fischer, 1999).

In Canada, commitments to assessing the environmental implications of policies were in place in 1984, under the Environmental Assessment and Review Process Guidelines Order, which defined a *proposal* as including any initiative, undertaking or activity for which the Government of Canada has a decision-making responsibility (Noble, 2002). SEA was formally established in Canada in the early 1990s, by way of a federal directive on the environmental assessment of PPPs, and as a separate process from project EIA, thus “making it the first of the new generation of SEA systems that evolved in the 1990s” (Dalal-Clayton and Sadler, 2005: 61). By the early 2000s, Sadler (2001) reports less than 20 countries internationally with formal provisions for SEA. But the adoption of SEA would expand significantly in the years that followed, due in large part to the World Bank and similar agencies promoting SEA in international development cooperation, and the adoption of the European SEA Directive (White and Noble, 2013a; Fundingsland Tetlow and Hanusch, 2012).

SEA emerged under the theory of EIA, and “sharing the same common objective – to assess environmental impacts – but addressing different objects – policies, plans and programs, instead of projects” (Vicente and Partidário, 2006: 69). As a result, the practice of SEA that developed throughout the 1990s and early 2000s, including guidance for its implementation under directive-based systems, was deeply entrenched in traditional project-based EIA principles and methodology (Fundingsland Tetlow and Hanusch, 2012; Gachechiladze and Fischer,

2012; Glasson et al., 2005). This traditional, EIA-based, rationalist approach to SEA was challenged by many scholars as SEA continued to expand and take shape (e.g., Dalal-Clayton and Sadler, 2005; Dalkmann et al., 2004; Owens et al., 2004; Nilsson and Dalkmann, 2001; Brown and Théritel, 2000; Partidário, 1996), with several arguing that such an approach to SEA aligns with neither the complexities nor the realities of policy and planning processes – the very processes and instruments that SEA was intended to address (Elling, 2009; Bina, 2007; Runhaar and Driessen, 2007).

Whilst the expectation of SEA is often that it will influence strategic decision-making, several scholars have suggested that both the practice and the institutionalization of SEA has simplified the complexity of strategic decision making processes, and even the interplay of power and politics in PPP decisions (Jiliberto, 2007; Bina, 2007; Nilsson and Dalkmann, 2001). Nitz and Brown (2001: 329), for example, argued that “SEA must learn how policy making works”, suggesting that SEA researchers have focused on the content and assessment process of SEA, but have given limited attention to whether and how SEA actually fits into policy making and other strategic decision making processes. Challenges to the conceptualization of SEA as an impact assessment tool for PPPs were reinforced by several empirical studies that questioned the influence and added value of SEA to both PPPs and decision outcomes (Noble, 2009). This led many scholars, including Jiliberto (2007: 212), to suggest that SEA needs to “distance itself from the concepts and models of EIA of projects, in order to be able to address the challenges of environmentally improving strategic decisions such as policies, plans and programs.”

The evolution of scholarly research on SEA “has shifted in its views of the SEA process as a formal process...to a much more flexible and adaptable approach” (Retief, 2007: 85) and one with a more strategic focus, beyond PPP impact assessment (see Fischer and Onyango, 2012). This evolution is reflected, in part, in how SEA has been defined over the years (Table 1), from an EIA-like tool for PPPs, to a process to facilitate strategic decisions toward sustainability. Indeed, several scholars are now advocating for a shift in thinking about SEA, and for an advancement in current SEA practice toward a policy, institutional, integrated, and strategic-oriented approach – one that provides for a better understanding of the complex institutional arena and governance conditions of strategic decision processes; ensues the creation and implementation of strategic actions that lead to more informed, and influential PPPs and development decisions; and facilitates strategic transitions toward more sustainable futures (Partidário, 2015; White

Table 1
Definitions of strategic environmental assessment – past and present.

The systematic and comprehensive process of evaluating at the earliest possible stage the environmental effects of a policy, plan or program and its alternatives (Théritel and Partidário, 1996).

The proactive assessment of alternatives to proposed or existing PPPs, in the context of a broader vision, set of goals, or objectives to assess the likely outcomes of various means to select the best alternative(s) to reach desired ends (Noble, 2000).

A decision support tool, designed to integrate environmental and social issues into higher-order PPP decision making processes, bringing together different aspects of problems, different perspectives, and providing possible solutions in an accessible form to the decision maker (Sheate et al., 2003).

