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Chapter 6. SEA Procedures and Methods: The importance of baseline, political and pragmatic contexts

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INTRODUCTION

This Chapter critically examines procedures and methods that are applied in SEA, identifying strengths and weaknesses of analytical tools, what is missing and what we need to do better or differently. SEA is understood by SEA academics and practitioners as a process rather than solely a technique (Bina, 2007). As such, it involves stakeholders with interests and power, and therefore SEA methods cannot be discussed as being dissociated from the context in which they are applied. After an initial section on the background and state of the art of methods and procedures in SEA, the Chapter focuses on three main themes: baseline, political, and pragmatic contexts. These themes were an overriding matter at the SEA Conference in Prague. Through these themes the Chapter discusses how adaptive and robust SEA can be in analyzing the impacts and issues that matter.

BACKGROUND - THE STATE OF THE ART

There are many methods that can be used for the different stages of the SEA process. Box 6.1 lists 26 different SEA methods derived from a survey of SEA methods carried out by Noble et al (2012) and an overview of SEA tools by Thérivel and Wood (2005). According to Thérivel and Wood (2005, p. 362) a good SEA tool "can be carried out quickly, help to improve the strategic action, focus on key impacts, cope with uncertainty, take account of cumulative and indirect impacts, suggest and compare alternatives, are robust and are easily understandable". Thérivel and Wood (2005) classify the 12 SEA tools they describe in terms of data and resource requirements. Matrices, for example, require few resources and can cope with restricted data availability, which may explain their popularity.

Box 6.1 SEA methods according to: a. Noble et al, 2012 - methods identified by expert respondents; b. Noble et al, 2012 – methods identified in SEA documents; c. Thérivel and Wood, 2005. The order of the first group is according to amount of use identified in SEA documents by Noble et al, 2012.
[box]

Expert judgment/workshops (a & b & c)
Literature/case review (a & b)
Public workshops/consultation (a & b & c)
Ad hoc (lessons from elsewhere) (a & b)
GIS/mapping applications (a & b & c)
Matrices (a & b and c)
Trends analysis/extrapolation (a & b)
Risk assessment (a & b & c)
Website/newsletter (b)
Landscape assessment (b)
Systems modelling (a & b)
Participant funding (b)
Scenario analysis/modelling (a & b)
Weighting/scoring (a & b)
Cost–benefit analysis (a & b)
Other economic valuation (a & b)
Sensitivity analysis (b)
Sustainability assessment (b)
Statistical hypothesis testing (a & b)

Analysis of existing data sets (a)
Clustering focal themes (a)
Outcomes-based analysis (a)

Compatibility appraisal (c)
Quality of life assessment (c)
Land use partitioning analysis (c)
Multi-criteria analysis (c)
[box ends]

For their survey of current methods and guidance for SEA Noble et al (2012) surveyed and interviewed 34 Canadian and 11 international practitioners, and reviewed methods used in 14 SEA or SEA-like reports. As indicated in Box 6.1, Noble et al (2012) found that that the most commonly used SEA method was expert judgment (both in the case of participant survey and SEA documentation review). Interestingly, they found that GIS and mapping applications were among the most used methods and, both in the case of the participant survey and the SEA documentation review, GIS was being used more than matrices.

This Chapter argues that in the past decade, since the SEA Directive, the main trends and developments with regards to SEA procedures and methods has been greater use in quantitative analysis, such as using models in scenario development, and an increased interest in the use of GIS and spatial analysis. There is now greater experience and capacity, there are more case studies available and there is better environmental baseline information. There has been an effort by SEA practitioners to shift from qualitative, expert-based judgments (often in the forms of matrices) to more quantitative assessment methods, including spatial analysis, GIS, ecological modeling and quantification of ecosystem services. Although more research is needed in these areas, this Chapter describes and evaluates key advances and points to persistent areas of weakness. The Chapter relies heavily on the material presented at SEA Prague in 2011, but it also includes a broader discussion focusing on emerging recent practice and future prospects. The first theme to be covered is the baseline context.

