

## **Developing Key Performance Indicators for the Effectiveness of Strategic Environmental Assessment in Ireland**

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### **Abstract:**

A framework of Key Performance Indicators (KPIs), for use by Statutory and Local Authorities, for evaluating the influence of Strategic Environmental Assessment (SEA) on development Plans and Programmes, and on environmental protection in Ireland has been developed. Interviews of 20 SEA practitioners in Ireland from Local, Regional and Statutory Authority and environmental consultant sample groups were carried out, to identify what defines SEA effectiveness. The outcomes of the interviews were pooled and used to develop a KPI framework, using the strategy mapping approach, i.e. identifying the vision of SEA in Ireland and the critical success factors that need to be achieved to meet this vision. KPIs, linked directly to these critical success factors, were then selected and targets were set to allow progress to be measured. A final consultation workshop with practitioners refined and confirmed the final set of KPIs, which included indicators for a) the quality of SEA reports; b) the effectiveness of SEA implementation, i.e. how well the recommendations of SEA are being integrated into Plans/Programmes; and c) the effectiveness of SEA for environmental protection i.e. the extent to which these Plans/Programmes, which have been refined through the SEA process, are contributing to environmental protection. Further work will involve applying the KPIs both retrospectively (to completed SEA environmental reports and associated adopted plans) and to on-going SEA, to give an indication of the effectiveness of SEA, and to highlight areas for improvement to enhance the SEA process in Ireland.

**Keywords:** Strategic Environmental Assessment (SEA), key performance indicators (KPIs), effectiveness

**Summary Statement:** Interviews were conducted with Irish SEA practitioners to identify the critical success factors that lead to SEA effectiveness. Using strategy mapping, a set of KPIs was developed for measuring SEA effectiveness in Ireland based on the critical success factors.

### **Introduction**

While many criteria have been developed to measure SEA effectiveness, these criteria are often not applicable in every context (Bina et al., 2011; Fischer and Gazzola, 2006; Retief 2007b). International SEA effectiveness research concludes that there are many varying definitions of effectiveness, because each country practicing SEA has a different view of its purpose. SEA has evolved from an assessment tool (reporting on negative effects) to a decision making tool (contributing to policy change) (Gazzola, 2008), and is now linked with policy evaluation, cost-benefit analysis and sustainability assessment (Bina, 2007). Individual countries have decided whether the link between SEA and sustainable development should acknowledge the three pillars of sustainable development (social, environmental and economic sustainability) or whether SEA should be linked with environmental sustainability alone (Bina, 2007). The result is that individual countries have varying concepts of the purpose of SEA (Bina, 2007) and, consequently, varying perceptions of effectiveness (Gazzola, 2008). The development of these 'SEA contexts' contributes to the inability to develop universally applicable effectiveness criteria (Fischer and Gazzola, 2006; Gazzola, 2008).

Despite the issue of SEA contexts, international research concludes that SEA effectiveness can be categorised (Bina et al., 2011; Bond et al., 2012; Chanchitpricha and Bond, 2013) including:

- procedural – relating to completing the required steps when conducting SEA;
- substantive – relating the achieving the overall objectives of SEA including learning which leads to a better SEA process, integration and environmental protection);
- transformative – learning which leads to attitudinal change); and
- transactive – whether the SEA process was carried out at least cost, in a short a time as possible and using the best skills possible) effectiveness.

In Ireland, the Environmental Protection Agency (EPA) carried out an SEA effectiveness review (EPA, 2012) with the objective of determining the procedural and substantive effectiveness of SEA implementation at various stages of the SEA process. This review identified strengths and weaknesses within the Irish context and identified the need to develop a set of national effectiveness criteria, in the form of Key Performance Indicators (KPIs), to provide a framework for measuring progress towards and achievement of effectiveness in Ireland. KPIs have previously been developed for use in SEA effectiveness evaluation in South Africa (Retief, 2007a; Retief 2007b). Retief's KPIs are linked to Key Performance Areas (KPA) and were used to examine effectiveness of SEA in different projects and plan processes.

### **Using strategy mapping to develop a KPI framework**

Recent research into KPI development proposes that strategy mapping is an effective and helpful tool to use when selecting KPIs (Irwin, 2002; Liu et al., 2012; Marr, 2011; Marr and Creelman, 2010; Wu, 2012). Strategy mapping involves the identification of the vision of a process, in this case SEA, and the critical success factors that need to be achieved in order to realise that vision. KPIs, derived directly from these critical success factors, can then be selected and targets can be set to allow progress to be measured. Consultation with individuals involved in all aspects of the process is an integral part of strategy mapping, and is vital for identifying a commonly perceived vision and critical success factors, KPIs, targets and indicators of a process. Similarly, consultation is needed to reach consensus on a definition of effectiveness for any given SEA context (Bond et al., 2012).

To identify the vision of SEA in an Irish context, a semi-structured interview was prepared and conducted with 20 Irish SEA practitioners, primarily from the land use sector (as Irish SEA experience is greatest in the land use sector), representing local authorities, statutory authorities, regional authorities and consultants. Questions were prepared to elicit conversation on the SEA process, particularly on what makes SEA effective. Interviewees were asked to identify the main objectives of SEA, and to discuss the optimum ways of achieving those objectives. The interviews were recorded and transcribed, with permission of the interviewees, or notes were taken. Data from the interviews were pooled and analysed to identify the key processes that, in the view of practitioners, are required to be completed in order for SEA to be effective.

Using Retief's work as a template, the issues and methodologies discussed in the interviews were sorted into Key Performance Areas (KPA) and sub-KPA (see Table 1).