A process designed to systematically assess the potential environmental effects, including cumulative effects, of alternative strategic initiatives for a particular region...and in doing so inform the development of policies, plans or programs (CCME, 2009)

A strategic framework instrument that helps to create a development context toward sustainability, by integrating environment and sustainability issues in decision-making, assessing strategic development options and issuing guidelines to assist implementation (Partidário, 2012)

and Noble, 2013a; Partidário, 2012; Fundingsland Tetlow and Hanusch, 2012; Jiliberto, 2011; Bina, 2007; Jackson and Dixon, 2006). The real purpose of SEA, argues Partidário (2012), is to help understand the development context of the PPP or strategy being developed and assessed, and assess environmental and sustainable viable options that will help achieve strategic objectives.

3. Strategic principles for SEA

The International Association for Impact Assessment (2002) identifies several performance-based criteria that characterize a good-quality SEA, namely that SEA is integrated, sustainability-led, focused, accountable, participative, and iterative. In addition to SEA performance or operational criteria, scholars have suggested several defining features or principles of SEA that make it *strategic* and therefore different from traditional impact assessment (e.g. Noble and Gunn, 2015; Lobos and Partidário, 2014; White and Noble, 2013; Partidário, 2012; Kirchhoff et al., 2011; CCME, 2009; Bina, 2007; Hildén et al., 2004; Fischer, 2003; Noble, 2000; CSIR, 1996; Thérivel and Partidário, 1996; Thérivel et al., 1992). Drawing on this literature, and considering how scholarly thinking about SEA has evolved over time, we suggest that there are at least four enduring and foundational principles that characterize SEA regardless of the nature of its application and irrespective of context. Each of these principles is briefly defined below. While these may not be the only defining principles of SEA, they do capture the most basic, defining features of *strategic* assessment. As foundational principles, they are also closely interconnected – if not overlapping.

3.1. Strategically focused

The strategic nature of SEA is not a function of its focus above the project level, but rather its emphasis on influencing PPPs and strategic initiatives. That is to say, the *strategic* in SEA cannot be explained simply in terms of the object of its application (Gachechiladze et al., 2009; Caratti et al., 2004; Partidário, 2000), but rather by the relationships between SEA and broader policy and planning processes (Bina, 2007), including the types of questions being asked (Noble, 2000). Strategic is derived from the Greek word *strategos*, meaning that which has to do with creating initiatives, determining broad goals and then finding the means to achieve them. A strategic approach is one in which the determination of the long-term objectives and the adoption of courses of action and allocation of resources necessary to achieve these goals is developed (Noble, 2000). It is “an attribute that qualifies ways of thinking, attitudes, and actions related to strategies” (Partidário, 2012, p. 11) – not PPPs themselves. As a strategic process, SEA is ultimately about establishing the enabling conditions for initiatives and decisions (including PPPs) to proceed in a more sustainable way (Gunn and Noble, 2015; Kirchhoff et al., 2011; Partidário and Clark, 2000), thus influencing the kinds of initiatives or decisions that are going to happen, by steering or directing their design and implementation (Gunn and Noble, 2015; Slunge et al., 2009; Thérivel, 2004; Dusik et al., 2003).

3.2. Exploratory of strategic options

As a strategic process, the consideration of alternatives, or strategic options, is at the heart of SEA (Gonzalez and Therivel, 2014). SEA is about exploring desirable outcomes, determining what is needed to achieve those outcomes, and identifying and assessing the potential implications of alternative strategic initiatives (Noble and Gunn, 2015). The focus is on building a more desirable or resilient future (Slootweg and Jones, 2011), as opposed to locking-in futures based on past trends, conditions or events (Noble and Gunn, 2015; Partidário, 2007). It is about the identification and evaluation of a range of options, considering their opportunities and risks, toward achieving more desirable outcomes (Caratti et al., 2004; Partidário, 2007). Through an exploration of strategic options, a foundation for long-term strategic policy and

planning is created, with short-term decisions shaping and informing subsequent future actions. Consider, for example, electricity demands outpacing supply in an area with a history of coal-fired electrical generation. Rather than simply propose and assess the impacts of an increase in coal-fired generation capacity, or even explore a single demand reduction policy, SEA is exploratory of a range of options, including the identification and evaluation of short- and longer-term technically viable electrical generation options, exploring demand reduction strategies and efficiency opportunities in the existing system, and then identifying the policy, planning or other conditions necessary to pursue, implement and ensure the success of different options.

