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Second Review of Strategic Environmental Assessment Effectiveness in Ireland

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Rialtas na hÉireann
Government of Ireland

ENVIRONMENTAL PROTECTION AGENCY
The Environmental Protection Agency (EPA) is responsible for protecting and improving the environment as a valuable asset for the people of Ireland. We are committed to protecting people and the environment from the harmful effects of radiation and pollution.

The work of the EPA can be divided into three main areas:

Regulation: *We implement effective regulation and environmental compliance systems to deliver good environmental outcomes and target those who don't comply.*

Knowledge: *We provide high quality, targeted and timely environmental data, information and assessment to inform decision making at all levels.*

Advocacy: *We work with others to advocate for a clean, productive and well protected environment and for sustainable environmental behaviour.*

Our Responsibilities

Licensing
We regulate the following activities so that they do not endanger human health or harm the environment:
- waste facilities *(e.g. landfills, incinerators, waste transfer stations)*;
- large scale industrial activities (*e.g. pharmaceutical, cement manufacturing, power plants)*;
- intensive agriculture *(e.g. pigs, poultry)*;
- the contained use and controlled release of Genetically Modified Organisms *(GMOs)*;
- sources of ionising radiation *(e.g. x-ray and radiotherapy equipment, industrial sources)*;
- large petrol storage facilities;
- waste water discharges;
- dumping at sea activities.

National Environmental Enforcement
- Conducting an annual programme of audits and inspections of EPA licensed facilities.
- Overseeing local authorities' environmental protection responsibilities.
- Supervising the supply of drinking water by public water suppliers.
- Working with local authorities and other agencies to tackle environmental crime by co-ordinating a national enforcement network, targeting offenders and overseeing remediation.
- Enforcing Regulations such as Waste Electrical and Electronic Equipment (WEEE), Restriction of Hazardous Substances (RoHS) and substances that deplete the ozone layer.
- Prosecuting those who flout environmental law and damage the environment.

Water Management
- Monitoring and reporting on the quality of rivers, lakes, transitional and coastal waters of Ireland and groundwaters; measuring water levels and river flows.
- National coordination and oversight of the Water Framework Directive.
- Monitoring and reporting on Bathing Water Quality.

Monitoring, Analysing and Reporting on the Environment
- Monitoring air quality and implementing the EU Clean Air for Europe (CAFÉ) Directive.
- Independent reporting to inform decision making by national and local government *(e.g. periodic reporting on the State of Ireland's Environment and Indicator Reports)*.

Regulating Ireland's Greenhouse Gas Emissions
- Preparing Ireland's greenhouse gas inventories and projections.
- Implementing the Emissions Trading Directive, for over 100 of the largest producers of carbon dioxide in Ireland.

Environmental Research and Development
- Funding environmental research to identify pressures, inform policy and provide solutions in the areas of climate, water and sustainability.

Strategic Environmental Assessment
- Assessing the impact of proposed plans and programmes on the Irish environment *(e.g. major development plans)*.

Radiological Protection
- Monitoring radiation levels, assessing exposure of people in Ireland to ionising radiation.
- Assisting in developing national plans for emergencies arising from nuclear accidents.
- Monitoring developments abroad relating to nuclear installations and radiological safety.
- Providing, or overseeing the provision of, specialist radiation protection services.

Guidance, Accessible Information and Education
- Providing advice and guidance to industry and the public on environmental and radiological protection topics.
- Providing timely and easily accessible environmental information to encourage public participation in environmental decision-making *(e.g. My Local Environment, Radon Maps)*.
- Advising Government on matters relating to radiological safety and emergency response.
- Developing a National Hazardous Waste Management Plan to prevent and manage hazardous waste.

Awareness Raising and Behavioural Change
- Generating greater environmental awareness and influencing positive behavioural change by supporting businesses, communities and householders to become more resource efficient.
- Promoting radon testing in homes and workplaces and encouraging remediation where necessary.

Management and structure of the EPA
The EPA is managed by a full time Board, consisting of a Director General and five Directors. The work is carried out across five Offices:
- Office of Environmental Sustainability
- Office of Environmental Enforcement
- Office of Evidence and Assessment
- Office of Radiation Protection and Environmental Monitoring
- Office of Communications and Corporate Services

The EPA is assisted by an Advisory Committee of twelve members who meet regularly to discuss issues of concern and provide advice to the Board.

Second Review of Strategic Environmental Assessment Effectiveness in Ireland

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EPA Research Project

Prepared for the Environmental Protection Agency

by

University College Dublin, Levett-Therivel and RPS

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DISCLAIMER

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Executive Summary

This report presents the findings of the second review of Strategic Environmental Assessment (SEA) effectiveness in Ireland. It examines SEA performance on the basis of seven effectiveness dimensions identified in the international literature: context, procedural, pluralist, normative, substantive, knowledge and learning, and transactive.

The findings of the review indicate that, broadly speaking, recent practice in Ireland seems to be more procedurally effective than reported for the case studies in the first SEA effectiveness study of 2012. Overall, SEA seems to be fulfilling its role. More governmental bodies and sectors have engaged in the SEA process and there is, generally, a greater openness to the process. This may be, in part, driven by increasing legal challenges on project consent and refusals through the Irish and European Union courts, placing more of a focus on the earlier stages of decision-making than ever before.

However, although considerable progress has been demonstrated in applying SEA in Ireland, and the SEA process is now well "bedded in", challenges remain. The key procedural challenges identified in this review are similar to those experienced in the earlier review (EPA, 2012), notably the consideration of alternatives and monitoring. Environmental Protection Agency guidance (González *et al*., 2015a) on SEA alternatives has been reported as having improved SEA practice, but this is not necessarily evidenced in the materials reviewed. Further examination of the limitations to alternatives development may be needed to fully achieve effectiveness in this area.

In Ireland, monitoring remains the most significant gap in the procedure, and it is clear from the review that plan-makers and SEA practitioners are in need of clear guidance on how to develop and implement effective monitoring. SEA statement and monitoring guidance has been developed as part of this review (see Appendix 1). However, guidance, although valuable, will not be enough to address current monitoring limitations in Ireland. Plan-makers must commit to implementing monitoring programmes if future plan/programme cycles are to benefit from properly understanding environmental pressures.

Opportunities exist for better public engagement in both plan-making and the SEA process, as the statutory minimum level of consultation has not been found to be effective at engaging the public. Nevertheless, SEA is leading to changes in plans/programmes through both direct and indirect pathways. One of the key pathways that has proved difficult to record is education and awareness raising. This intangible influence can be highly effective at refocusing planning teams to consider environmental matters. Although the Environmental Reports generally fail to capture how the policy context shapes a plan or programme, the case studies are illustrative of the generally positive and proactive approach to environmental integration in Ireland, which often results in good procedural performance and good substantive outcomes.

Based on the above findings, and additional considerations identified throughout the review, a number of strategic recommendations are put forward at the end of this report to further enhance SEA performance in Ireland over time.

1   Introduction

This report presents the findings of the second review of Strategic Environmental Assessment (SEA) effectiveness in Ireland. It brings together the various deliverables prepared throughout the research project, outlining the review framework, which is based on an extensive international literature review, the details of the methodological approach and its results. It includes guidance on SEA statements and monitoring (Appendix 1) and it concludes with a set of high-level recommendations for furthering practice and enhancing overall SEA effectiveness in Ireland and beyond.

The literature review focused on the main peer-reviewed international journals that publish on impact assessment: *Environmental Impact Assessment Review*, *Impact Assessment and Project Appraisal*, and the *Journal of Environmental Assessment Policy and Management*. The review was limited to articles published post 2010 to capture the most recent developments on SEA and focus the examination of SEA effectiveness post 2009/2010, when the first review of SEA effectiveness in Ireland (EPA, 2012) was undertaken. Recent SEA effectiveness reviews in other countries and other relevant grey literature were also included. More than 180 articles, book chapters and reports were reviewed.

The methodological approach was built around a review framework, based on seven dimensions of SEA effectiveness identified in the international literature: context, procedural, pluralist, normative, substantive, knowledge and learning, and transactive. Chapter 2 provides a definition of each of these dimensions. It also takes into consideration (1) tangible (e.g. changes to plan) versus intangible (e.g. influence of environmental authorities, improved decision-making) impacts of SEA; (2) *ex ante* (before the plan adoption) and *ex post* (after adoption) stages; (3) documented (review of Environmental Report content) and perceived (expert/stakeholder opinion and insights) changes; (4) economic costs and benefits; and (5) national and international practice.

Fifteen case studies were reviewed against the effectiveness criteria identified previously. This included a systematic review of SEA reports (i.e. Environmental Reports, Non-technical Summaries and SEA Statements, as well as monitoring reports where available) and associated plan documents of the selected case studies. It also involved focused interviews with over 30 national stakeholders (e.g. SEA consultants, plan-makers) and 10 international SEA experts and an international online survey. The consultation part of the project has captured subtle effectiveness considerations, related to individual perceptions and experiences around SEA practice, and identified real-life good practice examples (Appendix 2).

The findings indicate that, overall, considerable progress has been demonstrated in applying SEA in Ireland since the first SEA effectiveness review of 2012. The context for SEA in Ireland is good, and SEA is normatively effective; it helps to promote sustainable development within sectoral plans. Broadly speaking, recent practice seems to be more procedurally effective than the case studies in the first review, yet challenges remain in the pluralist dimension, with public consultation and engagement better embedded in land use planning than in other sectors. With regard to its substantive effectiveness, the current systemic lack of monitoring hinders a comprehensive evaluation of impact avoidance and sustainable development as a result of SEA, even in cases in which mitigation has been integrated into the final plan. There are significant differences across sectors in the cost-effectiveness of SEA and, although knowledge and learning have significantly advanced, there is a need to treat learning as a purposeful rather than as an accidental outcome of environmental assessment. The following chapters elaborate on these findings, providing detail on where SEA practice has advanced and where further efforts are needed to address the remaining challenges.

This study also prompted the two lead researchers to guest edit a double issue of the journal *Impact Assessment and Project Appraisal*,[1] which presented information about SEA effectiveness in 15 countries. These articles also informed this study.

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1 https://www.tandfonline.com/toc/tiap20/37/3-4?nav=tocList (accessed 13 November 2019).

2   Review Framework: Strategic Environmental Assessment Effectiveness Dimensions

Effectiveness can be described as "how well [something] works or whether it works as intended and meets the purposes for which it is designed" (Sadler, 1996). The main purpose of SEA, as stated in the European SEA Directive 2001/42/EC, is to "contribute to the integration of environmental considerations into the preparation and adoptions of plans (…) with a view to promoting sustainable development" (EC, 2003). Therefore, key tests of SEA effectiveness are whether or not it leads to improvements in plans and whether or not it promotes sustainability and environmental protection.

Improvement in plans is typically described as *substantive* effectiveness and includes improved environmental or socio-economic conditions, other improvements to the plan resulting from the SEA (e.g. clearer wording, more defendable) and the extent to which the plan conforms with the SEA's recommendations (Therivel and Minas, 2002; Runhaar and Driessen, 2007; van Doren *et al*., 2013; Acharibasam and Noble, 2014; Hanna and Noble, 2015; Dalal-Clayton and Sadler, 2017; Bond *et al*., 2018a).

Promotion of sustainability comes under the heading of *normative* effectiveness and includes compliance with the planning organisation's mandate, regulations or higher level policy commitments; reflections of public values in the plan; and achievement of internationally agreed objectives such as sustainable development, environmental justice and/or resilience (Therivel and Minas, 2002; Runhaar and Driessen, 2007; Runhaar, 2009; McLaughlan and Joao, 2011). Whereas the substantive dimension could be described as "did the SEA lead to changes?", the normative dimension could be described as "did it lead to the right kind of changes?" and "did people agree with the changes?"

However, SEA effectiveness begins before any one plan and its SEA are prepared. The *context* dimension includes the presence (or not) of SEA legislation, guidance/training/capacity, adequate resources for carrying out SEA, power relations between various stakeholders, and wider political and institutional culture (Runhaar, 2009; Fundingsland Tetlow and Hanusch, 2012; Wang *et al*., 2012; Gazzola and Rinaldi, 2016; Dalal-Clayton and Sadler, 2017). Indeed, the existence of legislation requiring SEA is key to ensuring that SEAs are carried out at all, but without a supportive context this could simply lead to the production of rote and minimalist SEAs.

The *procedural* dimension of SEA refers to how, and how well, the SEA process is undertaken: timing of the SEA vis-à-vis the plan/programme, adequacy of the data used, appropriate scoping, etc. This is the dimension that has been reviewed the most frequently in the literature (e.g. Weiland, 2010; Whelan and Fry, 2011; Wu *et al*., 2011; Park, 2014; Dalal-Clayton and Tarr, 2015; Olagunju and Gunn, 2015; João and Annandale, 2016; Tshibangu and Montaño, 2016). Procedural effectiveness affects other SEA effectiveness dimensions; for instance, poor scoping may mean that the SEA is longer and more expensive than necessary (reducing transactive effectiveness), and poor consideration of alternatives and mitigation may lead to limited substantive effectiveness.

Pluralist effectiveness refers to the level of engagement of different stakeholders (especially the public and statutory consultees) in the SEA, their level of satisfaction with the engagement, and how different value systems and perspectives held by stakeholders are integrated in the SEA process (Runhaar and Driessen, 2007; Runhaar, 2009; Cashmore *et al*., 2010; Acharibasam and Noble, 2014; Hanna and Noble, 2015; Gazzola and Rinaldi, 2016; Dalal-Clayton and Sadler, 2017). Participation in SEA by all groups helps to ensure that plan-makers have the full range of information needed to develop a good plan, provides information and shares decision-making power with the public, enhances democratisation and can provide a voice for marginalised groups. Low pluralist effectiveness can thus limit normative and substantive effectiveness.

The *knowledge and learning* by all stakeholders that comes from carrying out SEAs can carry on beyond a specific SEA to improve stakeholders'

longer term understanding of environmental issues, change stakeholders' views in more fundamental ways, identify data gaps to be filled in time, and build up environmental governance capacity (Fischer, 2007; Runhaar and Driessen, 2007; Runhaar, 2009; Fundingsland Tetlow and Hanusch, 2012; Acharibasam and Noble, 2014; Dalal-Clayton and Sadler, 2017). This, in turn, can speed up and strengthen subsequent rounds of SEA.

A final dimension of SEA effectiveness that spans all of the previous dimensions is *transactive* effectiveness, namely the costs and benefits of SEA, its efficiency and its cost-effectiveness (Acharibasam and Noble, 2014; Morrison-Saunders *et al.*, 2014; Bond *et al.*, 2018b). Carrying out SEA incurs definite short-term costs in terms of labour and resources. It has the potential to lead to significant longer term benefits in environmental and social costs avoided, environmental and social benefits enhanced, reduced vulnerability of the plan to challenge and improved knowledge and inter-agency working. The costs tend to be monetisable, whereas the benefits (even where potentially monetisable, e.g. ecosystem services) have not been quantified to date. Nevertheless, there are ways of reducing the costs, for instance through good scoping and a supportive context, with costs and data shared between agencies.

Figure 2.1 shows our interpretation of the links between the seven dimensions of SEA effectiveness. The figure clarifies that there is a sequence of effectiveness factors, with context affecting pluralist and procedural effectiveness, which in turn affect normative and substantive effectiveness, and

knowledge and learning. Some aspects of context, such as the existence of legislation and effective environmental bodies, predate a specific plan/ programme and many aspects of normative and substantive effectiveness occur only after plan/ programme adoption, and so there is also a time dimension to these links.

