

Outcomes from SEA applied to Waste Strategies in Scotland

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Abstract

Tiering strategic levels of action is one of the SEA benefits. SEA recommendations in the sectorial policies planning to allow understanding how environmental issues have been incorporated in waste management policies (PPPs). Scotland has a systematic SEA integrated into the decision-making processes. This research intends to identify evidence of SEA's influence on tiering and application from SEA recommendations to waste strategies, using the Scottish system of planning and SEA as reference. This study is based on bibliographical research; documentary research, semi-structured interviews and content analysis. There is disagreement about the role of SEA in improving public awareness on the waste strategies. However, findings show that SEA has helped to increase transparency of decision making as well as the credibility of the end results because of the informal and formal consultations on both the SEA and strategy. There is uncertainty regarding the role of SEA in enabling the use of new ideas (e.g. time or cost savings on subsequent plans or project assessments) in the next rounds of decision-making. SEA contributed to the reduction in uncertainties within the subsequent hierarchy levels. Results show that SEA provides contributions to strategies such as increasing transparency and address questions for other sectors of planning but depends on factors as institutions engagement, proximity/integration with the sectorial planning to get considerable results.

Introduction and Objectives

Strategic Environmental Assessment (SEA) is expressed as a tool “for identifying and evaluating potential impacts of policies, plans and programmes (PPPs) and promoting more sustainable patterns of development”¹³. Tiering is “the deliberate, organized transfer of information and issues from one level of planning to another, which is being supported by Environmental Assessments”^{4, (p.417)}. With respect to these definitions, this research intends to identify evidence of SEA's influence on tiering and the application of SEA recommendations to waste strategies, using the Scottish planning system as reference.

Tiering of different strategic levels of action is one of SEA's benefits. SEA recommendations in sectorial policy planning enables understanding of how environmental issues have been incorporated into waste management PPPs. In Scotland, SEA serves as part of a broader agenda for delivering environmental justice, thereby extending the scope of SEA to all Scottish public sector PPPs with a co-ordinated system of environmental assessment which embraces all aspects of Scottish policy formulation, including higher-level strategies¹⁵.

Outcome is defined as a longer-term change as a result of the SEA experience⁰¹. SEA outcomes are the ultimate measures of its value-added functions⁰¹. Thus, tiering of strategic actions⁰⁴ can be seen as a quality test of SEA. Adequate tiering can prevent foreclosure of issues, support assessment of issues appropriate to the planning level, and may help to stimulate more environmentally responsive planning and adaptive management¹⁸. Finally, tiering requires - but also may enhance - stakeholder engagement and not only provides transparency of EAs, but also of strategic decision-making⁰⁴.
²¹discuss the incipient research of tiering application.

Methodological and Analytical Framework

The study is based on literature review¹³; document analysis¹¹; semi-structured interviews^{12,16} and content analysis¹¹.

Literature review

Focused on SEA outcomes and contributions to planning, as well as the elements linked to the promotion of tiering. Box 1 shows SEA outcome criteria via the process of collecting and categorizing the criteria which occurred through content analysis, and precisely by identifying categories of words. Impact Assessment, mitigation and follow-up is one example that composed the discussions and notes on SEA outcomes. The same process was developed to collect criteria

from favourable conditions for tiering (i.e. structure enables a flow of environmental decisions and information) (see Box 1).

Document Analysis

Coupled to literature review, a search for SEA documentation applied to Waste Management Strategies was directed to the Scottish SEA Gateway, which contains the SEA documentation since July 2004. SEA post-adoption statements include:

- SEA\00397 - Waste Strategy - Aberdeen City Council
- SEA\00494 - Managing Waste in New Developments - Highland Council
- SEA\00076 - Lothian and Borders Area Waste Plan - Scottish Environment Protection Agency (SEPA)
- SEA\00355 - National waste management plan - The Scottish Government
- SEA\00786 - Safeguarding Scotland's Resources - a Programme for Efficient use of our Materials - The Scottish Government and Making Things Last - Our Circular Economy.

It is important to mention that this stage was not limited to post-adoption documents, once scoping and screening reports were also available. Therefore, they were also analysed to structure the SEA overview of Scottish waste planning.

Semi-structured Interviews

A total of five experts (2 from Aberdeen City Council; 1 from Highland City Council; 1 from the Scottish Government and 1 from Scottish EPA) were interviewed.

The interviews were performed through questions sent by e-mail and by phone. The topics were elaborated based on the outcomes of literature review and document analysis (Box 1).

