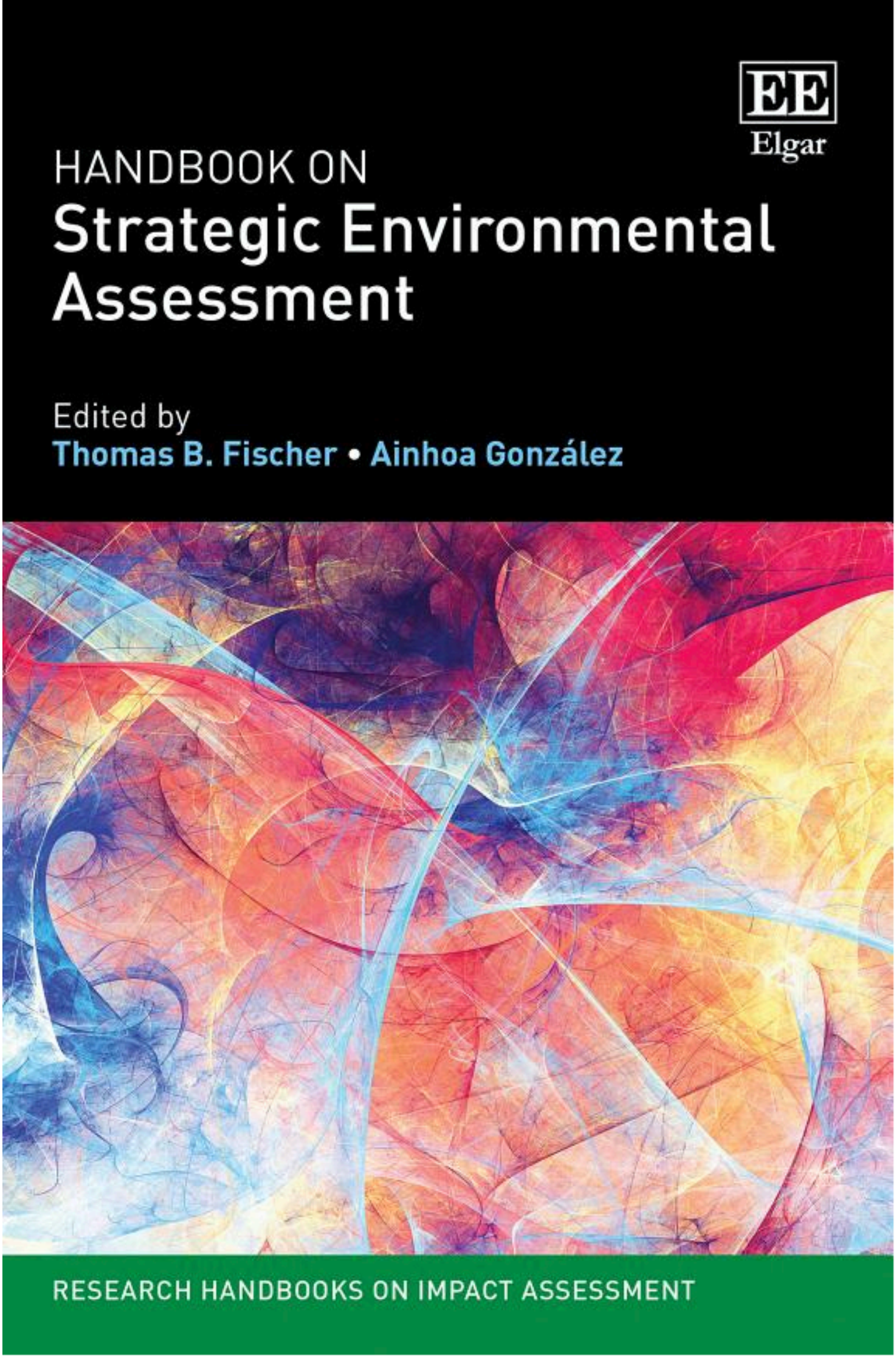
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RESEARCH HANDBOOKS ON IMPACT ASSESSMENT

4. Strategic thinking for sustainability (ST4S) in strategic environmental assessment

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INTRODUCTION

Knowledge, experience and cultural backgrounds, as well as policy and planning practices, or more generally, governance and decision contexts, unavoidably influence and shape the concepts and the applications of Strategic Environmental Assessment (SEA). Academics and professionals of SEA have come to accept that there is not only one form of doing and thinking in SEA, as this book well illustrates.

Generally, all types of SEA share a common notion of a systematic and participatory process that aims to ensure the earlier integration of environmental aspects in decision-making processes, with a fundamental role in promoting sustainable development. But how this environmental integration happens, and how sustainable development is promoted, can vary and bring enormous differences to the practice, and to expected results with the application of SEA. As previously argued, and further developed in subsequent sections, different types of SEA can be distinguished by its origin and evolution but also by the outputs and outcomes that are expected with its application.

The concept of SEA as an instrument led by the assessment of effects is largely the most common understanding of SEA, also known as traditional or conventional SEA (Tetlow & Hanusch, 2012). Expected outcomes include informed decisions on the negative and positive environmental effects that those decisions imply, particularly in relation to the conditions for subsequent development projects. Adequate mitigation measures and a monitoring plan are essential elements in an environmental report, the main output of an effect-based SEA. Often clearance of environmental legal compliance is a key driver for its application. It is visible in most legal frameworks around the world and dominates worldwide applications of SEA, within a spectrum of variations which various chapters in this book appropriately address.