BASELINE CONTEXT

One of the key questions regarding the baseline context is how to define and consider limits of acceptable change in SEA. Thresholds are particularly challenging when considering cumulative effects, climate change and other broad scale environmental threats. One tool that may help with preventative environmental protection, and is now becoming more widely applied in SEA, is vulnerability analysis. According to Turner et al (2003) vulnerability depends both on the characteristics of the hazard or possible impact and the sensitivity and resilience of the environment. Vulnerability analysis is therefore an approach where environmental qualities are assessed from the viewpoint of potential threats resulting from planned actions or activities. As a tool in SEA, vulnerability analysis can be applied at various levels of spatial planning (Marušič and Mlakar, 2004): at the beginning of the planning process, as a mid-term evaluation tool, or at the end for comparing and choosing alternative options. An important benefit of using vulnerability analysis in SEA is that it enables consideration of spatial distribution of impacts.

At the SEA Conference in Prague, Alenka Cof (University of Ljubljana, Slovenia) proposed the application of vulnerability analysis in the SEA for the spatial plan of the Municipality Ig in Slovenia.

The Municipality Ig is an interesting case study because 99% of the municipality area (99 km^2) is protected by some conservation regime (e.g. Natura 2000, ecologically important areas, nature protected areas, water conservation areas, prime agricultural land) which makes it challenging with regards to development proposals. The evaluation of the impacts of the proposed land use (housing, public services, industrial zone, agriculture, forestry, infrastructure, roads, airport, mineral extraction, hippodrome, military area, and green areas) was undertaken with reference to a vulnerability value. In cases where environmental thresholds did not exist, the judgment about the acceptability of impacts was taken on the basis of comparison between the vulnerability of the proposed site with alternative sites. Where vulnerability analysis indicated potentially very high impact associated with a proposed action or land use, the following steps were proposed:

1 Search for an alternative site with lower vulnerability (and proposal for a change of plan).
2 If no such site could be found, then technical conditions and mitigation measures were proposed to reduce the environmental damage.
3 If neither of the two was possible, the proposed action or land use was cancelled.

Vulnerability in landscape and spatial planning is defined as 'vulnerability to impact' meaning the potential negative impact of planned activities on natural and human-made environmental values (Steinitz, 1990). Vulnerability depends on the characteristics of a stressor (human intervention) and the environment, and supports the search for an optimal solution. In this context, vulnerability analysis functions as an integrating and conflict-solving tool since it considers a whole range of diverse environmental components, supports dialog between stakeholders, can embrace all interests (natural, social, economic and political) and evaluate their consequences, and thus supports cross-sectoral or comprehensive planning.

While vulnerability analysis puts a strong emphasis on the protection of the environment with regards to negative impacts, it does not identify enhancement opportunities. João et al (2011) argue for the need to emphasize enhancement in all forms of impact assessment. Enhancement, however, poses a further challenge with regards to baseline. For enhancement, data will need to be collected not only on what 'is there' but also on what 'can be there'. Normally, data collection for mitigation involves collecting information on existing resources (baseline) that need protection. If information is needed on what 'can be there' then a new approach to baseline data collection will be needed that considers aspirations (in addition to trends and thresholds), and supports enhancement of positive impacts.

Approaches are needed that combine both the protection and the enhancement of key ecosystem functions, such as through the integration of ecosystem services into SEA of spatial planning (Geneletti, 2013a; Rega and Spaziante, 2013). A study conducted for spatial planning in southern Chile illustrated a method to improve the consideration of ecosystem services in SEA (Geneletti, 2011, 2013b). First, the selection of key ecosystem services was performed, by identifying the

services upon which the plan depends and the services that the plan is bound to affect. Opportunities and constraints related to the conservation and use of ecosystem services were addressed. This was done by generating graphs and maps of service production, as well as determining the benefits for different groups of stakeholders. Subsequently, proposals for land use zoning policies were compared by generating future land use scenarios, and modeling the associated flows of ecosystem services. This allowed for the unveiling of trade-offs between ecosystem services and their beneficiaries (who wins and who loses).