3.3. Nested

The strategic nature of SEA is not about “how SEA relates to other forms of impact assessment but how it relates to the planning process it is intended to inform” (Pope et al., 2013: 3). Often conceptualized as a means to influence ‘next-level’ initiatives (Nootboom, 2000; Therivel and Partidário, 1996), particularly setting the direction or specific context for project EIA (Fischer, 2007; Nitz and Brown, 2001), SEA is nested in a much larger system of strategic initiatives and decision-making processes. White and Noble (2013a) identify three types of SEA tiering relationships: tiering down, whereby the SEA influences lower level actions or decisions, such as the terms of reference for project EIA; nesting, whereby the SEA is set within the context of broader goals and objectives, such as a higher-tiered PPP or strategic initiative, that influences the input to the SEA process; and tiering up, whereby the results of EIA trigger the need for SEA, or the results of SEA trigger the need for changes in higher-tiered PPPs or initiatives. SEA thus takes into account multiple, mutually influential tiers of strategic decision making, is designed to provide clear implications for assessment and decisions at the project level, and recognizes the importance of guidance both from higher to lower tier decision making and from lower to higher tier decision making (Doelle et al., 2012).

3.4. Sensitive to PPP and decision-making contexts

Finally, PPP and decision making contexts are highly dynamic; SEA thus defines its role based on the issues it is intended to address, and based on the different PPP contexts in which it operates (Noble and Gunn, 2015; Fundingsland Tetlow and Hanusch, 2012). SEA interacts intimately with the specific decision making process at hand (IAIA, 2002), thus ensuring the development or influence of strategic actions that are often context specific. Wirutskulshai et al. (2011: 358), for example, explain that “context is critical to the success and progress” of SEA, and Marsden (1998) argues that SEA integrates itself within the existing social, political, environmental, economic, legislative and administrative contexts in which PPPs are formulated. That is to say, SEA operates within an institutional arrangement, either formal or informal, and is adaptive to different policy or planning cultures (Hilding-Rydevik and Bjarnadóttir, 2007). Such differences may affect the role of SEA in relation to PPPs, and whether SEA is applied as an integrative PPP development process or as a stand-alone assessment tool (Noble and Gunn, 2015). As such, each SEA is often the product of a particular set of legal, administrative, planning and political circumstances (Jones et al., 2005). That said, sensitivity to context does not imply that SEA is simply a more flexible form of impact assessment – context is not an excuse for poorly conceptualized SEA or for SEA that fails to reflect strategic principles.

4. Approaches to SEA: conceptualizing practice

There is no universal approach to SEA, and SEA itself has been subject to many diverse interpretations (White and Noble, 2012; Vicente and Partidário, 2006). Several authors and organizations have proposed various types of SEA, based on the spatial scope and objective of

assessment (*regional, sectoral, policy – World Bank, 1993*); based on how development goals are defined (*impact centered, institution centered – Loyaza, 2012*); based on the advocacy role of SEA in mainstreaming environmental issues in decision making (*marginal, compliance, constructive – Partidário, 2009*); and based on how SEA connects or interacts with the policy-making or planning process (*single opportunity, parallel, integrated, decision centered – Partidário, 2012*). Our intent here is not to add another layer of complexity, but to offer a much simpler, practice-oriented, conceptualization of SEA that reflects both SEA’s humble beginnings as an impact assessment tool and more recent scholarly thinking about how SEA can better inform strategic decision-making.

We suggest that SEA can be conceptualized as operating along a spectrum from *less to more* strategic. At one end of this spectrum, SEA can be characterized as ‘impact assessment-based’, reflecting the traditions of EIA and aligning with the initial conceptualizations of SEA. At the other end, SEA can be characterized as ‘strategy-based’, capturing more recent thinking about SEA as a process for driving institutional change (see *Noble and Gunn, 2015; Partidário, 2012*) (Fig. 1). The object of assessment at either end of the spectrum may be the same, PPPs. What differentiates the approaches along this spectrum are the purpose(s) of the SEA application and the extent to which the strategic principles, discussed above, are more or less reflected in its design, intent and implementation. We do not suggest that this conceptualization of SEA represents distinctly defined methodologies; neither do we argue that any one approach to SEA is best or sufficient. Our focus is on conceptualizations of SEA, and not on particular SEA design, methodology or supporting tools.