Because of these multiple dimensions of SEA effectiveness, analysing SEA effectiveness, as in this study, goes beyond looking at individual Environmental Reports and their associated plans. *Ex ante* effectiveness (before plan adoption) largely relates to contextual/infrastructural provisions and the procedural and reporting requirements for SEA. *Ex post* evaluations (after plan adoption) look at, among other things, changes made to the plan as a result of SEA and other indirect effects such as awareness raising and capacity building. Table 2.1 lists SEA review criteria associated with each of these dimensions, based on the literature review undertaken as part of this project. These criteria have been used to define the scope of the review framework (e.g. including them as specific elements to look at when reviewing relevant documentation, or incorporating them as specific questions for stakeholder consultation; see also Chapter 3).

The seven dimensions above form the basis of the methodological framework for reviewing the effectiveness of SEA in Ireland. Some of the dimensions are tangible (e.g. procedural aspects of SEA report preparation), whereas some are intangible (e.g. improved planning, environmental protection, stakeholder engagement). As such, some of the
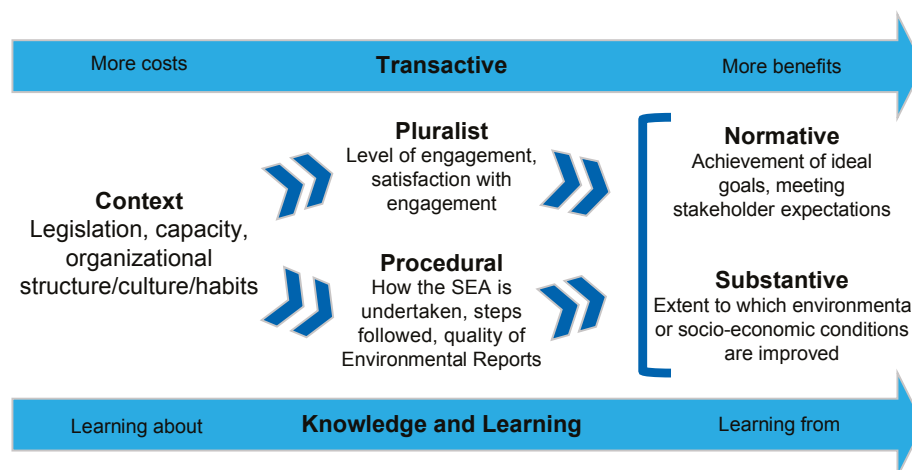
Figure 2.1. Links between the various dimensions of SEA effectiveness.

Table 2.1. Review criteria identified in the literature for each of the SEA effectiveness dimensions

SEA effectiveness dimension	Criteria identified in the literature
Context	• Characteristics of the policy problem and decision-making context (main stakeholders, level of agreement about the issue, openness of stakeholders, norms about decision-making) • Sectoral co-ordination and co-operation, information sharing between ministries • Buy-in and "ownership" by government leaders • Transparency and data sharing among stakeholders • Constraints faced by plan-makers • Socio-political influence in decision-making • Legislation and guidance for SEA (e.g. on complex considerations such as cumulative effects assessment) • Timing (early enough to affect the plan) • Clear tiering of plan, links to previous plans and subsequent plans/projects • Training/capacity of the planning authority • Existence of a centralised SEA organising body • Independent review mechanism
Procedural	• Adequacy of data • Tiering • Timeliness of providing information to the planning process • Consideration of ecosystem and functional interactions, and climate change effects and risks • Adequate consideration and assessment of cumulative effects • Spatial focus of SEA if the plan is spatial • Use of appropriate tools/techniques (e.g. Geographic Information System – GIS) • Understandability of Non-technical Summaries
Pluralist	• The kinds of political visions and messages that actors' inputs to SEA attempt to convey • SEA's influence on the renegotiation of power relations in policy decisions • SEA's contribution to broadening environmental citizenship in the planning process and expanding the scope of democratic control (or participants' empowerment) over planning • Who benefited and lost from the use of SEA in policy decisions and in what regard • Whether or not the chosen methods for public participation allowed for active involvement and discussion • Opportunities for participation throughout the entire process (scoping, generation of alternatives, comments on SEA reports) and particularly early on in the process • Timing of the SEA results – early enough for the public to comment on effectively • Whether or not communication was two-way (listening as well as telling); • Inclusion of traditionally disenfranchised groups (e.g. travellers, immigrants) • Whether or not planners actively considered consultees' comments on the SEA and provided an explanation when they did not make changes in response to comments • Whether or not the SEA results were disseminated to participants
Substantive	• SEA's contribution to or influence on the decision-making process (at all stages, not only final approval) • SEA's role in the implementation of measures or outcomes that better reflect the goals of sustainable or environmentally sound development; • Implementation of more environmentally sound options (alternatives, mitigation measures) • Changes in institutional arrangements (e.g. establishment of an environmental advisory group) • Whether or not decision-makers read/consult/refer to the SEA information • Whether or not decision-makers formally respond to the SEA findings/recommendations, particularly if they did not take the recommendations on board
Normative	• Achievement of the objectives of the SEA Directive: provision for a high level of protection of the environment and promotion of sustainable development • Different interpretations of sustainability • Inter- and intra-generational equity • Achievement of sustainability for key large-scale issues (e.g. climate change, biodiversity loss, ecosystem services) that bring together the environment and human well-being • Resilience • Shared responsibility for implementation of SEA recommendations • Binding and sanctioning power of environmental authorities

SEA effectiveness dimension	Criteria identified in the literature
Knowledge and learning	• Whether or not skills improved as a result of the SEA process • Whether or not administrative capacity improved as a result of the SEA process • Whether or not there was an opportunity for institutional learning, improved collaboration and communication, increased transparency in the decision-making process and increased public awareness and education; • SEA's role as an ongoing learning process • Knowledge dissemination
Transactive	• Time taken (whether or not SEA was carried out within a reasonable time frame without undue delay) • Resource cost of SEA • Benefits of SEA, e.g. in averted costs or enhanced benefits • Planner, stakeholder and expert perceptions of longer term social and economic benefits and costs • Financial resources and responsibilities with regard to monitoring

dimensions can be explored using ongoing or recently completed SEAs ("new" case studies) and some can be explored only once the SEA is completed and its effects on the plan/programme and stakeholders become apparent ("first review" case studies) – see sections 3.2 and 3.3 for further details.

The European Commission SEA Regulatory Fitness and Performance (REFIT) review (EC, 2019), which was taking place at the same time as this review, considers substantive and normative effectiveness under the heading "effectiveness", and transactive effectiveness under the heading "efficiency". It does not consider context, procedural, pluralist, or knowledge and learning effectiveness. Instead, it considers some issues that are not relevant to this Irish SEA effectiveness review: whether or not the Directive is still needed for environmental protection purposes ("relevance"), how the SEA Directive fits with other European laws and policies ("coherence") and whether or not the SEA Directive adds value over what would be done by the Member States anyway (added value). Although the initial REFIT findings came out only in early 2019 and did not influence or inform this review, where appropriate, this report will refer to and make comparisons with the REFIT findings.

3   Methodology

3.1   Analytical Components

Three key analytical parts form the basis of the overall methodology (Figure 3.1):

1. **Review of documented effectiveness**. This review examined the effectiveness of the SEA process (*ex ante*) on the basis of selected "new" case studies using previously identified indicators and metrics (see section 3.3). It primarily focused on the procedural dimension of SEA effectiveness but also examined the context, pluralist, normative and substantive dimensions. In order to examine this, the SEA Environmental Report, Non-Technical Summary (NTS) and related SEA Statement for each "new" case study were evaluated, as well as the monitoring reports where available. Where appropriate, consideration was also given to exploring the linkages and opportunities arising from parallel assessment processes [e.g. Appropriate Assessment (AA), Strategic Flood Risk Assessment (SFRA) and Water Framework Directive (WFD; 2000/60/EC)]. The review of documented effectiveness also aimed to identify national environmental data gaps affecting SEA effectiveness.

> 10 "new" case studies ⟹ review of SEA Environmental Reports, NTSs and SEA Statements

2. **Review of perceived effectiveness.** This review component looked at 10 selected case studies, as well as an additional five case studies from the "first review", in order to examine SEA effectiveness beyond plan adoption (*ex post*). It covered, in particular, the transactive and the knowledge and learning dimensions, but also the context, pluralist, normative and substantive dimensions. Data were gathered through semi-structured interviews with Irish plan-makers and SEA consultants involved in the respective case studies. This was complemented with the opinions and experiences of international SEA experts, gathered through telephone interviews and an online survey.

> 10 "new" and 5 "first review" case studies ⟹ interviews with national stakeholders and international online survey
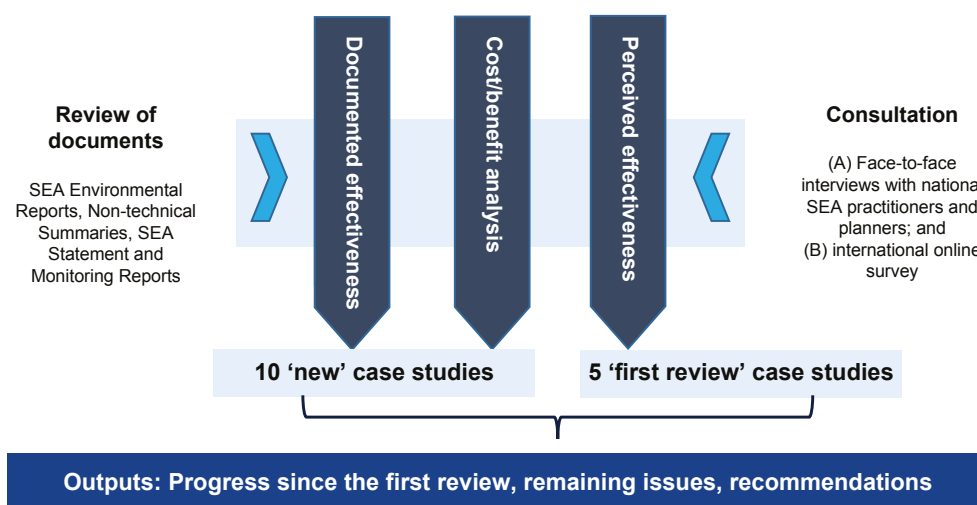
Figure 3.1. Key analytical parts of the review of SEA effectiveness in Ireland and expected outputs.

3. **Economic analysis of implementation costs and the benefits of impacts avoided.** This analysis reviewed SEA time input and other costs to demonstrate whether outputs can be achieved just as effectively with fewer resources. The benefits of the process are represented by the avoided costs of damage/litigation and are examined through both monetary and non-monetary valuation methods. To appraise SEA costs and benefits, the mitigation and monitoring sections of the SEA Environmental Reports and the SEA Statements were reviewed and a relevant question was also included in the survey (see Appendix 3).

3.2   Case Studies

The review of SEA effectiveness in Ireland was based on 15 selected case studies (Table 3.1). For each case study, the SEA Environmental Report, NTS and SEA Statement were reviewed and relevant stakeholders were interviewed.

The selection of the case studies was preliminarily proposed by the project team and, subsequently, reviewed by and agreed with the Environmental Protection Agency (EPA) and the project steering committee. They mainly consist of examples of good Irish SEA practice in one SEA stage/aspect or another. The case studies cover a range of sectors (e.g. water,

agriculture/forestry, transport, land use, energy), planning hierarchies (e.g. national, regional, county) and planning time frames (6-, 10-, 20-year plans, etc.). There were:

- Ten "new" case studies. These are recent SEAs (and related plans/programmes) that were not included in the first review of SEA effectiveness and that are considered examples of good current Irish SEA practice. The systematic review focused on documented tangible changes and *ex ante* SEA effectiveness dimensions (e.g. procedural and normative; Figure 3.2), using defined criteria to appraise the Environmental Reports and the SEA Statements (see also section 3.3). This was then complemented with practitioner interviews to identify perceived intangible changes.

- Five "first review" case studies. These were selected from the 26 case studies from the first Irish SEA effectiveness review (EPA, 2012), on the basis of the availability of involved practitioners for interview. The review of these case studies focused on perceived intangible changes, derived from practitioner interviews and stakeholder consultation. Where available, SEA Statements and monitoring reports were also reviewed using predefined criteria. This review component mainly covers non-procedural SEA effectiveness dimensions (e.g. knowledge and learning,

Table 3.1. Case studies selected for review

No.	Name of plan or programme	Sector	Level
1[a]	Dublin City Development Plan 2011–2017	Land use	County
2[a]	EirGrid Grid25 Implementation Programme 2011–2016	Energy, onshore	National
3[a]	Fingal County Development Plan 2011–2017	Land use	County
4[a]	Greater Dublin Area Transport Strategy 2011–2030	Transport	Regional
5[a]	Offshore Renewable Energy Development Plan 2014	Energy, offshore	National
6	Clare County Development Plan 2017–2023	Land use	County
7	National Planning Framework 2040	Land use	National
8	National River Basin Management Plan 2018–2021	Water management	National
9	Nitrates Action Programme 2017–2021	Agriculture, water	National
10	Shannon Catchment Flood Risk Assessment and Management Plan 2015–2021	Water management	Regional
11	FoodWise 2025	Agriculture	National
12	National Forestry Programme 2014–2020	Forestry	National
13	Southern Region Waste Management Plan 2015–2021	Waste management	Regional
14	Wild Atlantic Way Operational Programme 2015–2019	Tourism	Regional
15	Strategic Integrated Framework Plan for the Shannon Estuary 2013–2020	Water management, industry	Regional

[a]**First review case studies.**
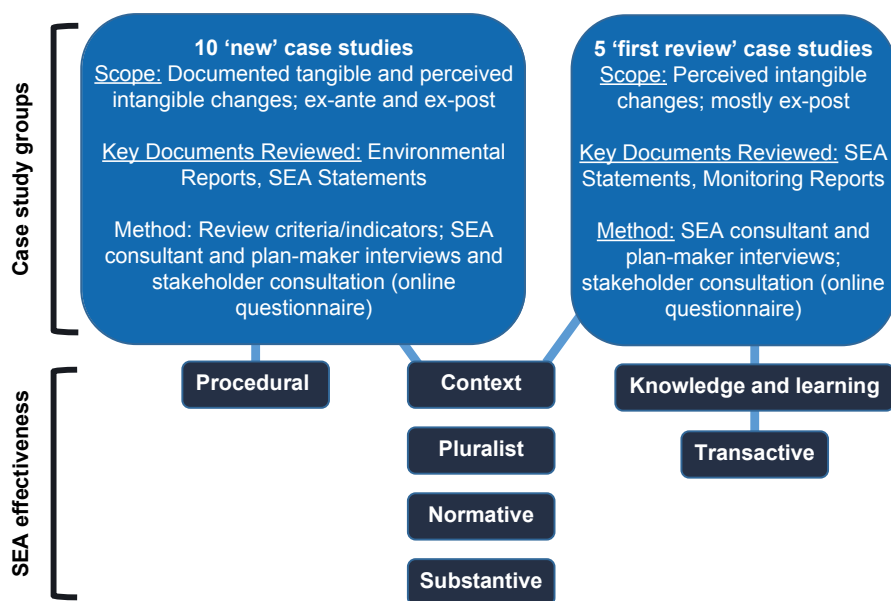
Figure 3.2. Key components of the review of SEA effectiveness in Ireland and the main SEA effectiveness dimensions covered by each.

transactive), while examining how the quality of the SEA Environmental Report (from the first review of SEA effectiveness) relates to intended SEA outcomes.