This chapter is about a concept of SEA that is not effects-based and is driven by strategic thinking for sustainability. Imagined a few decades ago (Partidário, 1996, 1999) it has evolved inspired by military and business strategic thinking schools of thought, drawing on complexity and systems theories, as well as on sustainability transitions theory. The Strategic Thinking for Sustainability (ST4S) model was formulated to enable its application in SEA and sustainability assessment (or appraisal) as formal processes, but also in other strategic approaches in policy and planning for sustainability. This chapter is about SEA with an ST4S approach, whose primary rationale is to enhance the strategicness in SEA, a term suggested in Hacking and Guthrie (2008). With ST4S, SEA is built into the conceptualization or design of strategies not to provide environmental information but instead to act as a strategic instrument intended to help stretch views beyond borders, engage perspectives into the long term and stimulate the strategic actions that can move development in the direction of societal priorities for sustainability. Expected outcomes include environmental- and sustainably-driven strategic

options that feed into processes of formation and formulation of initiatives that are the object of strategic decisions.

The objective of this chapter is to present the concept and application of the ST4S model in SEA, exposing its principles and the methodological grounds to pursue a SEA that aims to think strategically about the impacts of development initiatives. The following section elaborates on the rationale behind the conceptualization of the ST4S model; it then presents its main objectives, assumptions and benefits before it addresses the main differences to conventional SEA, and then describes how it works illustrated with examples of its application, before conclusions are drawn.

WHY STRATEGIC THINKING FOR SUSTAINABILITY (ST4S) IN SEA?

Perhaps triggered by the growing attention given to complexity theories (Boulton et al., 2015; Holland, 2014; Homer-Dixon, 2011; Johnson, 2011), there is increased recognition in various disciplinary fields that society, and development processes in general, are confronted with surmounting environmental and social global problems that require innovative approaches and forms to deal with them. As de Haan and Rotmans (2018) argue, unsustainable path dependencies in decision and development practices require a change in how dynamic interactions between social, environmental, institutional, political and economic goals, and underlying values, are being addressed.

The technocratic rationality that influenced standard practices in planning, in project development, and in management in the last century is being questioned for its inadequacy as a standalone practice to deal, on its own, with the complex nature and scale of real problems. Almost two decades ago, Rotmans et al. (2001) argued that persistent problems cannot be solved by current policies and practices and traditional approaches alone, and that sub-optimal solutions can generate even more persistent and complex problems in the long term.

Complexity is acknowledged in the Impact Assessment (IA) literature, clear in the words of Noble (2019, p. 1): "IA is under pressure to respond to increasingly complex environmental challenges". But so is the need for changing practices in IA because of complexity. Bond et al. (2015) highlighted that existing environmental assessment practice is poor at dealing with complexity and uncertainty and that significant innovation in IA is not sparking. Likewise, Retief et al. (2016) recognized that the future is less predictable than what is conventionally assumed in IA practice, and that linear thinking is insufficient to address increased complexity and uncertainty. As Retief et al. said (see also Chapter 8 in this book by Fischer and Retief, 2021), "Using the past to predict the future will become increasingly problematic and challenging especially within a technical rational and/or linear thinking paradigm typically reflected in EA practice to date" (2016, p. 56). These and other IA scholars seem to recognize that conventional IA practice is not sufficient to deal with current global challenges and with the complexity associated with multi-level, multi-sector and multi-actor planning and development (Partidário, 2020).

An important axiom in complexity theory is that complexity requires strategic and systemic thinking (Homer-Dixon, 2011). If current and future IA is about complexity, as apparently suggested by scholars, then we need systemic changes and disruptive innovations to shift the IA regime into a more collaborative, constructive and strategic rationale (Partidário, 2020).

That was the motivation behind earlier proposals to develop a different, non-effects based and more strategic oriented approach in SEA (Partidário, 1996, 1999, 2000). Reasons included: the need to take advantage of the strategic potential of SEA, the capacity of SEA to strategically "influence" development decisions, and the strategic nature of actions to which SEA would apply; the need to deal with systems rather than sites, ensuring the continuity of SEA connection with policy and planning decision-making, instead of persisting on deterministic approaches (plan by plan, programme by programme, site by site) usual in conventional SEA; and the need to explore sustainability pathways when discussing strategic options in decision processes. Research evolved and eventually led to the development of the ST4S model with application to SEA (Partidário, 2012, 2015), which is addressed in this chapter.

A growing number of scholars and practitioners have recognized the need to increase strategicness in IA approaches, particularly in SEA and sustainability assessment (Hacking & Guthrie, 2008; Noble & Nwanekezie, 2017; Stoeglehner, 2019). Several authors have positioned SEA as a social construct instrument to address complex systems, to identify and structure environmental and sustainability problems, as well as to understand how priorities and development objectives are established, and the extent to which the democratization of decision-making is recognized (Cashmore & Axelsson, 2013; Lobos & Partidário, 2014; Noble & Nwanekezie, 2017; Noble et al. 2019; Partidário & Monteiro, 2019).