4.1. Impact assessment-based SEA

Impact assessment-based, or IA-based, conceptualizations of SEA are rooted in the traditional paradigms of EIA and project appraisal. The objectives of assessment are similar – to appraise initiatives or to assess their impacts – but the objects of assessment are different – PPPs instead of projects (see *Vicente and Partidário, 2006*). IA-based SEA is the typical approach adopted under formal, directive-based SEA systems and requirements (see *Noble, 2013; Verheem and Dusik, 2011*). A PPP initiative is proposed and either appraised to ensure compliance with particular policies, regulatory or program objectives, or a direct assessment of the PPP’s potential impacts is undertaken (*Partidário, 2012; Noble, 2000*). We suggest that IA-based SEA is characterized by two basic approaches – referred to here as compliance-based SEA, and EIA-like SEA.

4.1.1. Compliance-based

Compliance-based SEA focuses on an appraisal or evaluation of whether, and to what extent, a proposed PPP is in compliance with, or supports, other existing PPP objectives (e.g. existing land use plans) or commitments (e.g. greenhouse gas emission targets) and, if necessary, identifies and explores options to ensure compliance, as a matter of due diligence prior to PPP adoption. *Partidário (2009: 8)* suggests that a compliance approach is “mainly a mechanism of control of compliance

with the existing legislation and policy requirements.” *Gunn and Noble (2009)* and *Aura Environmental (2009)* report that the majority of SEAs carried out by government departments and agencies under SEA directives often resemble evaluations or appraisals of PPPs (see *George, 1999*), designed to ensure that certain environmental factors have been considered in the PPP’s development, or in its approval, and that the PPP supports, or at least does not contradict, other legislation or policy goals and objectives. The 2010 SEA of Canada’s federal clean transportation initiatives, for example, a suite of government programs to address climate change by reducing transportation-related emissions and encouraging the uptake of clean technologies (*Transport Canada, 2014*), emphasized the extent to which the proposed programs aligned with other government policy commitments, including the reduction of greenhouse gas emissions to targets identified in Canada’s overarching Federal Sustainable Development Strategy (*Environment Canada, 2010*).

Compliance-based SEA can be undertaken early enough to verify the consideration of environmental factors and tier toward other existing PPPs, but the consideration of strategic options is inherently restrictive and often limited to adjustments to the proposed PPP, or to its implementation strategy, to better meet compliance objectives. Although the object of assessment may be a policy, the ability of compliance-based SEA to ultimately influence strategic directions is limited (*Partidário, 2015*), due to its focus on compliance though minor adaptations to a predetermined initiative. *Noble (2013)* reports that compliance-based SEA is often viewed by government departments and agencies as a due diligence or risk management tool – a means to ensure that a PPP is in compliance with other policy and political objectives prior to its proposal or implementation.

4.1.2. EIA-like

EIA-like SEA reflects what *Partidário (2009)* describes as the ‘marginal approach’, whereby completing the SEA and generating an SEA report are often seen as the end in itself. Whether the SEA report influences a PPP, or PPP implementation, is often removed from SEA and attributed to a separate review and decision making process. The SEA is focused on the provision of information about the potential impacts of a proposed PPP, and typically follows standard project-based EIA design, including screening, scoping, assessment, mitigation, and monitoring (*Noble and Gunn, 2015; Partidário, 2012; Noble and Storey, 2001; Sheate et al., 2001*). A range of options is often considered, assessing relative impacts, opportunities, risks, and mitigation possibilities, but the options themselves are typically limited to alternative means to carrying out or implementing the proposed PPP, as opposed to exploring fundamentally different PPPs, futures, or facilitating the creation of new PPPs.

Verheem and Dusik (2011) argue that the traditional EIA-like approach to SEA is characteristic of SEA under the EU Directive, which reinforces a typical project-based approach to assessing and mitigating the potential impacts of PPPs. Emphasis is placed on “the assessment of certain effects of plans and programs on the environment”, promoting a project-like SEA (*Dalal-Clayton and Sadler, 2005: 538*). Similarly,