3.3   Review of SEA Documents

The overall aim of this review component was to assess the compliance of SEA documents – the plan, SEA Environmental Report, NTS and SEA Statement – with statutory procedural requirements. It also examined the influence of the consultation process (including the role of the statutory environmental authorities) and the extent to which the SEA process has influenced the related plan/programme and the wider planning process. This review focused on the "new" case studies (see section 3.2 and Table 3.1). National environmental data gaps affecting

SEA effectiveness were also identified during this procedural review (see Chapter 6).

The review criteria have their basis in the criteria/indicators and metrics used in the first Irish SEA effectiveness review (EPA, 2012). This was to ensure methodological coherency and facilitate the comparison of findings in order to determine progress and any improvements in SEA practice and effectiveness since the last review. Nevertheless, the criteria were adjusted, taking into account the indicators identified in the literature (see Table 2.1), and rearranged to respond to the various SEA effectiveness dimensions (see Chapter 2) that form the methodological framework. The review criteria are presented in Box 3.1.

Based on the analysis of the reviewed documents, an overall rating for each criterion was assigned, as in Table 3.2, accompanied by a summary comment.

Box 3.1. Review criteria/indicators applied in the current review

Context
1.   Does the SEA or plan/programme documentation give an indication of when the SEA process started in relation to the plan/programme (i.e. timing)? 2.   If an AA screening and, where required, a full AA were carried out, at what point did they commence (i.e. at the SEA screening, SEA scoping, Environmental Report or post-Environmental Report stage)?

3. Does the SEA or plan/programme documentation demonstrate that the AA and SEA processes were carried out alongside each other? Is it evident that regular exchange of information has occurred or was the SEA kept separate from the plan/programme development process?
4. Does the SEA Environmental Report describe the links of the plan/programme to previous plans/programmes and subsequent plans/projects?

Procedural

Plan and existing environment

5. Does the Environmental Report provide an outline of the contents and the main objectives of the plan/programme?
6. Are the relevant aspects of the current state of the environment described, as required under the regulations? (i.e. biodiversity; population; human health; fauna and flora; water; soil; air quality; climatic factors; material assets; cultural heritage; landscape). If not, have reasons for eliminating certain topics from further consideration been documented? Were any additional topics that were not required under the regulations addressed (e.g. ecosystem services and functional interactions, climate change risks)?
7. Is the state of the environment from the last plan period referred to?
8. Have relevant findings of related environmental assessments (e.g. AA/SFRA) been reflected in relevant sections of the SEA?
9. Have existing environmental problems relevant to the plan/programme been described (i.e. the likely evolution of the existing environment without the implementation of the plan/programme)?
10. Were the data used the most up to date available? Have any significant gaps in the baseline data been identified? If so, which?
11. Was the baseline information presented relevant to the plan/programme and the assessment being carried out or was it information gathering purely for the sake of information gathering?

Alternatives

12. Have "reasonable alternatives" been identified and described?
13. Does the SEA describe how the alternatives were selected? Was this determined before the SEA commenced or were the alternatives developed in consultation with the SEA?
14. Has clear written justification been given for the choice of the preferred alternative?
15. Are the proposed alternatives assessed against the relevant environmental objectives and against each other? Was each alternative considered fully or does there seem to have been a predisposition to selecting a certain alternative?

Likely significant effects of the plan/programme

16. Are objectives and measurable targets and indicators used in the SEA? Are they set in the context of the plan/programme?
17. Are the likely significant effects on the environment comprehensively described (including positive and negative; short, medium and long term; permanent and temporary; secondary; cumulative; synergistic)?
18. Are transboundary issues considered (where relevant)?
19. Are inter-relationships between the probable significant effects on the environment for the individual environmental topic areas described?
20. Are appropriate tools/techniques used to support an objective assessment (e.g. Geographic Information System – GIS, cost–benefit analysis, Drivers–Status–Pressures–Impacts–Responses or DPSIR)? Are these adequately described?

Mitigation measures

21. Have mitigation measures been proposed for all significant adverse effects on the environment of implementing the plan/programme?
22. Has an explanation been provided where mitigation of significant adverse effects is not proposed?
23. Have the proposed mitigation measures been linked, where appropriate, to specific monitoring proposals?
24. Is a description provided of any likely post-mitigation residual impacts?

Monitoring

25. Has a monitoring programme of significant environmental effects of implementing the plan/programme been described? Is this reflected in an objective/action in the plan/programme?
26. Does the monitoring programme allow unforeseen adverse effects to be identified?
27. Does the monitoring programme address significant gaps identified in the baseline data? Are commitments put in place for this in the plan/programme?
28. Has the frequency of monitoring been specified in the monitoring programme? Has provision been made to produce regular monitoring reports during the time period of the plan/programme?
29. Does the monitoring programme use existing monitoring arrangements where appropriate?
30. Have thresholds/trigger levels been assigned that will trigger remedial action? Is the remedial action identified?
31. Are responsibilities for identifying and responding to unforeseen adverse effects of implementation of the plan/programme clearly defined?
32. Are provisions in place to make the results and interpretation of the monitoring programme available to the designated environmental authorities and the public?

Amendments to the plan/programme following consultation

33. Have all amendments to the plan/programme following consultation been screened for SEA and AA?

SEA Statement

34. Does the SEA Statement provide a transparent account of how the plan/programme was developed and the role that consultation and SEA played in its development?
35. Does the SEA Statement include specific reference to the changes that were made to the plan/ programme (e.g. mitigation) as a result of the consultation and SEA processes?

Pluralist

Consultation – scoping stage

36. Who was consulted on the scope of the Environmental Report (e.g. statutory authorities only, other stakeholders, the public)?
37. If the zone of influence of the plan/programme extends beyond the plan/programme boundary, was transboundary notification and consultation undertaken with other Member States and adjoining authorities on the scope of the SEA?
38. Were any scoping/alternative meetings/workshops held? With whom? Was there a report on feedback?
39. Outside the legislatively required notice in the newspaper, were the public and other stakeholders notified of the fact that the Environmental Report and draft plan/programme were open for comment through any other media (e.g. radio advertisements, websites, newsletters)?
40. Did all of the statutory authorities respond to the scoping notification?

41. Were issues raised in the scoping consultation (and workshop where convened) responses subsequently addressed in either a final Scoping Report or in the Environmental Report?
42. How long was the scoping consultation open for comment?

Consultation – Environmental Report stage

43. Is the NTS concise and easy to understand? Does it include relevant maps, figures, etc., that facilitate understanding?
44. Does the Environmental Report make effective use of maps, tables, figures, etc.?
45. Is it clearly demonstrated how the Environmental Report and the opinions expressed by the designated authorities, other stakeholders and the public during consultation were taken into account during preparation of the plan/programme?
46. Were the consultation responses comprehensively considered and addressed appropriately?
47. If material amendments to the plan/programme were identified that would have a likely significant effect on the environment, was a further round of public consultation carried out?
48. Was the draft plan/programme and Environmental Report consultation period adhered to or extended? Were public consultation information events arranged during the consultation period?

Substantive

49. Have changes been made to the plan/programme as a result of the probable significant effects identified? Are they major changes (e.g. a complete reworking of the plan/programme) or likely changes (e.g. changes to individual words or slight modifications to the preferred alternative)? Are the changes commensurate with the impacts the plan/programme is predicted to have? If relevant and possible, quantify the following: (a) the number of new policies included in the plan/programme as a result of the SEA process and (b) the number of new objectives included in the plan/programme as a result of the SEA process.
50. Were there changes to land use zonings in the plan/programme area as a result of the SEA process and, if so, what were these changes?
51. Have changes to the plan/programme been made as a result of consultation on the SEA or was the plan/programme too set in stone to allow for meaningful changes to be made?
52. Have measures been proposed to deal with existing environmental problems, even if they are not caused by the plan/programme?
53. Have the proposed mitigation measures (SEA Statement) been incorporated into the plan/programme? Is the manner in which SEA influenced/informed plan implementation captured in the plan/programme?
54. As part of mitigation, are there any high-level recommendations on procedures/approaches for plan implementation (including project-level considerations/Environmental Impact Assessment)?
55. Is there evidence that monitoring information will be used to inform the next cycle of planning (including the effectiveness of mitigation)? Have provisions been made to link environmental monitoring with plan implementation review? Where applicable, has the recommended monitoring within the plan area been undertaken? Has such monitoring informed the SEA process of a second cycle of the plan/programme?

Normative

56. In relation to environmental targets: (a) have limits or thresholds been established where appropriate and (b) have timescales been set where appropriate?

57. Have strategic environmental objectives and any environmental considerations been taken into account (placed in context/linked into the plan/programme) during the preparation of the plan/programme?
58. Do the proposed mitigation measures have the potential to fully avoid or mitigate the relevant impact(s)? If not, have additional measures been considered?
59. Are the mitigation measures within the competent authority's remit to implement or are they reliant on another body to ensure that they are put in place? Is there any follow-up suggested to make sure that the proposed mitigation measures are (a) implemented and (b) effective?

Transactive

60. How many meetings/workshops were held?
61. How many relevant environmental indicators were used in the Environmental Report?
62. Are responsibilities and financial resources for carrying out the monitoring programme clearly defined?

Table 3.2. Overall rating for the reviewed criteria

Rating	Explanation
Excellent	Represents best practice in the current implementation and application of SEA
Very good	Approaching best practice although minor changes could bring it up to best practice standards
Good	Good but requires minor to moderate changes in some areas to achieve best practice standards
Room for improvement	Requires moderate changes to achieve best practice standards
Poor	Issues identified that leave significant room for improvement (e.g. limited scope, omissions, lack of clarity). Requires major changes to achieve best practice standards

3.4 Interviews and Online Questionnaire

This second review of SEA effectiveness went further than the first review in order to examine the perceived/intangible elements of effectiveness. Contemporary literature places great emphasis on the non-procedural dimensions of SEA effectiveness, partly because they are largely overlooked in many reviews (refer to the project's Deliverable 1 for more detail).

Perceived effectiveness considerations were examined mainly through semi-structured face-to-face interviews with representatives involved in the 15 selected case studies, as well as telephone interviews with international experts. In total, 30 Irish practitioners were interviewed – a plan-maker and SEA consultant for each case study (Table 3.3). A consultation questionnaire (see Appendix 3) formed the basis for the discussions. The questions derive from the findings of the literature review reported in Deliverable 1.

The objective of the interviews was to gather information on benefits/limitations of current SEA practice not captured in the SEA Environmental Report or SEA Statement. The interviews were aimed at securing honest engagement and at avoiding generalisations and soft answers.

The opinions and experiences of 3 national and 10 international SEA experts (Box 3.2) were also gathered through face-to-face or telephone interviews, as appropriate, using the same questionnaire to initiate consultation. In addition, wider stakeholder opinion was sought via an online questionnaire (see Appendix 3), distributed through the National SEA Forum's e-circulation list and the International Association for Impact Assessment (IAIA)'s newsletter. Twelve international responses were received following the online survey, covering 10 separate countries. In addition, a further 20 survey responses were received from Irish nationals. These additional national and international interviews and online consultation responses contributed to identifying contextual factors that influence effectiveness, good practice case studies and SEA community views on what should be done to improve current practice.

Table 3.3. Irish interviewees: case study representatives[a]

Organisation	Role	Relevant case studies
ADAS	SEA consultant	National Forestry Programme 2014–2020
AECOM	SEA consultant	Offshore Renewable Energy Development Plan 2014
CAAS	SEA consultant	EirGrid Grid25 Implementation Programme 2011–2016, Greater Dublin Area Transport Strategy 2011–2030, Wild Atlantic Way Operational Programme 2015–2019
Clare County Council	Local authority	Clare County Development Plan 2017–2023, Strategic Integrated Framework Plan for the Shannon Estuary 2013–2020
Department of Agriculture, Food and the Marine	Government department – Agriculture	National Forestry Programme 2014–2020, FoodWise 2025
Department of Communications, Climate and the Environment	Government department – Energy	Offshore Renewable Energy Development Plan 2014
Department of Housing Planning and Local Government	Government department – Planning	National Planning Framework 2040
Department of Housing Planning and Local Government	Government department – Water	Nitrates Action Programme 2017–2021, National River Basin Management Plan 2018–2021
Dublin City Council	Local authority	Dublin City Development Plan 2011–2017
EirGrid	Semi-state	EirGrid Grid25 Implementation Programme 2011–2016
Fáilte Ireland	Semi-state	Wild Atlantic Way Operational Programme 2015–2019
Fingal County Council	Local authority	Fingal County Development Plan 2011–2017
Jacobs	SEA consultant	Shannon Catchment Flood Risk Assessment and Management Plan 2015–2021
Limerick County Council	Waste authority	Southern Region Waste Management Plan 2015–2021
Limerick County Council	Local authority	Strategic Integrated Framework Plan for the Shannon Estuary 2013–2020
Mott McDonald Petit	SEA consultant	FoodWise 2025
NTA	Semi-state	Greater Dublin Area Transport Strategy 2011–2030
OPW	Semi-state	Shannon Catchment Flood Risk Assessment and Management Plan 2015–2021
RPS	SEA consultant	Fingal County Development Plan 2011–2017, Southern Regional Waste Management Plan, National Planning Framework 2040, Nitrates Action Programme 2017–2021, National River Basin Management Plan 2018–2021

[a]**Different individuals were consulted for each of the case studies (in some cases, within the same organisation).**
NTA, National Transport Authority; OPW, Office of Public Works.

Box 3.2. Affiliations of the national and international SEA experts interviewed

Ireland (3 experts)
EPA
Department of Housing, Planning and Local Government
An Taisce
International (10 experts)
Netherlands Commission for Environmental Assessment
Academic, Australia
Practitioner, Brazil
Practitioner, Austria
Academic, Portugal
4 × SEA consultants, UK
Academic, UK

4 SEA Effectiveness Review Findings

4.1 Procedural Review

4.1.1. Case studies revisited from the first SEA effectiveness study

The first review of SEA effectiveness in Ireland examined how 26 case studies performed procedurally. Five of these case studies have been revisited and appraised for non-procedural effectiveness through stakeholder interviews, to obtain a more comprehensive account of SEA effectiveness.

Table 4.1 summarises the findings from the five case studies from 2012, revisited as part of this review. The findings point to deficiencies in the consideration of alternatives, mitigation, monitoring and SEA

Statements, but also in the ability of SEA to lead to more informed and sustainable decisions.

4.1.2 New case studies reviewed

To supplement the procedural reviews and follow-up interviews on the five case studies from the first effectiveness study, a further 10 new case studies were identified and both review and follow-up interviews were undertaken. Table 4.2 presents the summary findings from the 10 new case studies. Similar to the findings of the earlier case studies reported in Table 4.1, findings pointed to deficiencies in the consideration of alternatives, mitigation, monitoring and SEA Statements.

Table 4.1. Summary findings of the first review of SEA effectiveness in Ireland

Plan/programme	Screening	Scoping	Consultation	Plan description	Existing environment	Objectives, indicators and targets	Alternatives	Likely significant effects	Mitigation	Environmental Report and NTS	Amendments	SEA Statement	Monitoring	AA
Dublin City Development Plan	BP	VG	BP	BP	VG	VG	BP	BP	BP	BP	BP	BP	VG	BP
EirGrid Grid25 Implementation Programme	BP	BP	NA	BP	BP	BP	VG	VG	VG	BP	NA	NA	VG	BP
Fingal County Development Plan	BP	VG	BP	BP	BP	VG	BP	VG	RI	BP	BP	BP	VG	BP
GDA Transport Strategy	BP	VG	BP	BP	BP	VG	VG	BP	BP	BP	BP	NA	VG	BP
Offshore Renewable Energy Development Plan	BP	BP	C	BP	VG	BP	BP	BP	VG	VG	NA	NA	VG	BP

BP, best practice; C, compliant; GDA, Greater Dublin Area; NA, non-applicable as process was not complete at the time of review; RI, good with room for improvement; VG, very good, with limited room for improvement.