ST4S in SEA aims to turn SEA into a more engaging and persuasive approach, a leverage to enable changing practices and a positive instrument in transitions for sustainability (Partidário, 2015, 2016, 2020). Scholars in the disciplinary field of sustainability transition (ST) refer to ST as processes of social change that are nonlinear, disruptive, involve systemic shifts and engage structural transformative change instead of a marginal or incremental one (de Haan & Rotmans 2018; Kohler et al., 2019; Loorbach & Rotmans, 2006). The proposed transformative evolution in SEA, with ST4S, is aligned with the theories, and emerging principles of ST, making SEA a creative and constructive sustainability-oriented instrument, driven by benefits rather than losses (Partidário, 2015, 2020).

WHAT IS ST4S IN SEA? OBJECTIVES, ASSUMPTIONS AND BENEFITS

ST4S is a conceptual model that applies strategic thinking in transition processes for sustainability. It is based on complex systems thinking, policy processes, networks of actors, dialogues, knowledge-brokerage, inter-sectoral cooperation, and governance.

ST4S has three very specific objectives (adapted from Partidário, 2012):

1. To promote the integration of sustainability values (including biophysical, social, institutional, political and economic aspects) and establish enabling conditions to welcome future development proposals.
2. To add value to decision making through the analysis of opportunities and risks involved in development options and through the transformation of problems into opportunities.
3. To change mentalities and create a strategic culture around decision-making by promoting inter-institutional cooperation and dialogue, while avoiding conflicts.

In order to meet these objectives, the ST4S model adopts the following assumptions (adapted from Partidário, 2012):

1. Strategic actions are generated through decision cycles, in continuity, strongly associated with policy formation and formulation, and are developed in the context of nonlinear planning and programme development processes.
2. Strategy is characterized by a strong conscience of uncertainty and modifies its actions as a function of emerging unexpected events in its pathway.
3. The complexity of systems demands a whole-system perspective, recognizing the inter-dependencies and self-organizing capacity of its components, and that complex systems are unpredictable, emergent and nonlinear.

Strategy is a core concept in ST4S and is understood as an idea or action that seeks to achieve long-term objectives, led by a vision, but maintaining flexibility to adapt to changing circumstances, framed by the uncertainty that the future implies. It is a concept that originated in military science and that, in general, refers to the search and planning of means to achieve long-term objectives, keeping an eye on the evolution of reality and a constant capacity to adjust to changes (Mintzberg, 1994). Strategic thinking is the related way of thinking requiring great intuition, logic, argumentation and a lot of flexibility to work with complex systems (understanding of systems, links and anchors, and acceptance of uncertainty), a capacity to reorganize the means when losing sight of the objective, to adapt to contextual changes (changing pathways or routes when necessary), and to remain strongly focused on what is really important in a broader context (time, space and perspectives).

For example, SEA in agriculture policies or production schemes or programmes not only needs to address climate change mitigation and adaptation, or the needs and effects on production factors (natural resources such as water and soil, jobs and markets), but it also needs to go largely beyond to assess intended strategies in the context of sustainable food systems, health and livelihood, enhancement of ecosystem services, consumption behaviours, economies of proximity and a number of other aspects, all being context specific.

The motivation for SEA with ST4S is to help set development contexts that can be sustainable. It enables integrated practices in formulating strategies inclusive of environment and sustainability dimensions. With ST4S SEA becomes part of the decision process, generating inputs during the processes of formation and formulation of strategies in policies, plans and programmes (PPP). It is not an additional or independent effort, or something else that needs to be done to ensure compliance with legal requirements. The rationale is based on broad integrative, multi-sectoral, multi-level and interdisciplinary strategic thinking.

The ST4S model establishes the following key propositions for good practice SEA (adapted from Partidário, 2012):

1. SEA is a strategic facilitator of sustainability processes.
2. SEA should ensure focus on the few relevant aspects that really matter.
3. SEA must speak the language of decision-makers to build trust and easy communication.
4. SEA assesses primarily roots causes, and how these are formulated in conceptual processes (policy formation and formulation in planning), and not results.
5. SEA assesses strategies that are implemented through policies, plans and programmes, but SEA needs to act strategically in relation to when and how it supports decision-making.

For SEA to act strategically it must:

- Position itself in a flexible way in relation to the decision-making process, ensuring close interaction and frequent iteration from the first moments of decision, accompanying the decision cycle.
- Integrate relevant biophysical, social, institutional, and economic aspects, maintaining a strategic focus on a few critical issues.
- Assess the opportunities and risks involved in strategic options from an environmental and sustainability point of view, to guide development along pathways of sustainability, formulating guidelines and support for implementation.
- Ensure the active engagement of stakeholders through dialogues and collaborative initiatives throughout the processes, aimed at reducing conflict and achieving win-win outcomes.