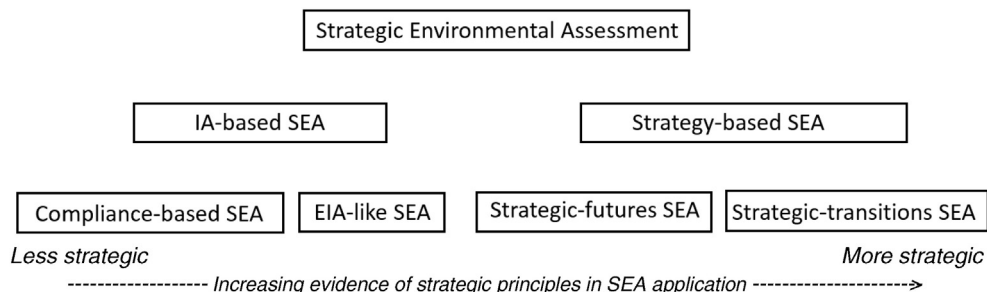


Fig. 1. IA-based and strategy-based conceptualization of SEA.

under the Canadian Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals, an SEA is to be conducted when a proposal is submitted to an individual minister or Cabinet for approval; and implementation of the proposal may result in important environmental effects, either positive or negative (Privy Council Office and CEAA, 2010, sec 3.1). The Directive then goes on to describe a typical 'EIA-like' methodology for conducting the SEA, which includes traditional project-based guidance for assessing impacts based on frequency, duration, magnitude and irreversibility. New PPPs, or strategic directions that fundamentally differ from what is initially proposed, rarely emerge.

4.2. Strategy-based SEA

Strategy-based conceptualizations of SEA are rooted in more recent *strategic thinking* about the role of environmental assessment beyond the scope of traditional impact assessment (Partidário, 2012; Noble, 2008; Bina, 2007; Cherp et al., 2007); establishing strategic direction (s), versus (reactively) appraising or assessing the impacts of proposed PPPs. Emphasis is on PPP formulation, identifying and evaluating alternative futures or development intentions incorporated in PPP initiatives, and determining the necessary institutional context, and transformations, to facilitate desirable outcomes (Noble and Gunn, 2015; Partidário, 2012; Fundingsland Tetlow and Hanusch, 2012; Partidário, 2009). We propose that there exist two basic approaches to strategy-based SEA: strategic futures, and strategic transitions.

4.2.1. Strategic futures

Under the strategic futures approach, SEA is viewed as a means to shape or even formulate strategic initiatives or PPPs, particularly within the context of land use policies or plans in resource regions or sectors. SEA is thus exploratory of a range of alternative futures geared toward achieving desired outcomes, while taking into account the risks, opportunities, and implications of each. Increasingly referred to as 'regional SEA' (Fidler and Noble, 2013; CCME, 2009; Gunn and Noble, 2009), the focus is on devising and assessing the potential implications of alternative future scenarios or development strategies and outcomes; evaluating the potential risks and opportunities associated with each (Cherp et al., 2007; Bina, 2003); and identifying a strategic direction or preferred course of PPP action (CCME, 2009; Noble, 2008). Alternatives or strategic options, incrementally or fundamentally different in nature, are created and explored as possible pathways to help identify future outcomes and choose a preferred strategic direction, considering the consequences and responses under different circumstances. This typically involves some consideration of what may happen, what is most likely to happen based on current PPPs or development trajectories, and what we would prefer to happen from a broader sustainability perspective (Gunn and Noble, 2015). The SEA is often explicitly designed to tier forward, influencing planning actions or other next-level decisions concerning development initiatives, including project EIA. The strategic futures model is based on the notion that SEA is most influential when approached as a "plan shaper" rather than as a plan "fine-tuner" (SEPA, 2011), and in some instances SEA even becomes the planning process and the SEA document the plan itself (Noble, 2008; Retief et al., 2008).

Applications of SEA that reflect the strategic futures model are emerging in international practice, and they are often closely-linked with land use or spatial planning initiatives (Gunn and Noble, 2015); for example, applications to regional transport planning in New Zealand (McGimpsey and Morgan, 2013). In the Canadian context, this approach to SEA has gained considerable traction (Chetkiewicz and Lintner, 2013), often framed as a collaborative initiative and/or adopting spatial and analytical models to explore alternative development futures. Examples include a recent regional SEA to identify alternative industrial growth trajectories and subsequent impacts and management needs in Alberta's oil sands, as a means to shape development under

the provinces existing land use framework and direct future resource development initiatives (ESRD, 2014). The Alberta case was modeled, in part, after an earlier initiative in neighboring Saskatchewan, where SEA was also used to explore alternative land use futures, and help establish a preferred strategic direction for land use and biodiversity conservation, but in this instance the SEA substituted for the lack of a regional planning process and the SEA document became the regional land use plan (Noble, 2008). Common to these initiatives, and characteristic of future-based approaches, is the desire to create more sustainable regional land use policies and plans; integrate stakeholders in the design, evaluation and selection of preferred development futures; ensure the consideration of cumulative environmental effects; and provide strategic oversight to land use and development decisions, particularly project EIA. The majority of SEA applications under the strategic futures model occur external to directive-based SEA – often as ad hoc or one-off assessments (Noble and Gunn, 2015; McGimpsey and Morgan, 2013; Noble, 2008).