Source: adapted from EPA (2012).

Table 4.2. Summary findings of the case study review

Plan/programme	1. Context	2. Plan and existing environment	3. Alternatives	4. Significant effects	5. Mitigation	6. Monitoring	7. Amendments	8. SEA Statement	9. Consultation scoping	10. Consultation Environmental Report	11. Substantive	12. Normative	13. Transactive
Dimension	Context	Procedural							Pluralist		Substantive	Normative	Transactive
Clare County Development Plan 2017–2023	E	VG	VG	VG	RI	RI	E	VG	VG	VG	G	VG	VG
National Forestry Programme 2014–2020	P	P	G	G	G	RI	N/A	VG	G	RI	RI	RI	P
FoodWise 2025	VG	RI	G	RI	G	G	N/A	G	G	G	G	G	G
National River Basin Management Plan 2018–2021	VG	VG	VG	VG	G	G	E	E	VG	VG	G	G	G
Southern Region Waste Management Plan 2015–2021	E	VG	VG	VG	G	G	E	E	VG	VG	VG	VG	VG
Wild Atlantic Way Operational Programme 2015–2019	VG	G	G	RI	VG	E	NA	NA	G	G	VG	VG	VG
National Planning Framework 2040	E	VG	VG	VG	G	G	E	VG	VG	G	VG	G	G
Strategic Integrated Framework Plan for the Shannon Estuary 2013–2020	E	VG	VG	VG	G	G	NA	VG	VG	G	VG	G	G
Nitrates Action Programme 2017–2021	VG	VG	G	RI	G	RI	NA	VG	G	VG	VG	G	G
Shannon Catchment Flood Risk Assessment and Management Plan 2015–2021	VG	VG	G	VG	VG	RI	NA	G	VG	G	G	VG	VG

Scoring system: E, excellent; G, good; NA, non-applicable as process was not complete at the time of review; P, poor; RI, room for improvement; VG, very good.

Note that the knowledge and learning dimension was not captured in the procedural review but rather through the opinion/perceptions elements of the survey and interviews.

5 Findings: Effectiveness of Irish SEA Practice

5.1 Contextual Effectiveness

The case study review suggests that the context for SEA in Ireland is good overall and trending in a positive direction. Based on the plans/programmes reviewed, the overall SEA process is being applied across a wider range of plans and programmes than was found in the previous effectiveness study, which identified that some sectors lagged behind, including both forestry and tourism. Examples from both of these sectors were included in the second effectiveness review. Interview feedback, in particular, points to a greater awareness of SEA obligations among plan-makers, but also to a heightened awareness in relation to obligations under the Habitats Directive (92/43/EEC). This may itself be driven by the risk of legal challenge, which to date has focused at project level in Ireland, but there are signs that plans are now coming under more scrutiny.

There is new EPA guidance on SEA alternatives (which resulted from recommendations in the previous study) and this is beginning to add value to the consideration of alternatives, with 5 of the new 10 case studies, all completed after the guidance was issued in 2015, scoring "very good". Notwithstanding this, there is still a long way to go with regard to the consideration of alternatives (see section 5.2 for more detail).

The absence of guidance on monitoring and lack of resourcing to carry out monitoring following the SEA/ plan adoption were identified as a problem by some of the plan-makers, as was personnel changes, which internally leads to the loss of institutional memory between plan cycles, a particular issue potentially for county development planning. The actual objective of monitoring was also queried by interviewees – is it to monitor the plan/programme or the environment, and to what effect?

The review of SEA documentation clearly points to strong input from some of the SEA statutory consultees, as evidenced by their level of engagement in workshops and through submissions. Interviewees point to the EPA as taking the lead role, providing training, valuable advice and guidance to both plan-makers and SEA practitioners on good practice, etc., more so than the other consultees. The EPA was seen to present a consistent and accessible statutory consultee, with clear champions identified within the organisation. This approach is not mirrored by other consultees, a fact attributed to changes to government departments, including their remit and personnel. Indeed, one interviewee noted that, because the SEA legislation on statutory consultees has not kept pace with these changes, SEA practitioners have, in some cases, adopted a "just in case" approach to consulting with a range of government departments, to avoid a procedural misstep that could later lead to legal challenges.

Overall, interviewees saw SEA as an opportunity to make plans/programmes better. This is manifested through tangible changes in policies/actions and through more intangible awareness raising and education. In many of the case studies, it was reported that plan-makers were open and receptive to SEA findings and that there was close communication between the SEA and the plan-making teams, facilitating environmental integration. However, the nature of the plan or programme can affect this, particularly for those sectors that have not traditionally applied environmental assessment or prepared plans or programmes that take detailed account of environmental impacts. In the case of the Nitrates Action Programme, for example, there were limited opportunities for change as it was articulated through very formal legal language and did not lend itself to SEA mitigation. In any case, the non-governmental organisation (NGO) representative argued that many changes to the final version of a plan arise from political reasons rather than the SEA process. Nevertheless, the EPA representative indicated that SEA experience and ongoing initiatives such as the National SEA Forum (which brings together sectoral representatives to share SEA experiences and developments) are enhancing context effectiveness by making plan-makers more open to the SEA process and more willing to engage and to integrate SEA findings into plans/programmes.

5.2 Procedural Effectiveness

Procedurally, there was variation between the case studies reviewed. Although the overall favourable context and general openness to SEA noted under the contextual dimension undoubtedly correlates with some good procedural performance – with Environmental Reports generally meeting the requirements of the SEA Directive – there were notable limitations across the majority of the plans/programmes reviewed in terms of consideration of alternatives and monitoring. Interestingly, these were also limitations noted in the first effectiveness study.

One procedural aspect is the baseline description, which shows considerable variation across plans/programmes. This is somewhat surprising given the improvements in data availability and data management since the last effectiveness study. The description of the baseline environment was considered poor in some of the new case studies reviewed, with a lack of information on the evolution of the environment in the absence of the plan, insufficient use of mapping to support descriptions and a lack of information on existing pressures.

The value of an extensive baseline was questioned by one SEA practitioner, who preferred instead to focus on key issues/pressures. However, there is a clear reluctance by SEA practitioners and, indeed, statutory consultees to scope out topics at such a strategic level; this can result in information being included that is not particularly relevant to the plan at hand. Interestingly, one of the plan-maker representatives noted that too much detail in the baseline dilutes key environmental concerns, whereas another stakeholder noted that a detailed baseline is essential for an effective SEA, as it leads to more suitable mitigation measures and monitoring requirements. A guidance manual (*GISEA Manual: Improving the Evidence Base in SEA* – EPA, 2017) was recently published to enhance the preparation of the baseline environment reporting with geographic data. A web tool (www.enviromap.ie) has also been developed to centralise over 100 SEA-relevant datasets and facilitate a systematic examination of environmental sensitivity; this should significantly enhance the efficiency and transparency of this SEA stage (González, 2017). Such support tools can be further enhanced by local data, once data sharing and centralisation have been mobilised within the various organisations.

Interviews to support the five case studies from the first effectiveness study explained that difficulties in baseline description were a result of lack of time and resources, as well as of poor data availability, poor quality and lack of up-to-date information. Data gaps are particularly an issue for some SEA themes such as human health, landscape or cultural heritage (González, 2017), and this remains the situation for the new case studies reviewed (see Chapter 6). The NGO representative observed that there is a lot of "cut and paste" in Environmental Reports, often including content that is irrelevant to the problem at hand. One SEA practitioner noted that this may be the result of similar level plans (e.g. national plans) all using the same datasets, so duplication is to be expected, especially when Geographic Information Systems (GIS) are used to support the baseline description. There is also likely to be a commercial factor in this for consultancies carrying out SEA, with standardised approaches being applied, perhaps inappropriately at times. In any case, it was highlighted that this was the SEA stage that took the longest and required significant personnel resources.

Another procedural issue relates to alternatives. Plan-makers continue to struggle to identify reasonable alternatives for their plans and SEA practitioners struggle to elucidate alternatives in order to meaningfully consider them during the assessment. A recurrent theme was the lack of real understanding by some plan-makers about the need to contribute to the identification of reasonable alternatives, considering that it is a SEA requirement and, therefore, up to the SEA practitioner.

The first review recommendations led to the publication of guidance on SEA alternatives (González *et al*., 2015a). The EPA representative indicated that, although this may be improving the consideration of alternatives in some plans/programmes, standard tick-box alternatives are still common. The poor consideration of alternatives can be explained to a degree by political agendas and higher plan policies constraining effective consideration, as already noted in the first review (EPA, 2012) and related literature (González *et al*., 2015b). However, other factors were also raised through the interviews on the 10 new case studies. A key gap seems to remain where the planning team are not properly invested. Obviously, for alternatives to be reasonable, realistic, reliable and

implementable, there must be buy-in from the planning team and decision-makers.

Plan-makers must be open to asking difficult questions and addressing issues in new and innovative ways (a context effectiveness issue). One SEA practitioner also noted that the development of alternatives is possibly not fully recorded in SEA and/or plan/programme documentation (e.g. much of the discussion around alternatives is not adequately documented/recorded), leaving the impression that consideration of alternatives was limited when in fact considerable interaction occurred through discussion and workshopping.

Another procedural element that scored poorly overall was monitoring proposals, with deficiencies noted in most of the 15 case studies reviewed. Monitoring was typically not carried out formally after the plan/programme was adopted. Several of the plan-makers were unclear if monitoring was taking place, partly explained by changes in personnel between planning cycles and/or a lack of appropriate resources. That said, one good practice example of monitoring was the Wild Atlantic Way; the monitoring programme had clearly been informed by the SEA (and subsequently committed to and resourced) and there was clear evidence of monitoring actually taking place. It was previously thought that number of people was the key visitor pressure, but monitoring indicated that people's behaviour is also a critical issue. This can inform better guidance and management options for stakeholders along the route as a result.

The Southern Region Waste Management Plan was also identified as being very good in terms of monitoring. Some case studies suggest that a degree of informal or semi-formal monitoring is being undertaken. For instance, for the land use plan case studies, the mandatory planning requirement to review city/county development plans every 6 years and to formulate interim reports after 2 years was felt to drive the need to take stock of environmental changes, albeit not in a formal SEA monitoring sense. However, a key finding of this research is that monitoring data from one round of plan-making do not seem to inform the next round of plan-making. Similar monitoring deficiencies have been reported elsewhere (e.g. Chaker *et al*., 2006; Wallgren *et al*., 2011; Morrison-Saunders *et al*., 2014; EC, 2019).

5.3 Pluralist Effectiveness

The findings from the case studies suggest that pluralist effectiveness – involvement of a wide range of stakeholders in the SEA and plan-making process – is better in land use planning than in other sectors. However, this may be explained by the greater experience of SEA within this sector or by the fact that SEA consultation is in addition to already strict legal requirements for public consultation within land use planning. Nevertheless, in many case studies, pluralist effectiveness seems to be more about providing information to the public than eliciting responses from the public and is limited to compliance with legislative requirements. Interview feedback noted that the effort to engage marginalised groups through the SEA process is particularly poor.

Significant progress does seem to have been made in effectively engaging stakeholders through scoping workshops, in particular, championed by the EPA. All interviewees agreed that stakeholder feedback at these workshops contributed to shaping the plan/programme and SEA. The use of stakeholder workshops was noted by one SEA practitioner as a very proactive way to explore alternatives, particularly when a good cross-section of stakeholders could be gathered. The same practitioner noted that the SEA does not always reflect the full extent of engagement carried out by the plan team. This can sometimes be significant, but if the SEA team is external to the organisation preparing the plan/programme, it may not be aware of the extent of the engagement undertaken.

Good practices were noted in a number of the SEA Statements reviewed, which provided clear and transparent accounts of how stakeholder feedback had shaped the final plan. This included explanations of why particular aspects of a plan/programme had not been changed. One practitioner noted that the SEA team cannot force things to be changed in a plan/programme and, indeed, there may be good reasons why things cannot be added or altered. What is important is that the reasons are recorded and this requires the planning team to input to the SEA Statement.

The highly technical nature of some plans/programmes and their associated SEAs was considered a block to participation by some respondents. This was also pointed out in the SEA REFIT study (EC, 2019).

Possible solutions point to the use of Executive Summaries for plans/programmes and better NTSs for SEA Environmental Reports. An interesting approach recently trialled in Oxford, UK, saw the SEA consultation include a short NTS as a digital video file, explaining the factors that shaped the plan and the limitations and constraints more visually. The consultant who prepared the material commented on both the time it took to prepare and the associated cost, which are limiters at this stage, but it introduces other options to engage stakeholders.

5.4   Substantive Effectiveness

The review found that decision-makers used SEA information to develop plans/programmes. SEA influenced the plan/programme in most of the case studies analysed, leading to consideration of more environmentally friendly alternatives and changes to policy approaches and policy wording to reduce the environmental impact of the plan/programme. This is consistent with the SEA REFIT findings (EC, 2019).

Incorporating environmental protection policies and guiding principles was also cited by one SEA practitioner as a pro-active approach that has been used to help shape plans/programmes in the early stages of development, by compelling the plan-making team to consider how such policies might be integrated and how they might be relevant (e.g. inclusion of specific commitments in relation to achieving WFD objectives or undertaking robust route and site selection). This can, in turn, support a wider understanding of environmental issues and can act as an encouragement for the plan-making team to see and act on environmental gaps as the plan evolves, as was the case for the National Planning Framework.

The interviews for the five case studies from the previous effectiveness study point to good integration of SEA mitigation into the plans/programmes, contributing to substantive effectiveness (i.e. improvements to the plan). However, limitations were identified, with measures removed or diluted following consultation and finalisation of a plan. The more recent case studies suggest mixed results, with room for improvement. In some cases, there was very limited evidence that mitigation measures were integrated into the final plans/programmes, leaving them isolated instead in the SEA documentation. That said, a notable example of good practice was

the Southern Region Waste Management Plan, as confirmed by the interviews, in which great effort was made not only to include the mitigation in the plan but also to link it to the specific policies that it had been developed to mitigate. This kind of practice is likely to lead to better outcomes in the longer term as industry will refer back to the plan for implementation, not the SEA. Indeed, follow-up interviews with the SEA team indicate that there is evidence that mitigation is being followed through.

Even where mitigation has been integrated into the final plan/programme, the current systemic lack of monitoring hinders a comprehensive evaluation of impact avoidance and sustainable development resulting from SEA. As observed in the first review, and corroborated by some of the interviewees, most Environmental Reports jump straight into the baseline and the current plan; there is no reference to what has happened since the previous plan/programme (e.g. Dublin City or Fingal County Development Plan). In the first effectiveness review this may have reflected the fact that the plans were in the early stages of the planning cycle where SEA had been applied and, as such, reflection was not a key focus. However, this reflection is still not a typical practice, despite the fact that many plans are now in their third or fourth cycle of SEA.

It is also often very difficult to determine whether any environmental changes occur as a result of a given sectoral plan/programme because of there being multiple contributors to overall environmental quality and because of amorphous links between planning hierarchies and sectors. This supports related observations on SEA follow-up (e.g. Partidário and Arts, 2005). In summary, there is an absence of information on substantive effectiveness; on whether or not the case studies and, indeed, other plan/programme SEAs are having any effect on plan/programme iterations; and, ultimately, on sustainable and environmentally positive outcomes. The suggestions to make monitoring reports publicly available and to set up a GIS platform to facilitate monitoring are therefore key recommendations of this report.