The major benefit of ST4S in SEA is that it encourages strategic decision-making to focus attention onto critical decision factors that can be strategic to establish conditions conducive to more environmental and sustainable integrated development. Another benefit of ST4S in SEA is that it facilitates the identification and discussion of development options as directions for sustainability trajectories. Through the promotion of dialogues, it involves decision-makers and the interested stakeholders, including citizens, in prioritizing strategic focus and in assessing the sustainability of strategic decisions, ensuring that the process is equitable, transparent and increases the credibility of decisions. By investing in trust and collaborative processes, and also in communication, speaking the language of decision-makers, SEA can foster political will, encouraging changes in mindsets and creating a more strategic culture in decision-making processes.

Strategic thinking requires expanding space and time boundaries to capture multiple interconnections at different levels. It uses systems lenses to understand networks, path dependencies and lock-ins, to capture priorities and uncertainties and to enable focus on the few aspects that may trigger transitions for sustainability. More than analysing and understanding problems, strategic thinking represents a shift towards advancing solutions for desirable environmental and societal change (Hölscher et al., 2018). This is the rationale that is followed in ST4S. It implies a change in philosophies and in technologies, in individual and in collective behaviours and practices, in building relationships, and in the creation of new knowledge and ways of learning (Köhler et al., 2019; Partidário & Sheate, 2013; Sheate & Partidário, 2010).

WHAT DIFFERENCE DOES ST4S IN SEA MAKE TO CONVENTIONAL SEA?

A core difference between ST4S and conventional approaches to SEA relates to what is expected with SEA (which includes a whole spectrum of possibilities between fulfilling a legal obligation to getting strategic orientations for development), how SEA positions itself in the decision-making process, and how strategic is its role. Table 4.1 summarizes core differences.

Strategies for development are generally contained and implemented through PPP, usually presented as indicative or regulatory documents. These PPP are therefore the repository of strategies or intentions and are made explicit through formulated proposals. ST4S SEA takes the strategies for development as the object of assessment, whether being implicit or explicit.

Table 4.1 Essential differences between conventional SEA and ST4S in SEA

	ST4S in SEA	**Conventional SEA**
Object of assessment	Strategic options in relation to its opportunities and risks for sustainability.	PPP proposals and its alternatives to mitigate environmental (and social) effects.
Positioning	Proactive to PPP conceptualization (formation and formulation of strategies).	Proactive to formal decision on PPPs adoption, but reactive to PPP conceptualization.
Driver	Construction of sustainable futures drawing on the added-value created by natural and social capital, and helping to choose the enabling strategic options.	Integration of environmental issues through analysis and mitigation of the environmental and social effects of proposals.
First things first	Prioritize socio-political strategic issues first to then inform.	Inform technically on relevant environmental (and social) issues first to then prioritize.
Problem analysis	Mostly root causes seeking problem structuring.	Mostly observable symptoms seeking problems solution.
Relation to decision	Continually interact with policy- and plan-making cyclic processes in assessing strategic decisions to enable more sustainable development contexts.	Advice to decision-making on how PPP (or multiple projects) can improve environmental outcomes and what are how to mitigate effects.
Assessment	Based on backcasting led by the awareness of a desired future, with a vision and long-term objectives.	Based on predictions or forecasts built on past evidence, modelled assumptions and anticipated changes.
Participation and engagement	Dialogues with relevant stakeholders to build sustainable futures (priorities, options, opportunities and risks, recommendations).	Public participation for consultation of views and concerns.
Motivation	Create space for opportunities, contexts for development to be sustainable.	Provide environmental information to decisions and report.

These strategies or intentions of development are discussed and assessed long before proposals are formulated or committed in the PPP. As such, SEA becomes a decision facilitator, guiding and supporting the formulation of strategies.

In conventional SEA, the object of assessment is normally the formulated proposals. In cases with a strong forward planning influence a discussion of alternatives can open the debate for a participative formulation of proposals but seldom are the strategies behind the alternative proposals the object of discussion. More often, the alternative proposals are discussed and assessed in relation to subsequent effects rather than in relation to which strategies they represent.

SEA, as with other forms of IA, have always been presented as being proactive to formal final decision on PPP (or project) approval. However, ST4S SEA is proactive not only to approval decision but above all to PPP conceptualization (formation and formulation), therefore before proposals are made. SEA starts a new cycle when strategic objectives are set to help prioritize strategic issues. It uses an integrated and systemic approach to prioritization, searching for root causalities through a rapid diagnosis in dialogues with relevant stakeholders, to collectively find how environmental and sustainability can be an added value to future development. Once what is really important is agreed, based on multiple perspectives, trend analysis can enable deeper observation. Strategic development options, as alternative directions, or strategic pathways, are identified and assessed based on opportunities and risks for sustainability, always in dialogue with relevant stakeholders. Reporting is important for memory purposes, and necessary to meet legal requirements whenever relevant.

Conventional SEA approaches are reactive to PPP conceptualization (formation and formulation). SEA analysis and assessment happens during or after the PPP proposals are formulated. SEA draws on robust environmental baselines, established through scoping analysis that reflect past trends which might be important in the future, to assesses effects of PPP proposals. Public participation is conducted sometimes during scoping and surely once the assessment is completed. SEA is applied each time a PPP is prepared, if legally mandated, to technically assess the PPP, propose mitigation measures and a monitoring plan as conditions for approval. SEA is strongly motivated by the preparation of an environmental report, in compliance with legal requirements.