4.2.2. Strategic transitions

The strategic transitions approach to SEA has less to do with the assessment of impacts and scenario planning, and even the assessment of PPP options per se, and is focused on the institutional environment surrounding strategic initiatives and the conditions that either enable, or constrain, their success. The basic premise is that, beyond being a valuable tool that aims to integrate environmental issues into PPPs and decisions, SEA can enable a better understanding of the policy and institutional context of strategic initiatives, including PPPs, and influence institutional and governance transitions toward more sustainable outcomes (Partidário, 2012). Beyond the identification and exploration of strategic options or futures, SEA prioritizes the decision-making process, attempting to understand its complexity, and how environmental and sustainability issues can be constructively built into institutional arrangements, governance, and decision making systems to ultimately achieve desired futures (Partidário, 2015). Consider, for example, the need for a new or renewed climate change policy or strategy. SEA could be applied to ensure that the newly proposed policy is in compliance with other policy and regulatory priorities (i.e. compliance-based SEA), or to assess the potential social, economic or emissions-based impacts of the strategy and alternatives for its implementation (i.e. EIA-based SEA). Additionally, SEA can play a more strategic role – influencing the climate change policy development process (i.e. strategic futures SEA); and also identifying opportunities for institutional innovations, and facilitating changes in governance or decision making cultures that are needed to ensure the successful formulation and implementation of the climate change policy or strategy (i.e. strategic transitions SEA).

Strategic-transitions thus represents a significant shift in how SEA is typically approached, focused on assessing the complex institutional arena and governance conditions of decision processes that either enable or constrain successful PPPs, while creating new policy windows of opportunity (Kingdon, 1995) to influence PPP directions and decisions (Partidário, 2015; Partidário, 2012; Fundingsland Tetlow and Hanusch, 2012; Jiliberto, 2011). SEA is conceptualized as a driver of fundamental change in decision making structures and institutional arrangements (Kirchhoff et al., 2011). There are far fewer examples of this model of SEA in practice than either the strategic futures or the traditional IA-based approaches, but there is some evidence of the ability of SEA to serve a much more strategic role than initially conceived. In the case of Portugal's National Transmission Grid (NTG) development plan, 2007, for example, SEA was used to facilitate the planning process and NTG concept design; to identify and evaluate environmental and sustainability issues to guide the plan's technical and strategic options; and to support decisions on solutions for the NTG's evolution (Partidário et al., 2010) – reflecting a strategic futures approach. However, not only did the SEA provide the niche to identify a new design and NTG opportunity not previously considered as part of the NTG planning

process, which was subsequently determined to be the preferred option for expanding the NTG, it also provided a governance framework and guidelines for follow-up of planning, management and monitoring actions — reflecting a strategic transitions approach.

Transitions in policies, society, or technology, are typically non-linear, complex, and multi-level. To adopt Geels (2011) characterization of a multi-level perspective for analyzing transitions toward sustainability, the strategic transitions model of SEA considers the interplay of niches, regimes, and the socio-political landscape:

- Niches are the spaces where innovations in PPPs emerge — ones that may significantly deviate from existing PPPs and norms, and are often the starting point for systemic change to influence strategic direction. SEA is a means to identify and test such innovations, providing ‘proof of concept’ for a strategic initiative, and identifying critical decision windows (see Partidário, 2012) for influencing decisions, and ultimately enabling transitions toward more sustainable options.
- Regimes are the institutional structures that create stability, and consist of the rules, interests, capacities, and competencies of actors, which largely determine the direction and extent of strategic change, or transition, possible. Institutional challenges, more so than data or methods, often pose the most significant constraints to realizing strategic initiatives (Noble and Gunn, 2015; Slunge et al., 2009). SEA is a means to determine the supports and capacities that exist, or that are needed, to successfully implement and sustain strategic initiatives, and the potential barriers or limiting factors.
- The socio-political landscape is the wider exogenous environment, representing those emergent factors or conditions (Cherp et al., 2007) that influence both niches and regimes and thus the longer-term viability of strategic initiatives — for example, political ideologies, societal values, climate change, and macro-economic drivers (see Gachechiladze et al., 2009). SEA is a means to identify and explore potential exogenous variables, and their implications, to ensure the design of more resilient PPPs and strategic initiatives.