Spatial plan policies typically change the relative mix of ecosystem services within a region, by trading-off the increase in one service with decrease in another. However, services are provided and used at different spatial scales, and those scales may be broader than the boundaries of a particular planning effort (Geneletti, 2011). Consequently, SEA must also seek to understand the degree of dependency from outside conditions that characterize the services that are required to achieve the objectives of the plan, or that the plan will affect. This enables identifying other relevant plans and policies at the different tiers (e.g. national, regional, local), whose contents and regulations must be taken into account during SEA to exploit synergies and reduce inconsistencies (Geneletti, 2011). The results of these analyses were used by Geneletti (2013b) to suggest revisions and mitigations and contribute to the design of the final spatial plan. Mitigations may include measures to limit the negative impacts of the plan on ecosystem services, but also measures directed at reducing the dependency of the plan's objectives from ecosystem services that may become scarce in the future.

Finally, a significant challenge that potentially affects SEA procedure is the need to assess spatial strategies in uncertain contexts. Changes in land use have intentional or unintentional effects on the quality of the environment, the provision of ecosystem services, and human well-being (MA, 2005; Schwarz et al, 2011). Spatial plans at local and regional level play a key role in driving future land use changes, by constraining or promoting land development. However, the extent to which different land use decisions will cope with future changes and their environmental consequences is highly uncertain (Peterson et al, 2003; Jones et al, 2005).

To incorporate a systematic analysis of uncertainty in the context of policy advice, the integration of scenario analysis into SEA has been proposed (Duinker and Greig, 2007; Zhu et al, 2011). Land use scenarios, in particular, have become a promising tool when SEA is applied to spatial planning, giving the opportunity to map and model possible land use patterns according to specific assumptions on the main land use decisions (Verburg et al, 2004; Koomen et al, 2011; Geneletti, 2012). However, land use scenarios for spatial planning have often been simulated and assessed through complex models (Verburg et al, 2002; de Nijs et al, 2004; Petrov et al, 2009), limiting their applicability into practical spatial planning and SEA (Nuissl et al, 2009). SEA would benefit from systematic and user-friendly approaches supporting how to deal with critical events and uncertain decision-making conditions, instead of making exact predictions.

Addressing this need, Bragagnolo and Geneletti (2013) showed a method for comparing the environmental performance of spatial planning options under different future conditions, resulting from alternative implementation of key sectoral decisions. The method, which used GIS, combined the development of a series of land use zoning options implementable under different future scenarios with the assessment of their effects through a set of environmental indicators. The method was applied to a study area located in the peri-urban region of Milan, in northern Italy, that represents a complex planning context with critical environmental issues (e.g. urban sprawl, air quality) and cross-cutting sectoral policies. They found that important ecosystem services might be lost as a consequence of the lack of coordination between spatial and sectoral decisions, showing the benefits of using SEA for assessing the consistency of the policy context. Bragagnolo and Geneletti's approach provided insights that can be useful to support an earlier consideration of the uncertainty characterizing future land use decisions and related effects. This is particularly important in the context of SEA, since considering a range of plausible future situations and related effects can contribute to improving the understanding of how future land uses will be influenced by different decisions. In turn, this increases the willingness of decision makers to consider a range of relevant issues and responses more effectively. To strength the role of SEA in fostering consultation, communication and interaction between relevant authorities, public and decision makers, the authors suggest the integration of participatory techniques into their methodology in order to develop scenarios (e.g. through narrative storylines).