Routine types of impact assessments, such as EIA and conventional forms of SEA, often focus on observable symptoms, taken as effects, and evaluate the impacts, but tend only to scratch the surface of problems, missing the underlying sources of undesirable change. In strategic thinking assessment, priority should be placed on seeking the root causes of undesirable changes, in line with learnings from sustainable transitions. This entails beginning the search for the causes of impacts by looking from a distance, gaining perspective, revealing connections, and exposing relations of causality.

This means that thinking strategically about environmental issues inevitably engages sustainability, even when the understanding of environment is narrow. The biophysical patterns of change that are captured in conventional SEA as effects and impacts, in fact express political actions, social priorities, economic drivers and governance tensions as root causes, all of which, unless duly addressed, will persist, as well as their consequences. Those indirect, root causes, are the focus of attention in SEA with an ST4S approach.

The role of SEA in decision-making processes is consequently different, arguably SEA with ST4S radically shifts its position and becomes opposite to conventional SEA (Figure 4.1). In conventional SEA, the driver is the assessment of the effects of development on the environment, following a standard sequence of activities. In ST4S SEA, the driver is the establishment of enabling conditions to welcome future development, triggered by environmental and social values which are taken as forms of capital that bring value to development. SEA with ST4S assesses the opportunities and risks of strategic options for a sustainable development. Figure 4.1 illustrates this opposite logic and approach between conventional SEA and ST4S SEA.

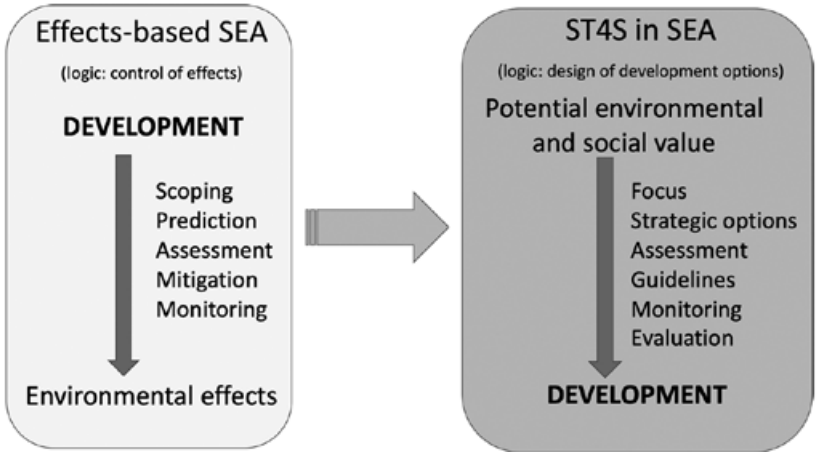

Figure 4.1 Opposite logics in SEA following conventional and ST4S approaches

Given the above, conventional SEA is perhaps more adequate with more operational plans or programmes that do not entail a strategic discussion, or even when proposals aggregate sets of projects or large infrastructures (see Chapter 11 in this book by Faith-Ell and Fischer, 2021). It can adopt a narrower or a broader understanding of the environment, more biophysical or inclusive of social and, sometimes, economic aspects and be more or less connected to sustainability. Conventional SEA expected outcomes include advice to decision-makers on whether PPP proposals, normally closely connected to development projects, could improve their environmental and sustainability outcomes, for which mitigation measures are suggested.

With ST4S, SEA offers the capacity to act as an input, a facilitator in helping to structure environmental and sustainability problems to include them in a constructive way, setting societal priorities, designing the development concept, acting with its strategic role in relation to policies and planning development (Partidário, 2000, 2012). As a strategic decision facilitator, SEA plays a constructive rather than informative role when supporting the decision processes. It aims at focusing attention onto what is really important, as well as on the choice of more sustainable options, that is, those with less risks and more opportunities to sustainability processes, and of guidelines to accompany the implementation of strategic decisions.

ST4S IN SEA: HOW DOES IT WORK?

With ST4S, the leading purpose of SEA is to help create contexts for sustainable development. For that purpose, a good understanding of the context is needed to enable strategic focus by appropriately identifying and addressing problems, rather than symptoms, and to help find environmental and sustainable viable options as pathways that will enable achieving strategic objectives. It must strive to use the language of decision-makers to improve communication, and also with all stakeholders. It further aims to formulate guidelines and recommendations to overview cyclical implementation.

Methodologically, the ST4S model must be anchored in the cyclical decision process of policy- and plan-making. Such processes are continuous, without a start or end point, during which there are fundamental moments of reflection, diagnosis, choices, discussion, and decisions (Feldman & Khademian, 2008; Nitz & Brown, 2001; UNEP, 2009). Often characterized by iterative dynamics, sometimes quite complex, policy- and plan-making are very dependent on decision-making cultures. SEA with an ST4S model approach seeks to integrate environmental and sustainability into these cyclical decision processes.

The assessment of development strategies should include *ex ante* assessment and *ex post* evaluation. An *ex ante* assessment targets strategic options as future development pathways. It assesses opportunities and risks of choices between alternative strategic pathways, considering stakeholders' visions, perspectives and expectations (intra- and inter-generational), context specificities, trends and uncertainties. An *ex post* evaluation is sought to evaluate the environmental and sustainability positive and negative impacts of the actions undertaken, to decide on the possible need to adopt new actions, or review existing ones to adapt or better use them. The evaluation should be made in relation to a specific strategic assessment benchmark for each case, which includes environmental and sustainability policies. The involvement of relevant actors is vital to ensure multiple values and different perspectives to be acknowledged.