Content Analysis

Qualitative content analysis is considered a qualitative method for systematically and rigorously integrating, interpreting, and synthesizing qualitative findings that have been extracted from multiple qualitative or mixed-method research reports¹¹. This step was performed in order to process interview data and then analysed using deductive content analysis techniques¹¹.

All data resulting from interviews were coded thematically with the use of NVivo© software, which is a program designed to classify and manage qualitative information³⁰. Interviewee responses were investigated regarding the incorporation of SEA recommendations into PPPs. In each answer, the interviewee pointed out if there was the framework (positive or negative) considering the criteria: results provided by the SEA or related to the tiering. In an answer, the interviewee could discuss information converging to one or more criteria in the literature, which justifies the possibility that the above-mentioned criteria exceed the number of interviewees.

Results and Discussion

A wide body of literature is devoted to the debate about the extent to which the application of SEA recommendations can provide benefits such as tiering environmental information among different levels or strategic actions and to integrate environmental concerns into planning and decision-making.

In relation to tiering criteria, the interviews revealed that most of the positive replies demonstrate that there is a definition of the role that environmental information has in planning (T.2) (see Figure 2) *“the SEA demonstrates that the document has been considered against a range of environmental criteria”* (officer C). Another relevant positive response pointed out that structure enables a flow of environmental decisions and information (T.5), as officer E argued that *“if you do the SEA and the regulatory Impact Assessment properly then it should remove all uncertainties, that is the purpose of it”*.

The main answer with both positive and the negative aspects referred to integrating environmental aspects in planning (T.4) and the role of each administrative political level; rationales needed for each level (T.1). Officer A discussed both criteria: *“all the benefits (from SEA) are not being delivered through waste strategy. Other benefits and goals are being delivered through Powering Aberdeen: Sustainable Energy Action Plan”*.

With regard to SEA Outcomes, most of the positive aspects focus on the way SEA provides problem-solving skills related to evaluating impacts, creating mitigation strategies (4) and that SEA allows the definition of opportunities for area development (10), as officer B asserted *“the Strategy and SEA enabled the services to contribute to the Local Development Plan process fully, especially in the identification of a suitable site for Energy from Waste and other infrastructure”*. (see Figure 3).

The main aspects with both aspects concerning the way SEA ensures compliance of the PPP with the agency’s/ organization’s mandate, regulations or higher-level policy commitments (12) and SEA provided recommendations and mitigation options to the impacts (24). In relation to criterion 12, the officer C positively emphasized *“the guidance and SEA also made sure it was supporting the intention of the Zero Waste Scotland and moving towards Scottish Government targets”*. However, officer D indicated that Lothian and Borders Area Waste Plan *“stopped, so that it was no longer the approach that Scotland did and it was replaced with other work that was done at the national level”* (Zero Waste Scotland). Regarding criterion 24, officer A highlighted *“SEA led to a mitigation measure and some changes to the plan. (...)Some of the mitigation measures are implemented through the Local Development Plan, Strategic Development Plan and Powering Aberdeen”*.

Box 1: Topics based on bibliographical research to ascertain SEA outcomes and Tiering in the interviews