Finally, and with regards to resilience, according to Slootweg and Jones (2011, p. 267) "the characteristics of SEA provide an ideal vehicle for applying resilience thinking in practice" as SEA can help identify the key issues related to sustainability of socio-ecological systems. Resilience is normally thought of as the ability of a system to absorb disturbance and return to its original state. However, a degraded or inequitable "original state" might not be a desired situation and a disturbance might actually be beneficial as expressed by Folke (2006, p. 253): "Disturbance has the potential to create opportunity for doing new things, for innovation and for development". This links to the concept of enhancement (João et al, 2011), using impact assessment in order to accentuate the positive.

POLITICAL CONTEXT

Closely linked to baseline issues is the political context. For example, a new approach to baseline data collection that considers aspirations and supports enhancement will be influenced by political wishes and the public participation carried out to determine them. The spatial and temporal context considered will also affect SEA results (see João, 2007) and this is highly dependent on the political (short-term or long-term) vision. One recurrent theme at the SEA Conference in Prague in 2011, congruent with the political context, was on how 'to give teeth to SEA'. One of the sessions on SEA

procedures and methods included a 'snowball' discussion on this topic. Box 6.2 shows the results of that discussion among international SEA practitioners.

Box 6.2 How to give teeth to SEA (mainly from an SEA procedures and methods perspective).
[box]

- Integrate SEA better with PPP-making process: not an 'add-in' late in the PPP-making process.
- Link to thresholds – reduce the freedom of choice of decision-makers if these are violated.
- Engage public at an early stage.
- Be very transparent about reasons for decisions/mitigations – include a schedule of commitments within the plan and post-adoption statement.
- Quality criteria.
- SEA process needs buy in from management and planning authorities.
- Prepare post-adoption statements early, alongside the finalised plan (i.e. it is endorsed by committee/decision-maker at the same time).
- Engagement and scrutiny of external experts.
- Human resources to implement SEA.

[box ends]
Key: PPP = Policies, Plans and Programmes.

As can be seen in Box 6.2, one of the suggestions is that the SEA process needs 'buy-in' from management and planning authorities. This is also a key recommendation from the first review of Scottish SEA practice after 10 years of experience:

> There is a need to significantly improve the buy-in to SEA beyond the immediate SEA community. In particular, improving awareness of and commitment to the practical benefits of SEA for robust policy development among senior decision-makers is a fundamental pre-requisite to improve effectiveness and proportionality (SEPA et al, 2011, p. 21).

The need to enthuse decision makers is therefore critical. Partidário (personal communication, 31 July 2012) suggests that her experience with SEA has been based on a few strong premises: always turn problems into opportunities (making it an added-value to decision-making) and be strongly focused, integrated and sustainability-oriented. This relates to the notion of strategically related approaches in environmental assessment discussed by Partidário (2000) as well as many other commentators. Box 6.3 presents a case study that illustrates these principles.

Box 6.3 Case study on the importance of SEA as value-addition to decision making and for SEA to be sustainability-oriented (as recounted by Dr Maria Partidário).
[box]

The Portuguese National Transmission Grid (NTG) investment plan is an example of how SEA is seen by the national transmission system operator (Rede Eléctrica Nacional - REN) as an added-value to the electric system. This plan sets the NTG evolution and development for the next 10 years and is revised every three years, which is an important feature of its strategic character. When REN asked for my help with the SEA of their investment plan, their initial motivation was the legal requirement, following the EU Directive, and their perception was that of a big EIA for a Plan, provided the specific requirements. During the first six months I had several meetings with the Director of Planning at REN, and also with the Director of Operations, who has extensive experience with project EIA. Those first six months were perhaps the most important investment I have made in the SEA: we learned about each other and we developed a relation of trust. I learned not only about the electricity system but also about REN's aims, drivers, commitments and restrictions in planning the grid every three years. They learned that SEA could be different from EIA, that SEA could help them find ways to answer many of their questions, and offer a framework to integrate different social and environmental values that were not a usual part of their core business. The SEA was focused on three Critical Decision Factors (CDF): energy, fauna and spatial planning. With these windows of observations we have done the SEA (REN/IST, 2008), considered future options and assessed them strategically, maintained dialogues with stakeholders, raised and discussed the most important issues and helped the Plan to go ahead in a more environmentally effective manner. Follow-up happened in between the first two cycles of three years, both with SEA. The guidelines emanating from SEA are now part of the terms of reference for the EIA of projects. The added-value brought by SEA has been recognized by many stakeholders and, importantly, by REN themselves, who are now strong advocates of the use of SEA among their peers (Partidário et al, 2010).
[box ends]