An interesting distinction was noted by one interviewee between more direct changes made to a plan through mitigation and more intangible changes made through iterative discussions during the SEA process.

It was suggested that some aspects of substantive effectiveness are difficult to measure as a result (e.g. changes to a plan resulting from the SEA process), but these attitudinal changes and awareness-raising aspects may well translate into better long-term outcomes for sustainability as plan-makers become more aware of the integration of environmental considerations into decision-making.

5.5 Normative Effectiveness

All interviewees agreed that SEA is normatively effective; it helps to promote both long- and short-term environmental protection. This is possibly a reflection of the Irish planning system, whereby there is a requirement to comply with higher level policy commitments that are particularly pertinent to land use planning but which are also reflected in the other sectoral case studies. These include commitments to achieve climate change targets and air and water quality standards, for example, thus addressing global challenges and legislation. The case studies also illustrate that SEA supported the achievement of normative effectiveness by bringing environmental issues to the forefront, in some cases facilitating a reflection of policy values and promoting sustainable development overall, such as was seen in the Southern Region Waste Management Plan SEA, which included a social SEA objective to promote sustainable management of waste at an individual, community, regional and national level. These findings are consistent with the SEA REFIT study, which found that the SEA Directive is either significantly (66%) or partly (28%) contributing to a high level of protection of the environment (EC, 2019).

SEA, as carried out in Ireland, does not seem to promote social dimensions such as the reduction of socio-economic deprivation or the improvement of equity between generations. This is partly because of the environmental focus of the SEA Directive. It suggests that, in the majority of cases, SEA in Ireland acts as a rebalancing in favour of the environment rather than supporting sustainable development overall. That said, good examples of normative effectiveness exist and examples such as the Strategic Integrated Framework Plan for the Shannon Estuary were cited by interviewees as a positive model for bringing multiple stakeholders together to ensure the sustainable development of a shared resource.

5.6 Knowledge and Learning Effectiveness

The interviewees concurred that planners' and consultants' previous experience of SEA not only improves future SEA iterations, but also enables proactive integration of environmental considerations into planning decisions. The EPA representative also observed that the growing SEA experience is resulting in plan-makers wanting to do SEA better. This supports the wider view that the SEA process commonly leads to improved understanding of environmental issues and to capacity building and restructuring within organisations that ultimately contribute to SEA enhancement over time (e.g. Fischer, 2007; Runhaar and Driessen, 2007; Runhaar, 2009; Fundingsland Tetlow and Hanusch, 2012; Acharibasam and Noble, 2014; Dalal-Clayton and Sadler, 2017).

Nevertheless, contrasting experiences were observed in this dimension; although some cases led to organisational restructuring that has resulted in proactive environmental integration since (e.g. EirGrid), other cases point to steep learning curves (e.g. Offshore Renewable Energy Development Plan, Dublin City Development Plan), further hindered by a lack of resources and training, as well as by the loss or reallocation of staff, hampering transformative learning. Loss of know-how and capacity was particularly identified as a local authority issue. This calls for efforts to treat learning as a purposeful rather than as an accidental outcome of environmental assessment (Jha-Thakur *et al*., 2009; Sanchez and Mitchell, 2016) and resonates with an interviewee's recommendation to create a national central body to support SEA.

5.7 Transactive Effectiveness

With regard to transactive effectiveness, that is, whether or not SEA is cost-effective, there were significant differences across sectors. Although land use plan SEAs were more likely to be undertaken in-house, the resource pressures at a time when a city/county development plan is being reviewed remain a significant challenge, so many local authorities still subcontract out the work. A further important consideration is that, for land use plans in particular, flood risk assessment and AA may also be needed. This wider scope may influence the planners to go out of house for the "complete" package, leaving the

internal resources to focus on the actual plan. There are advantages and disadvantages to the use of external consultants. A notable positive is that a third party can challenge institutional thinking more readily than an internal resource. A negative aspect is the recurring loss of knowledge between plan cycles. Procedural costs are difficult to pin down even for land use plans, which, given the relatively standard nature of the development plan process, should offer more certainty on the range of costs.

For other plans and programmes, such as Grid25, the Southern Region Waste Management Plan, National Planning Framework and Greater Dublin Area Transport Strategy, there was strong engagement by plan-makers and managers in the process, but this was often not included in the audit of final costs, making estimates difficult. Interview feedback placed the costs of SEA in the range of €50,000–300,000, but the nature of the plan/programme is a significant factor in overall costs. Costs for the SEA of a very high-level national strategy with limited geographic specificity are quite different from the costs of a regional plan in which sites and routes are identified. Furthermore, the scope of services asked for in tendering often varies significantly, so it is difficult to compare across plans. One international interviewee noted that the real costs of SEA are probably much higher than those recorded, when the involvement by statutory authorities and other agencies is considered. A further potential cost is spending on any legal challenges and reviews later in the planning process, pointing to a much longer life cycle in terms of cost–benefit than might be apparent initially.

The benefits of SEA are even harder to document and quantify than the costs, but they include reduced environmental risks (for instance less/no loss of ecosystem services), better plan implementation resulting from improved wording or filling in of plan-related data gaps in response to SEA, improvements to the plan/programme as a result of SEA-related stakeholder input, fewer objections to the plan/programme and subsequent projects, greater legal certainty, more streamlined project approval when there are SEA–Environmental Impact Assessment (EIA) links and having a "green" consultancy sector. Some of these (e.g. ecosystem services, legal costs, green consultancy) are monetisable, albeit with very large margins of uncertainty. Others are not really

quantifiable, much less monetisable (Therivel and Gonzalez, 2019).

Interviewees generally felt that the benefits of SEA slightly exceeded its costs. This is consistent with the findings of the SEA REFIT study (EC, 2019), which also found that the expertise of the planning authority and the experts carrying out the SEA, and the level of detail of the SEA, affected the efficiency of implementing the SEA Directive. Early indications are that, just by leading to the avoidance of development on a few sensitive sites, the costs of SEA could easily be matched by the prevention of loss of ecosystem services (Therivel and Gonzalez, 2019). More research on this subject is needed, but it could be a great "selling point" for the transactive effectiveness of SEA.

This review, like the European SEA REFIT study, found that post-plan adoption monitoring is generally limited. Monitoring data could provide further information on the benefits of SEA – whether or not it really has protected sensitive sites and prevented environmental harm. The establishment of monitoring systems will require investment, but should deliver net benefits in due course by informing assessments that provide for better plans with a reduced risk of unforeseen impacts. Generally, sharing of costs and resources across agencies and bodies in this regard may improve cost-effectiveness (e.g. the same consultancy carrying out three similar SEAs for the three regional waste management plans). A system such as the recently established EIA portal could act as a host for SEA (and other related environmental) documentation, including monitoring reports, and could therefore also offer opportunities to share information and good practice.

Overall, although delays and costs were incurred in some cases that have yet to be shown to be matched by benefits, it is likely that they are, particularly where the SEA is substantively and normatively effective.

5.8   Overall SEA Performance Since the Last Review

This review has considered how well SEA has performed over seven different dimensions of effectiveness. Broadly speaking, recent practice seems to be more procedurally effective than the case studies in the first SEA effectiveness study of 2012. Overall, SEA seems to be fulfilling its role.

More sectors have engaged in the SEA process and there is, generally, a greater openness to the process. This may in part be driven by the increasing number of legal challenges on project consent and refusals through the Irish and European Union (EU) courts, placing more of a focus on the earlier stages of decision-making than ever before. The profile of SEA continues to be championed by the EPA and this framework is well recognised by plan-makers and practitioners alike. Table 5.1 summarises the findings of the 27 Irish interviews.

However, although considerable progress has been demonstrated in applying SEA in Ireland, and the SEA process is now well "bedded in", challenges remain. The key procedural challenges identified in this review are similar to those experienced in the earlier review, notably alternatives and monitoring. EPA guidance on SEA alternatives (González *et al*., 2015a) has been reported as improving SEA practice, but this is not necessarily evidenced in the materials reviewed. Further examination of the limitations to alternatives development may be needed to fully achieve effectiveness in this area.

In Ireland, monitoring remains the most significant gap in the procedure, and it is clear from the review that plan-makers and SEA practitioners are in need of clear guidance on how to develop effective monitoring. In any case, guidance (see Appendix 1), although valuable, will not be enough to address current monitoring limitations. Plan-makers must commit to implementing monitoring programmes if the feedback loop for future plan cycles is to benefit from properly understanding environmental pressures.

Opportunities exist for better public engagement in both plan-making and the SEA process, because the statutory minimum level of consultation has not been found to be effective at engaging the public. Nevertheless, SEA is leading to changes in plans through both direct and indirect pathways. One of the key pathways that has proved difficult to record is education and awareness raising. This intangible influence can be highly effective at refocusing planning teams to include environmental matters. The interview findings support this, identifying that many of the intricacies of the SEA and plan-making processes go unreported. Although the Environmental Reports fail to capture how the policy context shapes

Table 5.1. Summary findings of the interviews (*n* = 27)[a]

Dimension of SEA effectiveness	Conclusions on SEA effectiveness in Ireland[b]	Other information from interviews
Context	3.0	
Procedural	3.3	
Pluralist	2.7	SEA provides information to the public = 3.9
		SEA elicits information from the public = 3.4
		SEA empowers marginalised groups = 2.7
		SEA integrates public views in plan-making = 3.6
Substantive	2.9	Main changes as a result of SEA are:
		• plan-makers used SEA information to develop the plan
		• new alternatives were added with a greater environmental focus
		• plan became more environmentally and/or socially friendly because of SEA
		• monitoring measures and responsibilities were added
		• decision-makers used SEA information to develop the plan
Normative	3.0	SEA promotes short term environmental protection = 4.2
		SEA promotes long-term environmental protection = 4.7
		SEA promotes reduction of socio-economic deprivation = 2.7
		SEA promotes equity between generations = 2.5
Knowledge and learning	2.8	
Transactive	2.8	

[a]Not all interviewees answered all of the questions.

[b]From 5 = very good/very effective to 1 = poor/not at all.

a plan/programme, the case studies are illustrative of the generally positive and proactive approach to environmental integration in Ireland, which often results in good procedural performance and good substantive outcomes.

Although Environmental Reports do not give any indication as to how time, resources and know-how influence the quality of the various procedural stages of the SEA process, deficiencies in these areas are reported to affect procedural and pluralist effectiveness. An avenue to address these shortcomings comes from the recommendation to create a central permanent resource (i.e. a dedicated environmental assessment post or team) within the planning authority or organisation to help streamline processes, enhance consultation and ensure that organisational memory is not lost, while also optimising resources. There seems to be consensus among Irish stakeholders that SEA is normatively effective in that it enables reflection on policy values and promotes sustainable development. It is also perceived to be transactively effective, with benefits outweighing the costs. There is also general agreement, and the case studies demonstrate this, that SEA is effective at bringing environmental issues to the forefront and improving plan-making. This is summed up by one interviewee's observation that "the environment encompasses often delicate and finite resources that are of greater benefit than any one plan for development – it is important for current and future generations to protect these resources and SEA helps to facilitate this."

This good substantive performance is, however, mostly demonstrated by integration of SEA recommendations into the plans/programmes. Because of poor monitoring, 6 years on from the first review, it still often remains to be shown whether or not SEA is resulting in sustainable outcomes and preventing adverse effects on the environment. Stronger measures to efficiently implement monitoring seem necessary.

6   Identified Data Gaps and Limitations for Ireland

As part of the procedural review of the 10 "new" case studies, data gaps and limitations in the baseline data for use in SEA were identified (Table 6.1). In addition, the following general observations on data gaps and needs were gathered throughout the second SEA effectiveness review:

- Data gaps are one of the key constraints to effective SEA.

- Data gaps are particularly an issue for some SEA themes, such as human health, landscape and cultural heritage.
- Although national datasets are generally easy to retrieve, local data are buried in surveys and Environmental Impact Statements (EISs).
- Local detailed data in EISs are commonly held within organisations, often with confidentiality and copyright clauses, limiting their access.

Table 6.1. Data gaps identified in the 10 reviewed case studies

SEA theme	Identified data gaps and limitations
Population and human health	• Human health (e.g. health status, epidemiology, hospitalisations/deaths for specific conditions) over time • Consumption patterns (food, retail, services, transport, etc.) • Register of contaminated sites • Ecosystem services mapping [only the National Parks and Wildlife Service (NPWS) pilot assessment available]
Biodiversity, flora and fauna	• National habitat map • Habitat and species mapping unavailable or out of date • Lack of quantitative/qualitative information on the majority of species • Only generic conservation objectives are available for protected European Sites (i.e. Natura 2000 network) • Lack of site-specific conservation management plans for the majority of European Sites • Lack of detail on location of qualifying interests in some protected European Sites (e.g. bottlenose dolphins monitored in certain areas only) • Quantitative data on fisheries absent • Quantitative data on birds absent • Lack of data on wider biodiversity/nature conservation issues outside European Sites (e.g. plants of local biodiversity importance)
Air quality and climate	• General absence of detailed air quality and climate change data (data collected at national scale do not allow assessment of local impacts)
Water quality	• Water quality baselines are broad (e.g. WFD reporting periods are every 5 years) • Water leakage information absent
Soils and geology	• Soil productivity maps yet to be prepared • Soil drainage maps yet to be prepared • Limited information on soil organic matter and soil compaction • Karst features database not comprehensive (new features included as information becomes available)
Landscape	• National landscape character map yet to be prepared • Landscape characterisation and sensitivity mapping is inconsistent across counties • Protected views and scenic routes poorly overlap across administrative boundaries
Cultural heritage	• Historical and cultural amenity value surveys absent • Record of Monuments and Places (RMP) not compiled at national level • National Inventory of Architectural Heritage and the county level Record of Protected Structures (RPS) not comprehensive (new features included as information becomes available)
Material assets	• Land use and land cover for Ireland (CORINE serves only as a proxy) • Unregulated quarrying information absent • Insufficient traffic surveys • Commuting data do not differentiate between adults and schoolchildren • Capacity of public services in relation to water, energy and waste management periodically monitored but data not consistent or readily available (e.g. drinking water)

- Data collated at EIA level should be made available to inform future SEAs and EIAs (to enhance knowledge as well as to optimise resources by sharing information, avoiding duplication and supporting monitoring).
- Data are gathered in various formats across departments and there is no centralised repository, affecting not only the baseline stage but also monitoring.
- There is poor overlap or inconsistencies across administrative boundaries for some datasets (e.g. protected views and scenic routes).
- Some relevant baseline datasets are outdated (e.g. habitat maps).
- Data are often collated at the national scale, affecting their usability and relevance in regional and local-level assessments because of limitations in scale and/or level of detail [e.g. greenhouse gas (GHG) emissions].

- There are no data quality check mechanisms in place.
- The description of the baseline environment in SEAs is considered a large undertaking given the limitations above.
- Monitoring programmes rarely address the gaps identified in the baseline.
- Data collation/generation are perceived as an economic burden – state agencies have specific remits and data collation often falls outside their responsibilities.
- Spatial data through GISs can better inform planning (and spatial datasets are increasingly being made available through online portals).
- A shared GIS, supported by environmental information (from governmental sources and both SEA and EIA) and a robust monitoring system should be set up to provide the basis for evidence-based decision-making.

7 Strategic Recommendations

Based on the findings of the second review of SEA effectiveness in Ireland, the following recommendations for future initiatives and actions are put forward to foster and further good SEA practice in Ireland. These are broadly categorised by the SEA effectiveness dimension they aim to improve, but many will help improve SEA across a number of dimensions. They are intended to inform the update of the SEA Action Plan (EPA, 2018a).