The methodology for SEA using ST4S is structured in three non-linear fundamental phases, presented schematically in Figure 4.2.

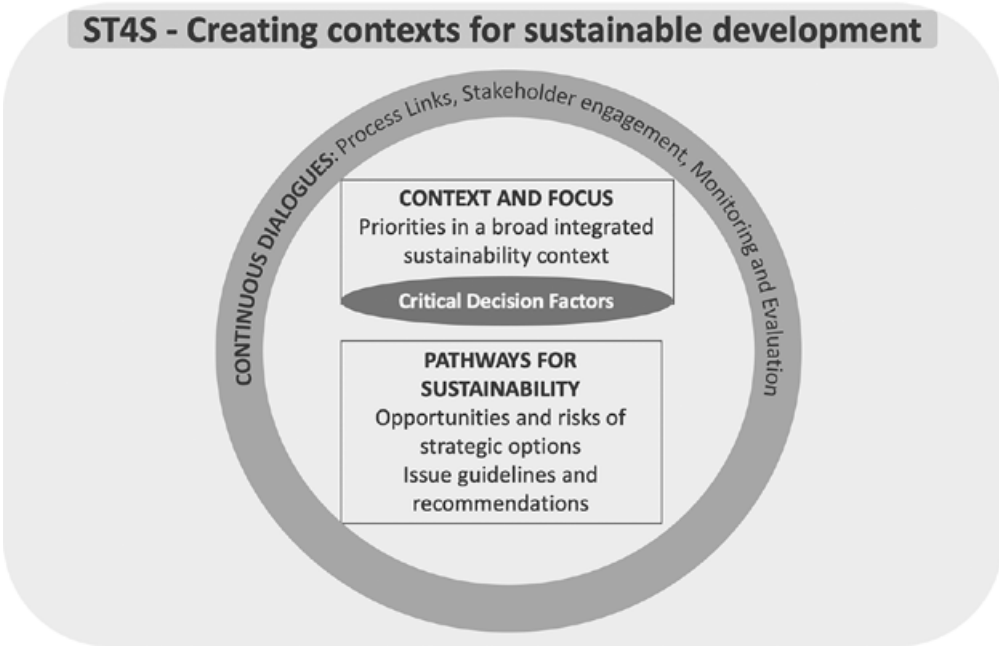

Figure 4.2 ST4S methodology in three non-linear stages

Context and Strategic Focus Phase

The purpose of the context and strategic focus phase is to ensure that SEA focuses only on what matters, and that it is designed to suit each specific context. Through prioritization, expressed in Critical Decision Factors, a strategic focus in the assessment is enabled.

The notion of Critical Decision Factors (CDF) is the central concept and tool in the ST4S model. CDF are key integrated themes that structure the strategic analysis, assessment and evaluation. CDF result from an effort of synthesis and prioritization of what is important to increase the sustainability of the PPP strategies to be implemented (Figure 4.3). They are identified mainly through observation and analysis of context and dialogue with relevant stakeholders, to consider multiple perspectives and aspirations. CDFs are considered success factors in a strategic decision and act as windows of observation.

The definition of CDF is very context-specific. Therefore, it is important to understand well the context of development and assessment, characterized by three fundamental dimensions: (1) The governance framework, or the identification of responsibilities, competencies, and inter-relationships among the actors involved; (2) The strategic reference framework, or the core macro-policies whose objectives and goals must be considered to provide a reference for the strategic assessment; (3) The problem framework, which structures key concerns, includes environmental and sustainability aspects, indicating their condition as constraints, as sensitivities or weaknesses, and also as potentialities, as well as the driving forces responsible for generating long-term changes.

Getting focused therefore starts with understanding the end-point, formulated as the vision, goals and strategic objectives of development, and what is the decision-making problem,

Figure 4.3 *The diamond of the ST4S methodology or how to reach to Critical Decision Factors*

Source: Partidário (2012).

which must be well-structured. With these elements, through dialogues with stakeholders, prioritization of what is strategically relevant for success is enabled. Therefore, understanding the context and prioritizing what matters, before supporting information on trend analysis is collected, is fundamental to establishing the strategic focus and enabling successful SEA. An assessment framework is established with few assessment criteria anchored in each CDF, supported by a small number of relevant indicators that will be used in trend analysis. A focus report, including the assessment framework and how it was established, is a useful reference for the next stage.

Assess Pathways for Sustainability Phase

Strategic options are alternative pathways to reach the strategic objectives (where to go), desirably leading to a future grounded in a sustainability vision. This phase, or assessing pathways for sustainability involves analysing the means on how to get to that vision, what is possible compared to what is desirable, if feasible by considering different scenarios, and then finding the actions that, according to priorities, will facilitate:

– achieving objectives of the Plan/Strategy;
– achieving environmental and sustainability objectives;
– contributing to solving problems; and
– finding guidelines or recommendations that will guide them.