The strategic-transitions approach also reflects a deliberative governance approach to SEA, focused on long-term thinking as a framework for shaping short-term policy and initiatives. It facilitates innovations and transformations in PPPs and strategic directions (Cherp et al., 2007), effectively capitalize on emerging opportunities (Caratti et al., 2004; Théritel, 2004). Conceptualized as a transitions management approach (Loorbach, 2010), SEA provides the basis for understanding institutional coordination and capacities and, where relevant, the development of transition arenas, agendas and goals, and the fostering of successful PPPs that can influence the politics of decision-making.

5. Research directions for advancing SEA

There is no one conceptualization of SEA that is ‘best’ for all decision contexts; rather, each approach to SEA is necessary and valuable — each serves a different function, and each has its relative strengths and limitations. Over the past 25 years of SEA development various authors have reported the flexibility of SEA as one of its strengths, referring to SEA as “one concept, multiple forms” (Verheem and Tonk, 2000: 177), an “overarching concept” (Brown and Théritel, 2000: 186), and “a family of approaches” (Dalal-Clayton and Sadler, 2005:12); arguing that as “a framework of activities” SEA is able “to become flexible, diversified and tailor-made to the decision-making process” (Partidário et al., 2008: 219). At the same time, Pope et al. (2013: 3) suggest that “something of a crisis of confidence in SEA practice has become evident in

recent years.” As such, we believe that advancing SEA understanding, and better connecting SEA concepts and principles to practice, requires that research advance on four main fronts — presented here in order of increasing importance.

First, scholars must not lose sight of regulatory practice. We do not see in the near future a wholesale shift in national directives and legislation away from IA-based SEA, and argue that scholars should not completely abandon IA-based conceptualizations of SEA. We agree with Partidário (2015: 1), and others, in that there is a “need for research on strategic thinking in SEA to enable sustainability”, but we argue that the IA-based SEA tradition still holds value. Though deeply rooted in EIA, IA-based conceptualizations of SEA benefit from the ability to draw on well-established institutional arrangements to implement, monitor and enforce SEA processes. Although the impacts of IA-based SEA are often considered short-term and realized, at best, through PPP modification (van Buuren and Nooteboom, 2009), several scholars have argued that IA-based SEA can also *incrementally* direct decision-making toward longer-term sustainable development goals and objectives (Wang et al., 2009; Dalal-Clayton and Sadler, 2005; Théritel and Minas, 2002). Acharibasam and Noble (2014), for example, report some evidence of IA-based SEA helping realize broader institutional goals and objectives beyond the scope of the PPP at hand; stimulating new research directions or needs; and improving an agency’s overall awareness of their actions. The majority of research reporting on IA-based SEA cases, as well as SEA audits (e.g. Bregha, 2011; CESD, 2008), has focused on whether SEA helps achieve the short-term objectives of integrating environmental considerations into a PPP, or enhancing the approval of a PPP. Though important, more empirical research is needed to understand and report the longer-term, indirect impacts or outcomes of SEA beyond the object of assessment — the PPP itself. In doing so, the value of SEA under IA-based approaches may be more apparent to those government agencies and departments charged with its implementation (Acharibasam and Noble, 2014; Bregha, 2011).

Second, a diversity of methods and tools is needed to support the full range of SEA approaches and the variety of PPPs and strategic issues that SEA is intended to address. Geneletti (2015) argues that one of the main gaps in current SEA research is the limited development of analytical methods that are tailored to plans, programs and policies, resulting in SEA analytical content that is described as disappointingly low. SEA research has tended to focus on the relationship of SEA to other types of assessment tools, the analysis of practice through case studies under IA-based SEA systems, the promotion of broad SEA principles, and discussions about the nature of SEA and its flexible nature and adaptive forms (Geneletti, 2015; Pope et al., 2013; Fischer and Onyango, 2012; White and Noble, 2012). Technical guidance on SEA application, however, specifically methods and tools to facilitate its application and ensure SEA’s input to policy and planning processes, has been overly generic, assuming a one-size-fits-all approach, and that those practicing SEA understand what types of methods are best-suited for different approaches to SEA (Noble et al., 2012). We agree with Geneletti (2015), that SEA could benefit from the development of more analytical-based methods; but, considering the multiple approaches to SEA, we further suggest that methods and tools are needed that are suitable to each of the different purposes of SEA, along with appropriate guidance for practitioners on how and when to implement them.