Context:

- Each statutory consultee should have a dedicated and consolidated SEA webpage to support their role and facilitate links to key information, or a national SEA website/portal should be developed as a one-stop shop for all information on SEA.
- State the relevant transfers of functions between environmental authorities in the forthcoming revision of the SEA guidelines when updating the contact details for the present SEA environmental authorities.
- Assess available SEA staff/personnel resources in the environmental authorities' departments/ agencies and local authority planning sections to establish the extent of the resource gap and inform workforce planning proposals.
- Some local authorities have employed Environmental Assessment Officers. This should ideally be mirrored in all local and regional authorities. Several local authorities could have a joint Environmental Assessment Officer for resource efficiency.
- Alternatively, create a central permanent resource (i.e. a dedicated environmental assessment post or team) within organisations that helps to streamline processes, enhance consultation and ensure that organisational memory is not lost, while also optimising resources.
- Ensure good communication and close collaboration between the SEA and plan-making teams. The disconnect between the plan-making and SEA teams/processes is a recurring issue in SEA practice. Addressing this can help tackle many current practice issues identified (e.g.

reporting on consultation feedback, integration of mitigation measures). This includes the often-missed step prior to finalising a plan/programme: a dialogue between the plan-making and SEA teams with a view to cross-checking, reinforcing and maximising environmental integration.
- Ensure monitoring and data gap-filling budgets are, as appropriate, allocated for all plans and programmes that are subject to SEA.
- Provide more frequent national-level monitoring data to facilitate a more up-to-date, reliable and accountable basis for environmental assessment and planning. Although some indicators are updated regularly (e.g. water quality), the EPA's State of the Environment and indicator reporting is currently undertaken on a 4-year cycle. Annual State of the Environment reports (or bulletins) would provide more timely and current information for both SEA and planning processes. These would complement (be based on) the statistics and indicators on the Ireland's Environment web page and supplement a broader stock take every 4 years.

Procedural:

- Develop guidance on legal requirements for SEA Environmental Reports, legal challenges, the expected length of a typical SEA report and which parts of the SEA report will be expected to be longer/more robust/more challenged compared with shorter/less robust/less challenged. This could include web links or case studies of SEA reports that have been effective substantively/ normatively but which are short and concise.
- Develop guidance on mitigation measures, including good practice examples, how to ensure that mitigation measures proposed in a SEA are incorporated into the plan, documenting mitigation measures in the SEA Statement and how the mitigation measures identified in the SEA should be incorporated at the project level (tiering).
- Develop guidance on planning hierarchy-specific and sector-specific monitoring objectives, targets and indicators.

- Address key existing data gaps for relevant SEA themes (e.g. landscape, human health) by either collecting new information from relevant agencies/ departments or by making existing information more widely accessible. Refer to the identified data gaps affecting SEA effectiveness when prioritising data collection (see Table 6.1).
- Use technology and innovation to encourage monitoring implementation and to tap into currently available but underused sources of data gathering and sharing (web-based services, citizen science, remote sensing, etc.), support citizen science initiatives and empower the public by giving them a voice, and allow plan-making authorities to tap into local knowledge and data sources:
  - Include in the next EPA funding call a proposal to develop a monitoring application (app). This could link to specific monitoring requirements for a plan and territory [e.g. city/ county development plan, local area plan (LAP)]. This would support citizen science initiatives and empower the public by giving them a voice, while plan-making authorities could tap into local knowledge and data sources. This app could be modelled on the EPA's environmental concerns reporting app (See It? Say It!) and focus on a number of key indicators.
  - Encourage plan-making authorities, and plan-makers in general, to post monitoring requirements on Ecobroker (https://ecobroker. ucd.ie/). Linking practice and science can facilitate monitoring implementation (by getting academics and researchers to undertake projects that facilitate data gathering and inform follow-up processes and outcomes).
- Incentivise monitoring initiatives that go beyond the minimum legal requirements, for instance through awards at the annual EPA Environment Ireland conference or relevant national planning conferences. Awards could address excellence in monitoring and feedback and excellence in innovative and effective mitigation measures (as documented through monitoring). This could be further enhanced by including good monitoring practice examples on the environmental authorities' websites.

Pluralist:

- Develop guidance on effective and meaningful means of consultation with the public and statutory consultees (which moves away from information sessions and correspondence to more active forms of participation).

Substantive:

- The Department of Housing, Planning and Local Government (DHPLG) should revise the Department of the Environment, Heritage and Local Government SEA guidelines (DEHLG, 2004) to clarify/reiterate that SEA (and AA) mitigation must be integrated into a final plan or else a valid explanation should be provided for why the recommended mitigation is not integrated. This should include clarification and recommendations on how outcomes of SEA should be taken into account during finalisation of a plan.
- Encourage monitoring findings to be made publicly available and published on the plan-makers' websites alongside the plan/programme and SEA-related documentation, at least as part of plan/programme reviews. This would ensure that monitoring is properly undertaken and monitoring reports are prepared. For example, in the context of land use planning, ensure that a monitoring report is published when a plan review is initiated (i.e. 2 years into plan implementation). Although making it a requirement would involve amending the SEA Regulations, it could be fostered by including it as a best practice recommendation in the revision of the DEHLG (2004) SEA guidelines.
- Undertake monitoring meetings or workshops as part of the EPA championing role, in combination with the scoping or alternatives workshops that are currently carried out, during the preparation of a plan/programme. There is a need for better collaboration on monitoring to ensure buy-in by the plan-maker and stakeholder. This would ensure consistency between authorities and a stepwise improvement of monitoring practice.
- Set up a monitoring strategy at the national level to collate, co-ordinate and improve the availability of (spatial) data from existing monitoring mechanisms (e.g. EPA, heritage, water) and provide centralised and relevant information across planning hierarchies and sectors. These

data/information could be housed in a centralised environmental baseline data portal. This would be a rapid and systematic way to address ongoing monitoring limitations and a way to reduce the costs of evidence gathering for the next round of SEAs.

Normative:

- Include information in the EPA's SEA Pack (EPA, 2018b) and SEA Process Checklist (EPA, 2008) about legal standards that SEAs should be testing against (e.g. air and water quality standards, integrity of Special Protection Areas – SPAs/ Special Areas of Conservation – SACs, climate change targets) and include a criterion in the SEA Process Checklist about whether the impact assessment is compliant with legal standards. Standards should be referred to at the baseline environment, SEA framework/assessment and monitoring stages. This would ideally be done in collaboration with the DHPLG.
- Undertake a review of the quality of a cross-section of SEA Statements. This could be supported by the preparation of a SEA Statement checklist. It would help to determine if they meet the overall statutory requirements, as well as documenting overall how a plan/programme and SEA process were integrated. It would also facilitate the ongoing review of SEA effectiveness. A SEA Statement quality check package could be included in the EPA's existing SEA Process Checklist (see the recommendation below).
- Revise the existing SEA Process Checklist (EPA, 2008). This checklist could be used as a quality check framework once it is revised to address not only the process but also the reporting requirements; updated to include more recent and relevant good practice; and published (as the current version is still a consultation draft). This checklist would also benefit from a streamlined "rapid check" complementary section.

Knowledge and learning:

- Opportunities should be explored to link co-ordinated continuing professional development (CPD)-accredited SEA training with EIA/AA/WFD/ SFRA/climate change adaptation planning to generally upskill the environmental assessment understanding across public authorities.
- An e-learning module on SEA should be developed, with relevant linkages to EIA/AA/WFD/SFRA.
- The findings of the second SEA effectiveness review should be presented at the Environment Ireland 2020 conference and other relevant conferences.
- Provide training and capacity building on SEA Statements and monitoring for SEA practitioners/ consultants and plan-makers, along with the new guidance on SEA monitoring and the SEA Statement (see Appendix 1). This would enhance current practice and promote proactive and practical monitoring commitments.
- Develop and run a training course on alternatives, based on the EPA's guidance on alternatives, to make statutory consultees and plan-makers more aware of good practice in identifying reasonable alternatives, assessing and comparing alternatives, and explaining the choice of preferred alternatives. This could be combined with other relevant aspects such as mitigation and monitoring and updated guidance documents.
- SEA Statements could include a section on key learning and outcomes, describing, among other things, what the planning authority has learned about the SEA process.

Transactive:

- Encourage research into quantification/ monetisation of the benefits of SEA, based on Irish SEA examples (e.g. ecosystem service values protected by protecting sensitive sites from development, health benefits from preventing air pollution).

All aspects of SEA effectiveness:

- Run a 1- or 2-day workshop on SEA effectiveness and those aspects of the SEA process that promote various dimensions of effectiveness. This is planned as part of this second review of SEA effectiveness in Ireland and is expected to be held in quarter 1 of 2020.
- To provide a focal point to ensure that the benefits of monitoring are achieved, a national monitoring

body or forum could be created. This would work with plan-making authorities to ensure that monitoring takes place and any unforeseen adverse effects are addressed. Although this is an aspirational recommendation that requires significant resources, a dedicated team looking at trends and engaging with planners during plan-making could play an important advisory role to build in mitigation and develop more sustainable plans/programmes by addressing environmental trends.

- Implement a shared GIS platform, supported by environmental information (from government sources, for both SEA and EIA) and a robust monitoring system that feeds data into this GIS platform to provide the basis for evidence-based decision-making.

- Establish an annual environmental award with other relevant departments such as the Department of Communications, Climate Action and Environment (DCCAE), Department of Culture, Heritage and the Gaeltacht (DCHG) and DHPLG to reward good practice in SEA, EIA and AA. This will incentivise good practice and could be used to highlight key issues, such as monitoring, through targeted awards.

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Abbreviations

AA	Appropriate Assessment (under the Habitats Directive)
DCCAE	Department of Communications, Climate Action and Environment
DHPLG	Department of Housing, Planning and Local Government
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
EU	European Union
GHG	Greenhouse gas
GIS	Geographic Information Systems
LAP	Local Area Plan
NGO	Non-governmental organisation
NPWS	National Parks and Wildlife Service
NTS	Non-Technical Summary (of the Environmental Report)
REFIT	Regulatory Fitness and Performance
SDG	Sustainable Development Goal
SEA	Strategic Environmental Assessment
SFRA	Strategic Flood Risk Assessment
WFD	Water Framework Directive

Glossary

Context	For the purpose of this research, a SEA effectiveness dimension that relates to whether or not appropriate legislation and guidance exist and competent authorities are clearly identified and have adequate capacity to carry out SEA, etc.
***Ex ante* effectiveness**	In the context of this research, the effectiveness relating to the SEA procedure that leads to the preparation of the Environmental Report and its effect on the related plan/programme.
***Ex post* effectiveness**	In the context of this research, the effectiveness resulting after the SEA procedure has been carried out (e.g. during plan implementation).
Knowledge and learning	For the purpose of this research, a SEA effectiveness dimension that relates to whether or not the stakeholders involved in the SEA change their way of thinking as a result of the SEA and whether or not monitoring of the plan's actual impacts helps to improve wider SEA practice.
Normative	For the purpose of this research, a SEA effectiveness dimension that relates to whether or not the SEA supports, for instance, achievement of sustainable development and mutually reinforcing gains, greater equity and minimisation of trade-offs.
Plan	In the context of spatial planning, the framework for land use or sectoral actions in a particular area (e.g. regional, county, city, town or local area).
Pluralist	For the purpose of this research, a SEA effectiveness dimension that relates to whether or not the SEA helps to achieve greater public participation and helps to accommodate competing points of view.
Procedural	For the purpose of this research, a SEA effectiveness dimension that relates to whether or not the stages of the SEA process are carried out well, for instance whether or not good baseline data are collected or alternatives are considered well.
Programme	In the context of spatial planning, the overall strategy that establishes the requirements to be incorporated into plans.
SEA	Assessment of the effects of certain plans and programmes (and, in some jurisdictions, policies) on the environment. It presents a structured and participative process containing a set of tools to assist in the integration of environmental considerations and promote informed decision-making at plan/programme level.
SEA effectiveness dimensions	In the context of this research, the various aspects considered when examining the overall effectiveness of the SEA process.
Substantive	For the purpose of this research, a SEA effectiveness dimension that relates to whether or not the SEA leads to good outcomes on the ground, for example whether or not environmentally harmful impacts are avoided.
Transactive	For the purpose of this research, a SEA effectiveness dimension that relates to whether or not the SEA process is efficient, for example whether or not it lengthens or shortens the plan approval process, how much it costs and whether or not personnel with adequate skills are readily available.

Appendix 1   Guidance on SEA Statements and Monitoring

This appendix provides guidance on SEA Statements and monitoring (Figure A1.1). This guidance is specific to the Irish context but has wider international applicability. The monitoring recommendations include guidance on indicators to facilitate a more consistent and coherent approach at this SEA stage.

A1.1   SEA Statements

A1.1.1   Introduction to SEA Statements

Under the SEA Directive (2001/42/EC), plan-makers are legally obliged to take into account the findings of the environmental assessment (EC, 2001). Article 8 of the Directive specifies that the Environmental Report and the opinions expressed during consultations shall be taken into account by the plan-making authority during the preparation of the plan or programme and before its adoption.

Article 9 requires plan-making authorities to report on how the findings of the SEA and the results of the associated consultation have been integrated into the plan/programme. This requires the preparation of a statement summarising:

- how environmental considerations have been integrated into the plan or programme;
- how the environmental report and consultation comments on it have been taken into account;
- the reasons for choosing the plan or programme as adopted, in the light of the other reasonable alternatives dealt with (in the Environmental Report and the associated consultation); and
- the measures decided concerning monitoring.

This "SEA Statement" must be made available when the plan/programme is formally adopted.

SEA Statements have the potential to play a central role in summarising the effectiveness of the SEA process. They can capture how environmental considerations have shaped the plan/programme (e.g. through policy wordings, revisited zonings and other measures) and how the process has contributed to making the plan or programme more sustainable. This is best accomplished by presenting the proposed mitigation measures and relevant related recommendations and indicating how they have been considered and/or incorporated into the plan/ programme. They can also capture any changes to the plan made in response to consultation. They also
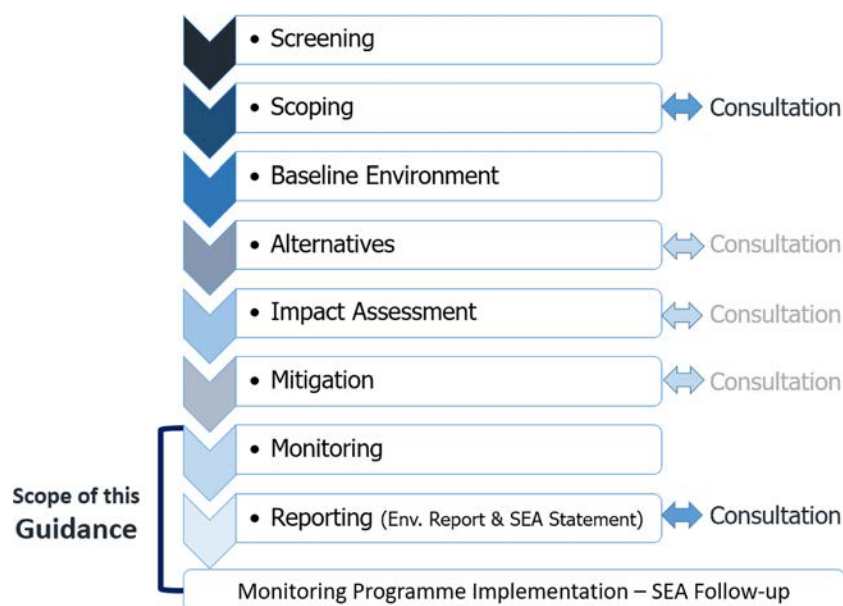

Figure A1.1. Scope of this guidance with regard to the main SEA stages.

typically present the monitoring framework that is to be used to follow up on plan/programme implementation and determine real environmental impacts on the ground (see section A1.2). To best achieve this, ensuring good communication and close collaboration between the SEA and plan-making teams is central. The disconnect between the plan-making and SEA teams/processes is a recurring issue in SEA practice. Therefore, addressing this can help tackle many of the current practice issues identified (e.g. reporting on consultation feedback, integration of mitigation measures and monitoring commitments into the plan/programme).