**Table 1. KPAs and sub-KPAs identified through strategy mapping**

<b>KPA</b>	<b>Sub-KPA</b>	<b>Effectiveness category</b>
Environmental report and assessment process	Identification of key issues	Procedural
	Assessment Use of novel approaches	Procedural
Integration of environmental considerations into planning	Governance	Substantive/transformational
	Transparency	Substantive/procedural
Sustainable development and environmental protection	(no sub-division – KPIs linked directly to KPA)	Substantive

KPIs were posed as questions under each sub-KPA (see Table 2), and a choice of responses were given for each question. These responses were derived from descriptions given of the SEA process ranging from perceived compliance with the legislation to perceived best practice, and included built-in targets.

**Table 2. KPAs and sub-KPAs identified through strategy mapping**

<b>Sub-KPA</b>	<b>KPI questions</b>
Identification of key issues	Was the scoping process effective? How was the baseline presented? Was environmental monitoring from the previous SEA referred to?
Assessment	Were zonings assessed and how? How were plan policies/objectives assessed?
Use of novel approaches	Were novel approaches used during the SEA process?
Governance	Were elected members/decision makers well informed? Are there structured information networks within the planning authority?
Transparency	How were recommendations of the environmental report integrated? How were proposed amendments assessed? How was the SEA statement developed?
Sustainable development and environmental protection	Are requirements of relevant legislation integrated? Do policies of the plan promote sustainable development? Have conditions been applied to granted planning permissions based on modified/new policies?

For illustrative purposes Table 3 presents the responses to one KPI question associated with each KPA (all of the KPIs could not be included due to size constraints). The KPIs were qualitative in nature, and were categorised as procedural, substantive or transformational effectiveness. The data were compared against the requirements of Irish SEA Regulations and the European SEA Directive, Irish statutory SEA guidance and the IAIA principles of best practice in SEA, in order to ensure that the KPIs were consistent with legal requirements and interpretations of SEA. Each response to the KPI

questions was assigned a colour ranging from red to green, indicating basic compliance with the Directive to best practice (see Table 3).

**Table 3. sample of KPIs and choice of responses**

<b>KPI questions</b>	<b>Choice of responses</b>
Was the scoping process effective?	<ul style="list-style-type: none"> <li>● scoping was not documented</li> <li>● scoping report produced including some information on all baseline topics</li> <li>● scoping report produced identifying key issues and key relevant baseline data (justification given/not given for scoping out less relevant issues)</li> <li>● consultation on issues paper used to inform scoping and identify key issues and key baseline data (justification given/not given for scoping out less relevant issues)</li> </ul>
Were elected members/decision makers well informed?	<ul style="list-style-type: none"> <li>● elected members have no familiarity with SEA are briefed re SEA for the first time at the draft plan stage</li> <li>● elected members have no familiarity with SEA and are briefed on SEA early and continually in the process – starting at issues paper stage</li> <li>● elected members are familiar with SEA and/or have received training</li> </ul>
Are requirements of relevant legislation integrated?	<ul style="list-style-type: none"> <li>● the SEOs included are taken directly from statutory guidance</li> <li>● SEOs have been modified to reflect European legislation relevant to each environmental topic</li> <li>● SEOs have been modified to reflect European and national legislation and policy relevant to the key environmental issues of the plan area</li> </ul>

● **Compliance** with SEA Directive ● **Good practice** in Irish context ● **Better practice** in Irish context ● **Current best practice** in Irish context

### **Analysis of interview data**

The key critical success factors of SEA which practitioners deemed to be vital for effective SEA included whether:

- scoping identified key environmental receptors and issues,
- baseline data collection methodologies were fluid and efficient,
- the assessment of the zonings and policies of land use plans was transparent and thorough, with the use of GIS and novel approaches,
- elected council members were well informed of SEA and consequently made environmentally aware decisions,
- recommendations of SEA were transparently incorporated in the plan,
- policies or objectives of the plan were cognisant of environmental legislation and improved sustainable development.

A vision for SEA was identified, based on the outcomes of the interviews, and was linked to the SEA Directive:

*To use the SEA process, including communication between SEA and Plan teams, to ensure that environmental considerations are integrated into Plans, resulting in environmentally robust and sustainable planning, and environmental protection.*

The interviews determined that procedural, substantive and transformative effectiveness are perceived by Irish practitioners to be of key importance in the Irish context. Transactive effectiveness was found not to be a key factor, due to the existence of statutory timeframes associated with land-use planning, which limits the potential to complete SEA quickly or to dedicate additional time to the process. Developing KPIs for substantive effectiveness in terms of environmental protection outcomes was found to be challenging for two reasons; environmental monitoring programmes are prepared as required by the SEA Regulations and Directive, but there is no legal requirement to carry out or report on monitoring, which means that the environmental outcomes of SEA are not clear. Secondly, other environmental legislation also acts on the environment (e.g. the European Water Framework Directive, the European Birds and Habitats Directives), and separating out the effects of this legislation from the effects of SEA is difficult. This is an issue that has been highlighted by other authors (van Doren et al., 2013). For the most part, practitioners perceived that changes or modification made to plan policies are the measurable outcomes of SEA. Substantive effectiveness in terms of learning through a SEA process and integrating environmental considerations into planning was perceived as important for achieving effective SEA, and KPIs were developed accordingly.

### **Next steps**

A follow-up workshop will be held with the 20 practitioners interviewed, to present the initial KPIs and stimulate debate on which KPIs are key, which have less relevance and which should be included in the final framework. Following on from this workshop work is needed to test the KPIs. This will be done by applying them retrospectively, to completed SEA environmental reports and associated adopted plans, and to on-going SEA. This will give a better indication of the applicability and usability of the KPI framework and will give an indication of the effectiveness of SEA in Ireland.

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