Third, the notion of tiering – SEA informing, if not directing, next-level assessments and decision processes – was once a common theme in the SEA literature (Théritel, 2010; Fischer, 2007; João, 2005; Noble, 2000). In recent years, however, “tiering has been notable by its absence”, leading Pope et al. (2013: 3) to suggest that tiering in SEA “potentially remains an unresolved concern.” Criticized by many as an idealistic conceptualization of how SEA operates within real-world situations (Bina, 2007; Nitz and Brown, 2001; Nooteboom, 2000), we argue that if SEA cannot relate to ‘next-level’ decisions then it remains an isolated exercise — generating *strategic* results with no one to tell (see Parkins, 2011). There are some examples of effective

tiering arrangements in SEA (White and Noble, 2013b; Gachechiladze et al., 2009; Sánchez and Silva-Sánchez, 2008), but it seems to be a forgotten attribute of what makes SEA *strategic*. If SEA of any approach is to be influential in influencing decisions and actions, the notion and practice of tiering in SEA, particularly the institutional arrangements needed to ensure effectively tiered processes, needs to be revisited by the scholarly community.

Finally, and most importantly, the scholarly community must provide clearer direction on how to complement IA-based SEA with a much more strategic approach to SEA — one that helps facilitate strategic innovations in PPP formulation and drives transitions in governance and decision making processes. Inflexible institutional arrangements and the limited capacities for strategic thinking and transformative approaches have long been major challenges to SEA's success (Gunn and Noble, 2015; Gachechiladze et al., 2009). The concept of SEA has indeed evolved from solely an EIA paradigm to a mechanism to influence political change (Fundingsland Tetlow and Hanusch, 2012), but there is resistance to move away from the comfort of EIA thinking (Lobos and Partidário, 2014). Part of the reason for this resistance can be attributed to the lack of understanding of what a more *strategic* approach to SEA looks like, how it can be implemented, and its relationship to policy and strategic decision making processes. SEA needs to be reconceptualized as a more *strategic* process — one that identifies and tests innovations in PPPs, and facilitates the necessary transitions in institutional environments to ensure PPP implementation and long-term success. The problem is that limited attention has been given to understanding the strategic nature of decision-making processes (Jiliberto, 2011); guidance on how SEA relates to the strategic processes it is intended to inform is limited (Noble and Gunn, 2015; Pope et al., 2013); and there are few reported examples of success (Partidário, 2009). Conceptualizing SEA as a process that facilitates strategic transitions is both useful and necessary, and researchers must continue to challenge current governance structures and institutional arrangements, but conceptualization alone is insufficient to ensure SEA's uptake and implementation in the public decision-making arenas. Practical guidance is needed on how SEA can be meaningfully integrated into strategic decision processes, and how strategic decision processes need to adapt to take full advantage of the promises of SEA.

6. Conclusion

Scholarly thinking about the nature and scope of SEA has evolved considerably over the past 25 years; from SEA as an impact assessment tool suitable to PPPs, to SEA as a means to influence the development of strategic initiatives and facilitate innovations and transitions in PPPs, governance systems, and decision processes. Attempts to develop distinct conceptual approaches to understanding and applying SEA have led to multiple interpretations and a diversity of understandings and expectations about what SEA is and what it can and should deliver. This paper revisited the strategic nature of SEA, and suggested a conceptualization of SEA as a multi-faceted and multi-dimensional assessment process. It was suggested that SEA is best conceptualized as a series of approaches operating along a spectrum from *less* to *more* strategic — characterized as IA-based at one end, reflecting the traditions of EIA, and strategy-based at the other, capturing more recent thinking about SEA as a process for driving institutional change and influencing decision making processes.

There is no one approach to SEA that is best for all decision contexts, and research is needed to further advance the effectiveness of the multiple forms that SEA may adopt in different decision contexts. However, realizing the full potential of SEA requires a much more strategic approach than what is currently evident in practice — an approach focused on assessing the complex institutional arena and governance conditions of decision processes that either enable or constrain successful PPPs, while identifying and even creating windows of opportunity to influence PPP directions. Conceptualizing SEA as a strategy-based process

is important to help direct scholarly thinking on the subject, but translating strategy-based SEA into practice requires the development of practical guidance and demonstrated application through empirical-based research.

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