Emmelin and Lerman (2005) argue that a minimalist implementation of SEA (i.e. only implementing the minimum requirements of the SEA Directive in order to assure compliance but nothing more) is problematic because it does not accrue all the potential benefits of such legislation. In contrast, if stakeholders advocate the use of SEA irrespective of legal requirements, this is indicative of a strong SEA acceptability. It can be argued that acceptability of SEA is linked to the effectiveness of SEA, which can be defined as the degree to which SEA has been successful in meeting its objectives and purpose. Peterson (2004) showed that participants and stakeholders had different expectations regarding the management and outcome of the environmental assessment process in general. Peterson (2010) and Peterson et al (2010) suggested that the objectives and the outcome of any environmental assessment (including SEA) needed to be agreed at the outset and communicated effectively to all stakeholders.
More fundamentally, there are differences between developing and developed countries, and what is effective in one country context it will not be necessarily effective in another country. There is

substantial evidence to suggest that SEA can only be successfully introduced into a country if prior thought is given to the context within which it will operate. The literature in this area initially focused on EIA, and more recently has begun to examine the way in which context can affect how SEA systems are introduced and institutionalized (e.g. Hilding-Rydevik and Bjarnadottir, 2007; Runharr and Driessen, 2007). Gibson et al (2010), for example, point to how the peculiarities of the Canadian context have influenced the choice of administrative structure for SEA in that country.

Going further, some recent work suggests that context can determine the type of methodologies that are used in SEA. For example, Annandale (2012) proposes the development of a diagnostic tool that could be used to determine how an SEA system might best be introduced to a developing country. He presents a typology initially developed by Grindle (2007) that groups countries according to the nature of their politics and governance, cultural circumstances, economic circumstances and human resource capacity. For example, for 'institutionalized, non-competitive states' such as North Korea, Vietnam and China, Annandale (2012) argues that application of the diagnostic tool shows that SEA can really only be used by state agencies, in competition with each other. Scientific content is questionable due to state control over information. As a consequence, SEA can potentially be used to open up access to information and point to technical deficiencies in planning.

SEA in developing countries has been applied by the World Bank for a number of years. It has been used in Bank-financed operations as a development planning tool in core growth sectors in the Africa Region for over a decade. Use of SEA as a strategic planning tool reflects the shift in the Bank's development assistance from providing technical solutions to strengthening country capacity for formulating and implementing sustainable development policies and plans (Cadman, 2012). Earlier, the focus of the Bank's support was on economic growth, with the environment being considered a constraint on donor-driven agenda. The current focus supports country-owned sustainable development and considers environment as part of the development agenda with broad support for country systems, programs and reforms. As a result, the scope of environmental tools has expanded from project assessment to upstream analyses of strategic development priorities.

Cadman (2012) took stock of the Bank's experience in applying SEA in Sub-Saharan Africa between 1999 and 2012. The analysis examined whether the SEA work in the Africa Region since 1999 has, in fact, reflected the shift in focus in the Bank's development assistance or whether a more concerted effort is needed to ensure full adoption of SEA as an effective assessment tool to support the Bank's sustainable development objectives. The stocktaking exercise specifically assessed the experience related to the growing body of SEA work in the Africa Region along two dimensions: the evolution of SEA in this region (elements of an effective SEA, design and use of SEA, and the main drivers of SEA) and key lessons learned. The review found five main factors that either enabled or hindered achievement of SEA objectives: country ownership, timing, stakeholder engagement, capacity constraints and the legal basis for such assessments. The research also examined emerging trends in the use of SEA as a catalytic tool in spatial planning and climate resilience operations in the Region.