Much of the information that must be included in a SEA Statement should ideally already be included in the Environmental Report (e.g. the alternatives considered). Indeed, the SEA Statement should "tell the story" of the SEA process from start to finish.

A1.1.2 Current shortcomings

SEA Statements, along with monitoring, are probably the weakest area of SEA practice both nationally and Europe wide. This project found shortcomings across all aspects of SEA Statement requirements, including:

- lack of detail on how environmental considerations have been integrated;
- listing of mitigation measures without an indication as to whether or not they have been incorporated into the plan/programme;
- poor documentation of consultation feedback and how this has been taken into account;
- lack of monitoring indicators for plan/programme implementation; and
- an unnecessary emphasis on the SEA methodology followed.

The review of Irish cases studies identified significant inconsistencies in the content and level of detail of the SEA Statements prepared in Ireland to date.

Currently, the consultation section in SEA Statements typically only briefly introduces the consultation mechanism and time frame for the draft plan/programme and SEA Environmental Report. There is frequently no indication as to how consultation was undertaken, nor how the opinions and feedback gathered through SEA consultation have informed the drafting of the plan/programme. Moreover, SEA consultation and planning consultation are sometimes carried out in parallel rather than jointly, with few or no links between them. Although acknowledging that these are legally separate processes and adhere to different legislative requirements, co-ordinating consultation efforts or sharing information on consultation outcomes can improve both processes. In particular, the plan-making team needs to be mindful of the issues raised, regardless of whether they are specifically directed at the plan/programme or the SEA.

For most plans/programmes, there is an initial SEA scoping consultation followed by an Environmental Report and draft plan/programme consultation period, fulfilling the consultation requirements under the SEA Directive. However, in some cases, particularly in the case of land use development plans, as it is a specific regulatory obligation under the Planning and Development Acts, the planning team undertakes more extensive consultation as part of the plan-making process. This consultation is often not communicated to the SEA team, nor is it adequately documented to allow the SEA team to review and understand the feedback that might have been given by stakeholders and the public at those times. It is not always practical for the SEA team to be represented at every meeting, workshop or public event, but better communication of consultation feedback by the plan-making team can bridge the knowledge gap between plan-making and SEA teams considerably; consultation undertaken during the planning process can include feedback on issues of relevance to the SEA process.

Furthermore, although the SEA Directive requires the preparation of SEA Statements, it does not require them to be checked, in terms of either their completion or, indeed, their quality. This has led to some avoidance of SEA Statement preparation (or at least publication); for instance, SEA Statements were not available online for three of five SEA case studies from the first review of SEA Effectiveness in Ireland (EPA, 2012) that were revisited for this study.

A1.1.3 Examples of good-quality SEA Statements

The key to a good SEA Statement is a clear account of how the findings of the SEA have been taken into account during plan-making. The case studies reviewed within the project have revealed a number of good SEA Statement practice case studies.

The following examples show how the different components of an SEA Statement can be presented. They are organised by the three requirements of the SEA Directive concerning SEA Statements.

- Boxes A1.1 and A1.2 show how environmental considerations have been integrated into the plan or programme.
- Boxes A1.3 and A1.4 present good examples of how the Environmental Report, and consultation comments on it, have been taken into account in the plan/programme.
- Boxes A1.5 and A1.6 present good accounts of the reasons for choosing the plan or programme as adopted, in the light of the other reasonable alternatives dealt with.

Note that the inclusion of an example in the following boxes does not mean that the entire SEA Statement meets good practice.

Box A1.1. SEA Statement explaining how environmental considerations have been integrated into the plan/programme: timing of the planning and SEA processes

The plan: Clare County Development Plan 2017–2023	
Context: County development plans set out an overall strategy for planning and development of the county over a 6-year period. The plans are "cyclical" in that new plans emerge every 5–10 years. This was the county's seventh development plan.	
URL to the SEA Statement: https://www.clarecoco.ie/services/planning/clare-county-development-plan-2017-2023/	

Good practice:
The following table shows the links between the planning and the SEA process. The two processes started at the same time and various consultations and reports ran jointly for the plan and the SEA. This enabled better integration of SEA findings into the plan throughout the various plan-making stages.

Clare County Development Plan 2017-2023	Strategic Environmental Assessment (SEA) and Appropriate Assessment (AA)
Commence preparation of Draft Plan Pre-Draft Consultation Period 1st October 2015 – 25th November 2015	Commence review and preparation of SEA Scoping Process Pre-Draft Consultation Period 1st October 2015 – 25th November 2015
Commencement of public display and invitation of submissions on Draft Plan, Environmental Report and Natura Impact Report 8th December 2015 Closing date for public submissions on Draft Plan 29th February 2016	
Chief Executives Report on Submissions received to Draft Plan, Environmental Report and Natura Impact Report (for Elected Members) 19th May 2016	
Consideration of Chief Executive's Report by Elected Members (resolve to alter or make, amend or revoke Draft Plan, Environmental Report and Natura Impact Report) 25th July 2016	
	Determination of Requirement for SEA/AA in accordance with S.12 of the Planning & Development Act (within 2 weeks of resolution)
Public Display of Amendments to Draft Plan and consultation period 13th September 2016 – 12th October 2016 (inclusive)	Public Display of Amendments to Environmental Reports and consultation period 13th September 2016 – 12th October 2016 (inclusive)

Box A1.2. SEA Statement explaining how environmental considerations have been integrated into the plan or programme: environmental input in the plan/programme

The plan: Wild Atlantic Way Operational Programme 2015–2019
Context: The Wild Atlantic Way is a tourism initiative by Fáilte Ireland that has developed Ireland's first long-distance touring route.
URL to the SEA Statement: http://www.failteireland.ie/FailteIreland/media/WebsiteStructure/Documents/2_Develop_Your_Business/Key%20Projects/Strategic-Environmental-Assessment-Statement.pdf

Good practice:

This extract from the SEA Statement clearly describes the environmental considerations that were integrated into the plan. They are specific to a tourism plan. For other types of plans, the key environmental considerations integrated could be, for instance, energy efficiency standards, requirements for biodiversity net gain or buffer zone, or improvements to walking/cycling/public transport infrastructure.

Key aspects of the Operational Programme where environmental input was integrated include:

- Visitor Management

  - With a route extending along the entire western seaboard, the Programme facilitates contributions towards improvements in environmental management and protection by allowing for both: the management of visitors at a macro spatial level (in terms of what sections of the western seaboard could accommodate increases in visitors); and the management of visitors at a micro spatial level (in terms of what areas adjacent to viewing points, lay-bys etc. should be avoided).

  - The Programme also facilitates the management of visitors across the tourist season so that growth can be sought in times outside of the summer peak.

- Focus on Paid Bednights rather than Visitors

  - The objective of growing length of stay (paid bednights) rather than number of visitors has less potential to result in adverse environmental effects.

  - Increased length of stay in the context of the touring route is likely to lead to a better geographic distribution of visitors – which will reduce environmental and infrastructural stresses and associated effects in popular areas.

  - The Programme facilitates for a better seasonal spread of bednights – which can reduce environmental and infrastructural stresses and associated effects during peak months.

- Environmental Management and Sustainability Strategy

  - The Programme's Environmental Management and Sustainability Strategy which requires all emerging developments and activities to continue to comply with all relevant environmental and planning requirements – as well as with Fáilte Ireland Wild Atlantic Way Guidelines for the consideration, design, management and monitoring of new and existing visitor initiatives.

  - The Programme includes an 'Environmental Management for Local Authorities and Others' Appendix comprising various provisions which will be complied with by local authorities and others at lower levels of decision making in order to get funding. These measures are reproduced at Table 2.1 below.

Box A1.3. SEA Statement indicating how the Environmental Report and consultation comments on it have been taken into account in the plan/programme: integration of mitigation measures

The plan: Eastern and Midlands Region Waste Management Plan 2015–2021
Context: There are three waste management regions in Ireland, of which this is one.
URL to the SEA Statement: http://emwr.ie/wp-content/uploads/2018/11/08-SEA-Statement.pdf

Good practice:

The following table shows how mitigation measures proposed in the Environmental Report (middle column) have been integrated into the plan (last column). It is an effective way of showing in the SEA Statement that the Environmental Report has led to real changes in the plan. The SEA team is most suited to completing the middle column; the planning team is most suited to completing the last column. This offers considerable transparency and requires accountability by the planning team when SEA (or AA) mitigation is not being integrated into the plan (as impacts may not be avoided).

Alternatives	Mitigation Measures Proposed in SEA Environmental Report	Included in the RWMP
Section 7.2 Self-sufficiency	To address the possibility that wastes would continue to be exported despite capacity coming on-stream in Ireland, a strong commitment to self-sufficiency and the proximity principle would need to be factored into the strategic approach.	Policy A.4 deals with the issue of self-sufficiency. Wording has been added to the policy since the draft plan to strengthen the position. In addition, the DECLG is looking at policy and / or economic options to reduce the exporting of residual wastes. The full wording of Policy A.4 is: *Aim to improve regional and national self-sufficiency of waste management infrastructure for the reprocessing and recovery of particular waste streams such as mixed municipal waste, in accordance with the proximity principle. The future application of any national economic or policy instrument to achieve this policy shall be supported.*
Section 7.5.3 Resource efficiency & circular Economy	A Code of Practice shall be prepared for the *Preparation for Reuse* sector and this will be rolled out alongside an education and awareness campaign at the local level to assist operators in delivering a positive sustainable service overall. Registration of activities should also be considered.	Policy Action C.1.1 in the final RWMP includes a commitment to preparing a guidance note .
Section 7.5.5 Infrastructure (Collection)	An awareness campaign to support the rollout of brown bins is required. Ongoing review of the feasibility for indigenous paper, glass and metal recycling capacity is required as part of the overall strategy for self-sufficiency to determine if volumes of waste could reasonably support smaller regional facilities rather than sending them for export.	Policy Actions B.2.1, B.2.3, B.4.3 all address the issue of awareness and prevention campaigns. Although not specifically referring to rollout of brown bins the wording in these policy actions encompasses a range of possible issues such as the brown bin collection service. In addition Policy Action F.1.4 commits to allocate resources to monitor the schedule for the roll-out of brown bins to households.
Section 7.5.5 Infrastructure (Backfilling)	Future authorisations for backfilling should ensure proper siting of facilities in line with appropriate siting guidance.	Environmental protection criteria for the siting of waste facilities have been strengthened and are included in Section 16.5 of the final RWMP.
Section 7.5.10 Protection	To mitigate the potential spread of IAS, a qualified ecologist should undertake survey for IAS before waste is disturbed. A	Commitments in relation to IAS have been made in Section 16.5, and also in Policy Action G.2.4.

Box A1.4. SEA Statement indicating how the Environmental Report and consultation comments on it have been taken into account in the plan/programme: consultation responses

The plan: National Mitigation Plan 2017
Context: This plan lays the foundations for how Ireland is to transition to a low-carbon, climate-resilient and environmentally sustainable economy by 2050. The plan covers many issues, including the built environment, electricity generation, agriculture/forestry and transport. There were 124 consultation submissions on the plan and SEA.
URL to the SEA Statement: https://www.dccae.gov.ie/documents/SEA%20Statement%20July%202017.pdf
Good practice: This SEA Statement summarises the consultation responses by theme and provides an explanation of how the plan was changed in response to the comments. The table below relates to alternative fuels for vehicles. This approach works particularly well where there are a lot of consultation responses. For fewer responses, it would be possible to list each response and explain how/whether the plan was changed in response to the submission.

Issue raised: Alternative Fuels

Alternative transport fuels (electric vehicles, biogas for buses, CNG, etc.) have been suggested as viable replacements for fossil fuels. Coupled with this, one respondent suggested an outright ban on fossil fuel based passenger cars by 2030. While an outright ban may not be possible in the specified timeframe, it is clear that a transition from fossil fuel vehicles to low carbon or zero carbon transport fuels is a key measure for the sector.

Influence on the final NMP

The integration of the NMP with the National Policy Framework: Alternative Fuels Infrastructure for Transport in Ireland: 2017-2030 is a key element of the transport measure and the following text has been provided for context in the chapter:

By 2050, the technological ambition is for the nation's car fleet, along with some of our public transport buses and rail lines, to be low/near zero emissions. This follows on from the stated ambition in the National Policy Framework: Alternative Fuels Infrastructure for Transport in Ireland: 2017-2030 that all new cars and vans sold in Ireland from 2030 will be zero emission (or zero emission capable).

Measure T7 of the draft NMP relates to the National Policy Framework on Alternative Fuels Infrastructure for Transport and this measure is unchanged for the final NMP.

Measure T3 (Low Emission Vehicle (LEV) Incentivisation) remains in the final NMP and additional text has been added for context relating to research by GNI on large scale renewable gas injection points on the gas network and the National Policy Framework: Alternative Fuels Infrastructure for Transport in Ireland: 2017-2030. This is projected in the longer term with Measure T18 (Low Emission Vehicle (LEV) Incentivisation).

Changes to the final NMP

Further introductory text and a new set of actions specifically relating Measure T3 have been added as follows:

Action 52: Maintain a grant scheme for EVs. Support levels to be reviewed annually.

Action 53: Deployment of 14 CNG refuelling stations and a renewable gas injection facility.

Action 54: Broaden the accelerated capital allowance (ACA) tax incentive for companies to encourage investment in refuelling infrastructure and equipment for natural gas, both CNG and LNG.

Furthermore, there is an additional action specified to implement Measure T7 National Policy Framework on Alternative Fuels Infrastructure for Transport:

Box A1.5. SEA Statement indicating how the Environmental Report and consultation comments on it have been taken into account in the plan/programme: consultation approach and responses

The plan: Eastern and Midland Regional Spatial and Economic Strategy 2019–2031	

Context: This strategic plan identifies regional assets, opportunities and pressures and provides appropriate policy, objective and target responses to bring forward the National Planning Framework in a manner that best reflects the challenges and opportunities of the region.

URL to the SEA Statement: https://emra.ie/dubh/wp-content/uploads/2019/06/SEA-Statement-EMRA-RSES.pdf

Good practice:

The SEA Statement describes the non-statutory public consultation (in addition to the statutory consultation with the environmental authorities) undertaken at the scoping stage, which helped to shape the environmental assessment. It also describes how the draft plan and SEA documentation were subject to two rounds of statutory consultation. In response to the comments received during the first consultation period of over 11 weeks, material amendments were made to the plan. The proposed amendments were put on public display for a period of 4 weeks, during which time additional submissions were received and further adjustments were made to the plan.