This phase refers to the assessment of strategic options that will allow the achievement of sustainability objectives. The purpose is to assess the opportunities and risks of strategic options, to be able to find which can be pathways to sustainability, and establish guidelines or recommendations that support its implementation. This phase is fundamental in supporting the processes of formulation of policies and strategic priorities in planning (for example, the definition of the territorial model in spatial planning).

Most strategic pathways for sustainability are not necessarily straightforward, so the role of SEA in discussing strategic options is crucial and should be conducted in a strong interrelationship between policy formulation, planning and strategic assessment teams. The involvement of stakeholders in the identification and assessment of strategic options is crucial, through appropriate communication processes and techniques, and more inclusive engagement and collaboration. The assessment of opportunities and risks can and should be carried out several times, at iterative moments, with the strategic discussion of options.

In this phase, SEA deepens the problem framework defined in the Context and Focus phase, to analyse critical trends, as well as the strengths and weaknesses of the system, but also threats and opportunities to development. This trend analysis, carried out as a strategic diagnosis using the assessment criteria and indicators defined under each CDF, will support the assessment of opportunities and risks. It aims to analyse what causes change and why change happened, and what can change in the face of driving forces and intended strategies, but avoids unnecessary details.

The development of scenarios as imagined futures represents variable outcomes for strategic options. Scenarios should be developed by planning teams as part of the policy formulation or planning process, to imagine different development futures. Depending on how the scenarios are used, it may be useful to assess the scenarios themselves in terms of the opportunities and risks they represent for the sustainability vision. The SEA needs to be prepared to contribute to this strategic discussion, with relevant input into key decision windows.

Guidelines are planning, management, governance and monitoring conditions or orientations relevant to the success of the implementation of strategies being assessed. They seek to avoid or reduce risks and better exploit opportunities in processes of transition to sustainability. Guidelines are essential in PPP follow-up, supported by monitoring indicators to confirm the effectiveness of guidelines, how they are implemented, as well as the definition of responsibilities and deadlines in their implementation. Guidelines are formulated to support decision-making and may include recommendations for institutional adjustments or new regulations, for new plans or programmes, for project EIA or for any other type of measures or policy choices that may be relevant.

In short, the strategic assessment addresses the opportunities and risks of strategic development options, considering the CDF. It can be based on a trend analysis when time, and available data, permits. In view of found opportunities and risks, guidelines for planning, management and monitoring are defined which set the basis for a follow-up programme, including an institutional governance framework to define levels of institutional involvement and responsibility in the implementation of strategies. A report will record the results of the assessment for communication and memory purpose, or to meet legal requirements when appropriate.

Continuous Dialogues Phase

An ongoing phase of inter-stakeholder dialogues and follow-up should run continuously, throughout the implementation of strategies included in PPPs. The purpose is for SEA to maintain its collaborative inputs linked to the decision-making process, throughout the decision cycle, and to connect to the subsequent initial stages of policy formulation or planning in a new decision cycle. Knowledge brokerage has been found to be quite adequate to enable different types of knowledges to be shared, recognized, and to be collaborative.

In this continuous phase, dialogues between SEA and development processes, but also with stakeholders, should be done through adequate communication routes. Follow-up, through monitoring, evaluation, and communication, serves implementation control and uncertainty management, to adjust to emerging unexpected situations in a continuous way. It should be established as a routine act in a process of strategic environmental and sustainability assessment, systematically linked to the formulation of PPPs and involving the relevant actors. With this continuous dialogues phase, SEA lives beyond the formal preparation and approval moment of PPP in the decision cycle.

This ST4S approach has been applied to several SEAs in Portugal and in other countries in the world, namely Brazil, Chile, Peru, Mozambique and Indonesia. Two examples are offered in Boxes 4.1 and 4.2 as illustrations.

BOX 4.1 SEA OF THE SINTRA MUNICIPAL MASTER PLAN – CONTEXT OF APPLICATION OF SEA

Application of SEA with ST4S to municipal spatial planning.

PURPOSE OF SEA

To facilitate the process of formulating the Sintra Municipal Master Plan from the outset, contributing to the planning process, with strategic inputs to plan formation and formulation, considering the perspectives of different actors, to ensure the integration of the environmental and sustainability dimension in the search for and evaluation of spatial planning strategic development options.

OPPORTUNITY OF THE INSTRUMENT

Between 2014 and 2018 this SEA was fully integrated with the planning process and started right after the strategic objectives of the Plan were approved. It thus had the possibility of influencing various strategic decisions. Actually the Plan's strategic objectives were revised in light of the SEA inputs following the focus stage. Also, environmental priorities were integrated into the development of the Plan's strategic axes and contributed to the design of strategic options. Strategic focus was developed and strategic options were identified in working sessions with a wide range of agents with interest in the municipality of Sintra.

RESULTS

To ensure strategic focus, four CDF were adopted: governance, territory diversity, value chain and municipal identity. These contribute to environmental and sustainability driven planning policies, namely the promotion of activities that value natural resources, landscape, historical nuclei, coastal edge and endogenous resources, among others.

The process of defining and assessing strategic options was an enriching collaborative process towards the achievement of strategic directions in the territorial development model. The set of strategic options finally adopted reflect municipal priorities with environmental and sustainability objectives. Municipal policies that stand out include the integration of ecosystem services foreseen in the Plan, as well as climate change adaptation measures.