Finally, it may be argued that an additional benefit of SEA is to be able to present those who win and those who lose. This links with the concept of environmental justice. However the role SEA can play in environmental justice still remains an elusive one. McLauchlan and João (2011) argue that environmental justice is a contested concept despite the fact that it is a high-level policy objective in the USA and, internationally, policy advocates and academics have identified environmental justice as a fundamental part of sustainable development. Policy appraisal, in particular SEA, has been cited as a main tool to deliver environmental justice. To evaluate this, McLauchlan and João (2011) analyzed Scottish SEA documents produced between 2003 and 2007. The study found that SEA practice in Scotland was not directed towards empirical assessment of environmental justice and argued that environmental justice remains a Utopian goal, with no indisputable means to be achieved.

PRAGMATIC CONTEXT

With regards to SEA procedures and methods, the final key aspect, in addition to baseline and political issues, is the pragmatic context. This includes issues of time, data, money, people, proportionality, use of indicators, and the relationship between SEA and EIA. These issues extend well beyond methods and procedures and intrude into many areas of SEA. This reinforces the key argument of this Chapter that SEA methods have to be discussed within the context in which they are applied. Of course, pragmatic issues are tightly linked to baseline and political issues. The amount of resources that a responsible authority can (or is willing) to spend will affect how the SEA is carried out. The discussion on the need for 'proportionality' (on how large or how small SEA should be in relation to the size of the plan) is on the one hand a pragmatic aspect, and on the other is very much a political issue. In addition, there is a challenge on dealing with environmental issues (and thereby SEA) during a financial crisis. The global economic crisis can change the focus of plans from long-term sustainability issues to short-term solutions to environmental problems. However, interestingly, there is also the possibility of occurrence of environmental opportunities when economic growth is not the main driver.

One pragmatic aspect with regards to SEA procedures and methods is the use of indicators. The use of indicators in the SEA process can facilitate a more simple presentation of the complex impacts and relationships that arise from development. However, designing indicators for SEA is a complicated process concerning public participation, expert consultation and decision making. Thérivel (2004) warns that poorly chosen indicators can lead to a biased or limited SEA process. By reviewing national SEA legislation and guidelines, Gao et al (2012) makes a comparative study of the requirements of the use of indicators within SEA in national contexts, and of the experiences of using indicators in SEA in Denmark, UK and China, in terms of whether indicators lead to opportunities or limitations in SEA. From a political perspective, the study explores how indicators influence communication during SEA and whether they are positive or negative in providing information for decision making. The study found that in national SEA guidelines, indicators are presented in a

certain and objective way, although choice of indicators in SEA is also a political process. In addition there is the risk that knowledge which is more subjective and uncertain will not be included in the selection and use of indicators.

One of the often mentioned pragmatic approaches to SEA is the use of GIS. The use of spatial data and GIS as a support tool for environmental assessment is receiving increased attention (Gonzalez, 2012). Spaziante et al (2012) described a case study concerning the use of GIS and spatial analysis techniques in a SEA process to improve its effectiveness and provide more tangible outputs. The case presented is the SEA of the Rural Development Program (RDP) of the Piedmont Region (Italy). RDPs are programs that EU Member States must elaborate to target funding from the European Union to farmers. RDPs implement the so-called 'agri-environment schemes' that support farmers financially in order for them to adopt more sustainable farming practices and/or providing ecosystem services.