SEA OUTCOMES Criteria

1: SEA provokes frame reflection and policy-oriented learning. ¹⁶	13: SEA provides accessible information for use in subsequent PPP, monitoring programs or project-based IA. ^{01, 07, 25}	25: SEA provided them with a methodological approach for analysing various planning components and for putting issues into perspective ¹⁶
2: SEA enables the understanding and awareness of environmental/sustainability issues, SEA process and the PPP. ^{26, 28}	14: SEA provides regulators a better understanding of PPPs risks, stakeholder perspectives, and more confidence in their decisions. ^{26, 28}	26: Stakeholders' consultation within the SEA process yields a transparent assessment. ²⁴
3: SEA enables/increases system learning, knowledge and improvements ^{16, 28, 29}	15: SEA helps increase the credibility/ transparency/ accountability of end results. ^{01, 28}	27: Expanding the policy capacity and broadening the policy horizons of decision makers. ²⁷
4: SEA provides problem-solving skills related to evaluating impacts, creating mitigation strategies. ²⁶	16: SEA provides clear direction or standards to facilitate implementation of the PPP. ⁰¹	28: Integrate the impact assessment tool with other instruments; ⁰³
5: SEA enables the recognition of the usefulness of working together ^{09, 26, 16}	17: SEA results in more environmentally friendly or sustainable decisions. ^{23, 26}	29: SEA enables decision-makers to realise the implications that are detrimental to the environment. ¹⁴
6: SEA improves public awareness of the agency or organization as a result of SEA application ⁰⁵	18: SEA enables the use of new ideas in the next rounds of decision-making ^{01, 28}	30: SEA addressed the integration of sustainability criteria as part of the impact evaluation process. ²⁴
7: SEA generates (mutual) learning processes between stakeholders. ¹⁶	19: SEA leads to improve regulatory decisions ²⁶	31: SEA has the potential to screen out environmentally unfriendly projects. ⁰²
8: SEA identifies possible conflicts between the objectives of the PPP document and national (or sectoral) environmental objectives. ²¹	20: SEA ensures better communication and co-operation of stakeholders and organizations. ²⁵	32: Dialogue between impact assessors and decision makers. ¹⁹
9: SEA identifies strategies for enhancement of positive impacts ^{01, 21, 25}	21: SEA allowed identification of cumulative impacts and also those environmental aspects to be considered by project level analysis. ⁰⁷	33: An adjustment among decision makers and their willingness to accept actions for environmental reasons. ¹⁹
10: SEA allows definition of opportunities for the area development. ⁰⁸	22: SEA includes formulation of a monitoring framework which is not normally covered by an EIA. ^{07, 25}	34: SEA allows for a systematic and comprehensive consideration of sustainability principles in the planning process. ²⁵
11: SEA incorporates sustainability considerations into the PPP. ^{01, 07}	23: SEA raised participant "awareness" of projects and resulted in learning outcomes ²⁵	
12: SEA ensures compliance of the PPP with the agency's/ organization's mandate, regulations or higher-level policy commitments. ⁰¹	24: SEA provided recommendations and mitigation options to the impacts. ²⁵	

TIERING Criteria

T. 1: Role of each administrative political level. Rationales needed for each level ^{06, 15, 20}
T.2: Role that environmental information has in planning ¹⁰
T.3: Clear difference between a policy, a plan and a program ⁰⁴
T.4: Environmental aspect integration in planning ²⁹
T.5: Structure enables for a flow of environmental decisions and information ^{04, 06, 10, 20, 22}
T.6: Better communication between stakeholders ²²
T.7: Dissemination or flow of information at all levels ¹⁷
T.8: The structure allows for institutional learning. There are feedbacks from the follow-up and the previous experience ²²
T.9: There is a facilitator agent ²⁰
T.10: Planning transparent and opened ⁰⁴
T.11: Coordination of stakeholders and the general public allow communication to be effective with planners ^{06, 20}
T.12: Management over the flow of information, allowing tiering to be controlled ^{04, 06, 17}
T.13: Government willingness ⁰⁶
T.14: Real concern about the environmental issue by stakeholders / the general public ⁰⁶
T.15: Values defined by the stakeholders and the public in general involved in planning ^{20, 29}

Legend: SEA Outcomes = just number

Learning and knowledge	Decision-Making and Regulatory process
Impact evaluation, mitigation and follow-up	Sustainability and environmental considerations
Communication and stakeholders relations	Credibility/ transparency/ accountability
	PPPs and planning process

Legend: Tiering = T. number

Source: Numbers at the end of the sentences reflect the reference numbers in this paper.