SEA alerted for situations of strategic risk, namely concerning illegally developed urban areas in need of conversion (and alternative financing to solve the problem at the origin), as well as modal shift from individual to public transport, within energy and climate change policies, foreseen in the Sintra Mobility and Transport Plan but lacking clear strategic orientation for this modal shift to become effective.

The review process of the Municipal Plan stands out for the importance given to the involvement and participation of the public with the promotion of various participatory moments to continue during the implementation of the Plan. Other promotional strategies for the environment and sustainability in the Plan include the innovation created with the concept of building titles to enable enhancing the value of the environment and of ecological spaces with interest, redirecting the planning of built space towards other appropriate areas. Equally important is the orientation of the Plan towards attracting public and private investments, promoting the development of economic activities that value endogenous resources and ecological systems, for the enjoyment of the population and for a tourism development with identity, which, if this strategic orientation is maintained, will mean an increase in municipal value from an environmental and sustainability point of view.

Source: Câmara Municipal de Sintra (2019).

More information at https://cm-sintra.pt/territorial/plano-diretor-municipal/arq-revisao-do-pdm/avaliacao-ambiental-estrategica.

BOX 4.2 SEA OF CHILE'S NATIONAL ENERGY POLICY – CONTEXT OF APPLICATION OF SEA

Application of SEA with ST4S to sectorial policy formulation.

PURPOSE OF SEA

To facilitate the process of formulating the 2050 Energy Strategy and Policy from the outset, considering the perspectives of different actors, to ensure the integration of the environmental and sustainability dimension in the search for and evaluation of policy strategic options.

OPPORTUNITY OF THE INSTRUMENT

Between 2014 and 2015, SEA contributed to an energy policy with a strong sustainability character, integrating the environmental, productive, social and territorial aspects; SEA was strategic and systemic as it focused on critical development issues, the existing relationships between them, addressing these issues with a long-term perspective; SEA delivered legitimate outcomes because it strengthens the participation of various actors in the formulation of the policy, with a multisectoral and multivariable perspective.

RESULTS

SEA was carried out in parallel with the entire process of energy policy formulation, through process interactions, and contemplated four stages:

- Focus of the SEA, definition of the object of assessment, the environmental objectives and the assessment framework, characterizing the decision problem and identifying CDF.
- Strategic Environmental diagnosis, using assessment criteria and indicators for each of the CDF.
- Clear identification of strategic energy development options considered in the policy formulation, and assessment of opportunities and risks of strategic options for sustainability.
- Formulation of guidelines to address risks and take advantage of opportunities with a strategic and sustainability focus, and development of follow-up recommendations. There was an iterative and parallel process dedicated to the participation of key actors.

The SEA identified 20 key themes organized in four CDFs: environmental conservation and ecosystem services; energy and territory; social benefits; and innovation in energy. The risks and opportunities for strategic decisions on emission reduction, energy poverty reduction, energy efficiency, climate change adaptation, security of energy supply, diversification of generating sources and articulation of decisions between national, regional and local levels were assessed, and strategic options on externalities regulation, energy source targets, energy efficiency targets and integration between energy development and local development were considered.

Source: Ministerio de Energía (2015).

More information at http://www.energia.gob.cl/sobre-el-ministerio/expediente-administrativo and http://www.minenergia.cl/archivos_bajar/ucom/publicaciones/EAE4_web.pdf.

FINAL REMARKS

Strategic thinking for sustainability must start from the future. It invites the identification of a vision, what we want to reach, and then backcasts to find the actions needed to fill in the gap between where we are and where we want to be. A broad and integrated perspective is fundamental to be able to pursue strategic thinking, stretching views beyond conventional limits, enabling focus on the few aspects that can trigger transitions for sustainability, adapted to each context.

Strategic thinking must be focused on what really matters. Given the complexity of processes and challenges, the multiple scales (temporal and spatial) and perspectives, unless a strong focus is adopted it is likely that relevant strategic aspects may be lost in an ocean of issues, many of which may only reveal symptoms of problems, and short-term, immediate priorities. One reason for advancing ST4S is to promote the very nature and capacity of SEA as a strategic instrument and help clarify what SEA can be and what it can deliver.

To be strategic is also to be ready to adjust planned pathways to changing circumstances. It recognizes that uncertainty is part of the picture and that the aimed targets may change, smoothly or disruptively. Keeping flexibility is therefore a major condition, to adjust to emerging and unexpected events that will change established routines. We learn from the literature that to address the complexity of environmental and developmental challenges we need to pursue nonlinear, disruptive, systemic shifts that engage constructive transformative changes instead of marginal or incremental ones.

ST4S is there to create space for opportunities, for learning and for reflection. We need SEA to be constructive of better development, more engaging, and persuasive of the urgency of integrating nature and people's values in development decisions. SEA needs to take proactivity, and strategic and systemic thinking, more seriously to cope with those increasing levels of complexity and uncertainty that feature in current and future challenges. Knowing that radical change is hard but incremental change insufficient, the ST4S methodology is an alternative approach to SEA conceived to enable that endeavour.

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