One of the key aspects regarding environmental effectiveness of agri-environment schemes is spatial targeting, i.e. to fund actions where their environmental net effects would be greatest (Garrod, 2009; ECA, 2011). A spatially explicit index was used to assess the effectiveness of key agri-environment schemes in terms of spatial distribution. Parcels enrolled in agri-environment schemes were geo-referenced using GIS, then the total performance of each scheme was determined by assigning to each parcel a 'spatial targeting score' based on it belonging to the following areas: Vulnerable Nitrate Zones, Protected Areas and Natura 2000 Sites. Results indicate that current distribution of agri-environment schemes in the Piedmont Region is far from being optimal, and that significant improvement in the effectiveness of these schemes could be reached, total expenditures being equal, by simply improving the spatial targeting of financed actions. This represents a significant case in which spatial analysis has proved a useful tool for enhancing SEA effectiveness.

Arguably, another pragmatic aspect is how to carry out SEA when there is lack of data or where planning objectives are ambiguous. A research project currently being developed at KTH Royal Institute of Technology, Sweden ('Fostering Participation and Dialogue Using Strategic Environmental Assessment' - see Azcárate and Balfors, 2009; Azcárate, 2011; Azcárate and Balfors, 2013) specifically focuses on analyzing how participative SEA approaches adapt to situations where there is an absence of environmental data and where strategic planning objectives are unclear, in conflict or missing. The research project aims to examine if designing participative SEA approaches fosters participation and dialogue, and enhances the inclusion of a wide spectrum of sustainability issues in strategic decision making. Additionally, the research focuses on assessing how network strategic assessments contribute to enable and frame strategic dialogues and ideas, skills and experience sharing between individuals, organizations and community members in networks. This in order that these organizations can create the necessary conditions to develop relevant capacity development programs. To reach these specific objectives and analyze how participative SEA approaches enhance strategic planning and decision making, a qualitative research strategy based on

case study designs taking place in different contexts with varying institutional requirements, organizational setups, objectives and interests was devised.

Collected empirical experiences suggest that participative approaches to SEA potentially serve as strategic dialogue-enabling frameworks. This facilitates the integration of expert and traditional environmental knowledge; enhances the consideration of environmental management provisions in the formulation of strategic environmental plans; enables the operationalization of network strategic elements in daily activities of network member organizations; and serves network organizations as a tool to mainstream capacity development processes in network strategic planning and decision making (Azcárate and Balfors, 2009; Azcárate, 2011; Azcárate and Balfors, 2013). Despite advances, it is acknowledged that continued research is needed to further study the value of designing participative SEA in a diversity of contexts that deal with complex and competing issues that need to be addressed and streamlined into common development strategies.

A unique insight regarding SEA proportionality can be provided when SEA is applied to small islands. Small islands have special vulnerabilities and unique characteristics such as: narrow economic base, limited resources, small populations without proper skills, or high population densities and hence high demands on resources, high ratio of coastline to land area and extremely vulnerable ecosystems (Douglas, 2004, 2006). Additionally, small islands have to face several environmental and socio-economic problems such as marine and coastal resource degradation, rising sea level, water resource problems, geographic isolation, lack of employment opportunities, financial dependence, and lack of public services facilities (Lohani et al, 1997). In some islands, SEA is already practiced and is a legal requirement but often what they have incorporated have probably been more influenced by outside bodies than any local agency (Ramos et al, 2009). Therefore, there is a need to test island-specific assessment techniques to separately highlight important biodiversity/ecological, socio-cultural and public health effects. A framework to meta-evaluate the SEA performance and establish a set of guidelines for conducting and reviewing SEA in small island territories is being developed to incorporate a system analysis approach, integrating the main relationships among the SEA process (Ramos and Caeiro, 2010; Ramos et al, 2011).

Finally, at its most pragmatic, one of the key recommendations for improvement of SEA procedures is to include a schedule of commitments within the policy, plan or programme (and post-adoption statement) with a clear indication of who (and when) is responsible for taking those commitments forward. Unfortunately, a “blind faith in mitigation” and an inability to ensure that “mitigation measures will be delivered or that they will be successful” (as highlighted by Eales and Sheate, 2011, p. 50), remain one of the areas of poor performance in SEA. It is therefore critical that the trend in blind faith in mitigation is reversed, if SEA is to assure its contribution to sound environmental decisions.