Figure 2: Answers of interviewees X tiering criteria

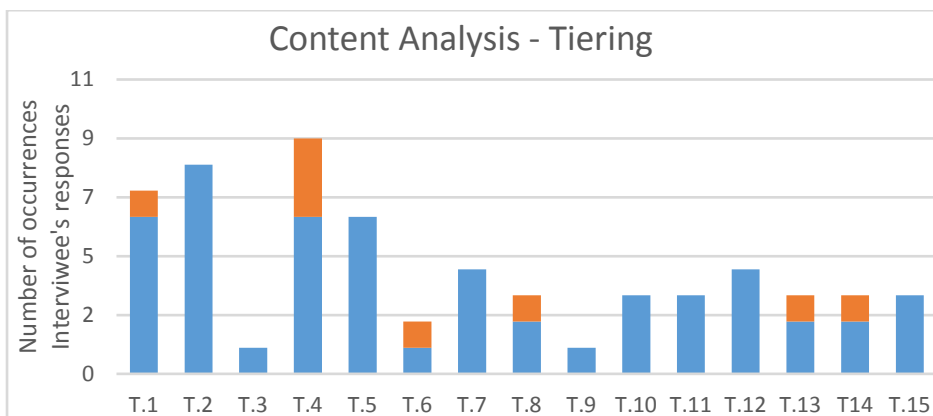
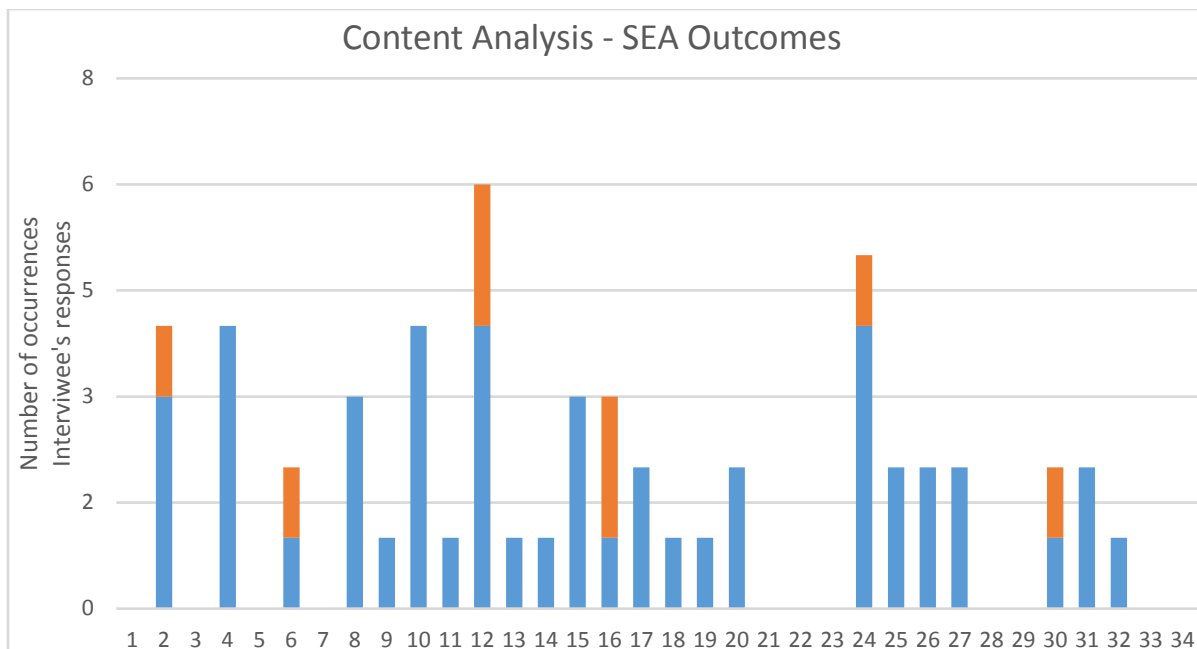


Figure 3: Answers of interviewees X SEA outcomes



According to the tiering results, most responses were positive with an emphasis on T7 and T12, which point to the flow of information and are related to T5 (already discussed). Nevertheless, six criteria (T.1, T.4, T.6, T.8 and T.13) showed negative characteristics in the respondents' responses. However, those interviews showed that SEA contributes to integrating environmental aspects and the role that information provides in/for planning^{10, 30}. Also, there are replies which indicate the role of each administrative policy level; rationales needed for each level^{6, 15, 20}.

For SEA outcomes, eleven (1, 3, 5, 7, 21, 22, 23, 28, 29, 33 and 34) of the criteria's total number (34) were not mentioned in respondents' answers. Most answers mainly focused on positive aspects and only six criteria pointed to some negative response. Furthermore, the responses preponderance concentrated on what SEA provides: recommendation and mitigation to the impacts^{25,26}; compliance of the PPP with the higher-level policies⁰¹ and helping the credibility/transparency of results^{01, 28}; also, it allows opportunities for the area development⁰⁸ and identifies conflicts of the PPP and environmental objectives²¹.

Conclusions

The results show that SEA provides contributions to strategies such as increasing transparency and addresses questions for other sectors of planning. However, in order to obtain considerable results, this tool depends on factors such as the institution's engagement, and proximity/integration with sectorial planning.

Therefore, this research indicates that the incorporation of SEA recommendations could be a path to achieve steps to the tiering sponsored by SEA, mainly in a governmental structure which has a systematic SEA system integrated to the decision-making processes. These conditions in Scottish administration play a central role in delivering environmental justice¹⁵. Moreover, some interviewed officers perceive SEA as a good form to recognize relevant environmental information for different levels of planning, as well as to clarify environmental consideration and its incorporation by distinct governments and/or sectoral planning.

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