CONCLUSIONS AND RECOMMENDATIONS

The effective employment of SEA methods is largely influenced by the resources, time and data available as well as the scale and type of the policy, plan or programme. This Chapter has argued that particular attention should be paid to baseline, political and pragmatic contexts in which SEA operates before appropriate tools or methods can be chosen.

In relation to the baseline context, it is critical to consider limits of acceptable change in SEA. This is challenging when considering uncertainty and how best to determine thresholds and trade-offs. Some of the tools described in this Chapter that may help with preventative environmental protection are vulnerability analysis and consideration of ecosystem services. It is also proposed that a new approach to baseline data collection might be needed that considers aspirations (in addition to trends and thresholds) and supports enhancement of positive impacts. McCluskey and João (2010) found that the promotion of environmental enhancement in SEA was lacking. It is important to reverse this trend and ensure that SEA identifies opportunities for enhancement of positive impacts. This links to the added-value of SEA and can help inspire others to the usefulness of SEA.

With regards to the political context, SEA methods are undermined when SEA is jeopardized by political motives. One recurrent theme at the SEA Conference in Prague in 2011 was on how 'to give teeth to SEA'. SEA needs buy-in from all stakeholders involved and it is crucial that the added-value of SEA is recognized. The catchment of impact assessment interest is often too narrow and SEA must inspire engineers, construction companies and procurement officials, among others. Acceptability of SEA is strongly linked to the effectiveness of SEA and it is critical that objectives and the outcome of SEA are agreed at the onset and communicated to all stakeholders. SEA can also potentially be used to open up access to information, and point to technical deficiencies in planning, in different country contexts.

Pragmatic issues (which are tightly linked to baseline and political issues) cannot be ignored. This includes issues of time, data, money, people, proportionality, use of indicators, and the relationship between SEA and EIA. The use of GIS and spatial analysis for SEA is receiving increased attention but a challenge remains on how to carry out SEA when there is lack of data or where planning objectives are ambiguous.

Finally, one of the main proposals for future prospect coming out of the Methods Session of the SEA Prague Conference, is that SEA procedures are put in place that ensure that all mitigation and enhancement proposals are carried out. All SEA should include a schedule of commitments within the strategic action and post-adoption statement, with a clear indication of who is responsible for taking those commitments forward.

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HIGHLIGHTS AT A GLANCE

Main trends and developments	SEA has been increasingly understood by SEA academics and practitioners as a process rather than solely a technique. This is has influenced thinking on choice of methods that should be used in SEA.
Key issues and perspectives	The effective employment of SEA methods is largely influenced by the resources, time and data available as well as the scale and type of the strategic action. Assessing the context in which SEA operates is necessary before appropriate tools or methods can be chosen. Plus it is critical to consider limits of acceptable change in SEA.
Key lessons regarding process effectiveness and quality of practice	There are different ways in which context can be assessed prior to the application of tools or methods. Attention should be paid to baseline, political and pragmatic contexts. SEA methods are undermined when SEA is jeopardized by political motives. SEA needs buy-in from all stakeholders involved and it is crucial that the added-value of SEA is recognized. SEA should include a schedule of commitments within the policy, plan or programme (and post-adoption statement), with a clear indication when and who is responsible for taking those commitments forward.
Future directions and prospects	More attention should be paid to analyzing context before deciding on tools or methods for SEA. Research needs to focus on how context analysis should be undertaken. A new approach to baseline data collection might be needed that considers aspirations (in addition to trends and thresholds) and supports enhancement of positive impacts. The catchment of impact assessment interest is too narrow. SEA must inspire and motivate engineers, construction companies and procurement officials, among others. The use of GIS and spatial analysis for SEA is receiving increased attention.