The SEA Statement summarises, separately, key environmental issues raised during each of these two consultation periods, clearly noting how the submissions (including transboundary submissions) were addressed/incorporated into the plan.

| Department of Rural and Community Development (DRCD) | • The RSES is noted to use the CSO's definition of rural areas which is not consistent with the target of constituency of the DRCD or with the NPF.
• The RSES must reflect national rural development policy (towns up to 10,000) as well as villages and open countryside.
• The recognition of the need to promote new economic opportunities in smaller towns and rural areas, as well as town centre revival, is welcomed.
• Suggested rewording of RPO 4.23 to "ratio of jobs to local workers".
• RPO 4.50 should recognise that in addition to supporting "ready to go projects" under the Rural Regeneration & Development Fund, other projects which have clear goals but require further development are also supported; deleting the phrase "ready-to-do" would achieve this.
• Noted there is scope to expand RPO 4.52 to support the diversification of rural economies and job creation.
• Unclear what RPO 4.55 is intended to achieve as currently drafted, as not consistent with the NPF in supporting rural diversification.
• Section 1.6 – Regional Profile uses Census 2011 figures.
• Chapter 2 – Strategic Vision does not correctly reflect the NSOs in the NPF (referring to Strengthened Rural Economies and Communities); RSO 3 should capture economic as well as spatial development.
• Welcomes reference to improving social inclusion.
• Administrative boundaries do not confine economic and social development and regional collaboration is important and should be implemented across the three regions.
• Growth Strategy places strong focus on North-South collaboration – should also include collaboration/connectivity with the other NUTS II regions.
• Athlone and Key Towns in the Outer Region should also look to the west and south in relation to building economic activity/trade. | The RSES has omitted reference to 1,500 population in the definition of rural areas.
Term 'ready-to-go' omitted from RPO.
RPO 4.79 amended by the insertion of the following additional text following 'open countryside': *And to support the diversification of rural economies to create additional jobs and maximise opportunities in emerging sectors, such as agri-business, energy, tourism, forestry enterprise.*
The following new RPO 4.84 added: *Support the rural economy and initiatives in relation to diversification, agri business, rural tourism and renewable energy so as to sustain the employment opportunities in rural areas.*
In relation to the concerns with RPO 4.82 on development that is urban in nature, it is considered reasonable and proper planning practice that economic development that is urban in nature should in the first instance locate in urban areas. In association with amendments proposed in to the RSES it should be noted that such urban locations can be located in rural areas. It is therefore not considered necessary to amend this RPO.
The reference to 2011 census in Figure 1.5 was incorrect, it now reads 2016.
RSO 3 amended to reflect a need to strengthen rural, networks, economies and communities.
New sections under the heading of 'Strategic Connections' is added which includes sections on 'Strategic Connections to the Northern and Western Region', Strategic Connections to the Southern Region' and 'Eastern Economic Corridor; Dublin-Belfast-Rosslare Europort'. |

Box A1.6. Reasons for choosing the plan or programme as adopted, in the light of the other reasonable alternatives dealt with: SEA Statement information on the alternatives considered, their main impacts and the preferred alternative

The plan: Dublin Port Masterplan 2040

Context: This masterplan sets the framework for the development of Dublin Port. It was adopted in 2012 and reviewed in 2018.

URL to the SEA Statement: https://www.dublinport.ie/wp-content/uploads/2018/04/06.-DPC_MP_SEA_-POST-ADOPTION-STATEMENT-Feb-2012.pdf

Good practice:

In Ireland, most SEA alternatives are prepared at the "whole plan" level (e.g. current plan vs new plan vs no plan); this is not good practice. As has been highlighted in guidance on SEA alternatives (González *et al*., 2015a), good practice involves considering "within plan" alternatives. The example below uses the latter approach, as captured in the SEA Statement. The flow chart clearly shows the alternatives considered, assessed and compared in the Environmental Report and which alternatives are preferred (yellow).

The SEA Statement explains, for each set of alternatives, why the preferred alternative was chosen, for instance:
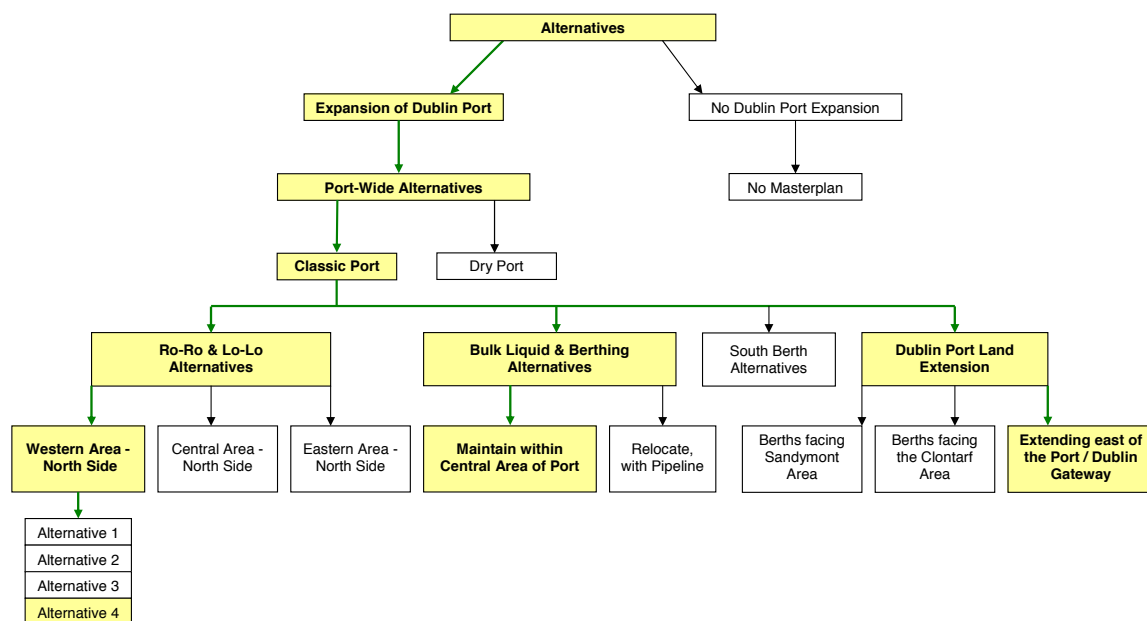
A1.1.4   Opportunities to improve SEA Statement practice

When preparing SEA Statements, the following recommendations are put forward to improve current Irish practice:

● Include as much information as possible needed for the SEA Statement in the Environmental Report itself. This will show how the Environmental Report has been influential, "tells the story" of the SEA process and makes post-adoption compilation of the SEA Statement much easier.

● Include a consultation section recording the process: who was consulted, when, what the key consultation comments were, and how they were incorporated in the SEA and the draft plan/programme. To capture the links between SEA and planning consultation, and to aid a comprehensive reporting of how consultation feedback has contributed to shaping the plan/programme, it is recommended that plan-makers prepare a consultation report and that this is shared with the SEA team.

● Include a clear table listing the proposed mitigation measures and an explanation of where/how they have been incorporated within the plan/programme and, if they have not been incorporated, the reasons why. In order to efficiently and accountably do this, it is important to ask plan-makers to provide related explanations, as their reasons for not incorporating particular proposed mitigation measures, which may be valid, are commonly unknown to the SEA team. Capturing and recording explanatory reasons not only ensures transparency and accountability, but also promotes environmental awareness and ownership of mitigation measures among plan-makers.

● Include a section on key learning and outcomes, describing, among other things, what the planning authority has learned about the SEA process. This should include an outline of any changes within the organisation (e.g. training of staff, setting up of an environmental team or environmental leader, mechanism for sharing knowledge and data between departments/sections within the organisation).

● Consideration should be given by statutory authorities to an annual review of a cross-section of SEA Statements for key plans and programmes to determine if they meet the overall statutory requirements, as well as documenting overall how the plan/programme and SEA process were integrated. This would facilitate the ongoing review of SEA effectiveness. The plans/programmes for review could be agreed by the National SEA Forum/statutory environmental authorities. Criteria for the review (e.g. in the form of an SEA Statement checklist) could be agreed in advance and reflect the relevant aspects of this guidance.

A1.1.5   SEA Statement: step-by-step guidance for practitioners

The implementation of the above recommendations can be facilitated as follows:

1. Document the main stages of the plan-making and the SEA processes on a joint timeline. This should summarise how the SEA was carried out in parallel with, integrated into and influenced the plan-making process.

2. Explain the environmental commitments in the plan/programme: does it have a separate environmental chapter, environmental policies and/or wording that avoids or limits environmental impacts?

3. Include a table listing the SEA's proposed mitigation measures and how they link with the potential environmental impacts identified in the assessment. Provide, in the same table, an explanation of where they have been incorporated and, if they have not, the reasons why. This latter column should be completed by the plan-makers. It could be informed by an often-missed step prior to finalising the plan/programme: a dialogue between the plan-making and SEA teams with a view to cross-checking, reinforcing and maximising environmental integration.

4. Include a table listing other amendments made to the plan/programme as a consequence of the SEA process (that may not necessarily have been captured as mitigation measures but that have rather been absorbed into plan-making as a result of increased environmental awareness derived from the SEA process), as well as other key recommendations to emerge from the SEA, such as those relating to data gap filling, considerations

for future plan/programme reviews, or tiering of environmental assessments.

5. Include a section on SEA consultation. This section should include a detailed description of the consultation mechanisms used during the SEA (e.g. scoping workshops, public round tables), time frames and an outline of the opinions/ feedback gathered. It should identify how this feedback has been integrated into mitigation measures and, ultimately, the plan/programme.

6. To inform the abovementioned consultation section in the SEA Statement, ideally, planners should prepare a consultation report as part of the plan-making process. This will enable the identification of where and how the plan-making process has been influenced by the consultation efforts and feedback. This is good practice following any consultation process, regardless of it being a SEA requirement. A subsection in the Environmental Report can document how both the plan/programme and the SEA consultation processes have complemented each other and distinguish between where the plan/programme has been influenced by the SEA process and where it has been influenced by plan-makers or other external sources.

7. "Tell the story" of the alternatives in the Environmental Report: identify reasonable alternatives, explain how they have been developed, assessed and compared and explain the reason for choosing the preferred alternative(s). This can be copied or summarised in the SEA Statement and captured in the draft and final plan/programme.

8. Include a section on SEA monitoring, with clear and specific indicators, monitoring responsibilities and time frames. Explain that the monitoring reports will be made publicly available. See section A1.2.6 for further details.

9. Include a section describing key learnings from the SEA process relating to, for example, awareness-raising, new ways of working within the organisation, approaches to integrating environmental considerations into future plans/ programmes and initiatives driven by the organisation, as applicable.

A1.2 Monitoring

A1.2.1 Introduction to monitoring

Article 10 of the European SEA Directive (2001/42/EC) states that the significant environmental effects of implementing a plan/programme shall be monitored in order, inter alia, to identify at an early stage unforeseen adverse effects and to be able to undertake appropriate remedial action. There is a legislative requirement to include in the Environmental Report a description of the measures envisaged concerning monitoring [Annex I(i)]. However, the Directive does not prescribe what to include in a monitoring programme beyond the Directive's indication that "existing monitoring arrangements may be used if appropriate, with a view to avoiding duplication of monitoring" [Article 10(2)]. The measures decided concerning monitoring must also be documented in the SEA Statement [Article 9(1)(c)].

In Ireland, national legislation puts the onus for SEA monitoring on the plan-making authorities, requiring that they monitor the significant environmental effects of their plans/programmes. However, national legislation does not specify reporting requirements or assign any third-party authority oversight or enforcement functions in relation to SEA monitoring.

A1.2.2 Why monitor?

Monitoring can help to evaluate whether SEA is fulfilling its core objective of providing for a high level of protection of the environment and the promotion of sustainable development (Article 1 of the SEA Directive). It requires committed investment and effort, but it can lead to significant benefits:

- Monitoring results can reveal the "real" effects of implementing a plan/programme (i.e. the plan's environmental performance) and thereby test the effectiveness of SEA by enabling the results of the environmental assessment to be compared with the environmental effects that in fact occur. In this way it can serve as a means of verifying the information in the Environmental Report and, where appropriate, can help to improve or refine SEA assessment methods.
- It can allow data gaps to be filled in (by identifying knowledge gaps and collecting new data over time) and thereby reduce uncertainties in the assessment.

- Measuring indicators over time (e.g. over multiple plan cycles) can identify long-term positive or negative changes and trends in the environment (including those that are not directly linked to a given plan/programme such as climate change) and can build knowledge on how these trends will affect (or will be affected by) the implementation of the plan or programme itself.
- Monitoring can identify unforeseen effects or impacts that may not have been identified during the assessment. Unforeseen effects can include impacts arising where the SEA has assumed that they will not (e.g. a plan leading to unanticipated development in a previously developed area, with associated impacts on land take and biodiversity) or mitigation not working as expected (such as the provision of public transport not leading to the anticipated reductions in vehicle movements and associated air pollution).
- Monitoring environmental changes occurring during the plan/programme implementation phase can help to identify the need for additional mitigation measures or for appropriate remedial action to be undertaken where issues are identified, as well as to inform project-level assessments.
- The information gathered through monitoring provides a basis to inform the review and preparation of subsequent iterations of plans/ programmes, thus better informing future planning decisions. It can make subsequent SEAs less onerous, by having up-to-date baseline environmental data readily available.
- Monitoring can also help streamline processes by changing the starting point in the baseline (e.g. looking at trends since the previous plan) and, in this way, support long-term and resilience thinking.

A1.2.3   *How is monitoring carried out?*

The SEA Directive does not contain any technical requirements about the methods to be used for monitoring. European Commission guidance on the implementation of the SEA Directive (EC, 2003) indicates that the level of detail, character (e.g. quantitative or qualitative) and methods of monitoring should reflect the character and detail of the plan/ programme and should be best aligned to capture whether or not the assumptions made in the SEA

correspond with the environmental effects occurring when the plan/programme is implemented. Monitoring methods should also be capable of identifying, at an early stage, any unforeseen adverse effects resulting from the implementation of the plan/programme.

In practice, SEA monitoring typically entails measuring established indicators on a regular (e.g. annual or biannual) basis. Changes in indicator values can be compared against the documented baseline environment for the plan/programme area to evaluate their upward/downward trend. This is then used as a basis for identifying beneficial or adverse effects. Monitoring findings are to be made available in a publicly accessible report and/or on a website.

SEA monitoring should reflect the nature and level of detail of the plan/programme. Many national-level plans/programmes lack geographic specificity, contain only high-level strategic objectives and do not lend themselves to cause–effect models in terms of direct measuring of environmental effects. As such, SEA monitoring for these plans should focus on national indicators to examine environmental trends [e.g. Sustainable Development Goal (SDG) indicators, national GHG emission inventories]. It should also focus on mitigation measures at the regional level (e.g. the proportion of energy produced that is renewable or the area of new broadleaf woodland planted).

Monitoring of local-level plans, instead, should focus on both local issues (e.g. specific areas of poor air quality) and particular aspects of larger scale problems that are relevant to the plan area (e.g. proportion of local journeys made by car, as a contributor to GHG emissions). Monitoring of mitigation measures could include, for instance, the proportion of new homes reaching specific energy efficiency levels or the length of new cycle track built within the plan area. Monitoring of sectoral plans – for instance transport, waste or energy plans – should focus on the key environmental impacts of relevance to these sectors.

In all cases, the monitoring programme will need to determine the most relevant indicator(s) to monitor. Environmental issues are often complex, interlinked and involve many actors. As a result, a plan/ programme may need to monitor several indicators. However, as noted above, the choice and number of monitoring indicators should always be informed by and aligned with the plan/programme itself.

An in-house "monitoring champion" may be needed. In Ireland, the SEA (AA and flood risk assessment) processes are, to a large extent, undertaken by external consultants acting on behalf of the plan-making authority. Consultants typically join the planning team at the SEA scoping stage and leave after plan adoption. The plan-making authority is then responsible for carrying out the monitoring. This means that close working is required between the consultants and the plan-making authority in putting forward and agreeing monitoring measures.

A1.2.4   Current shortcomings

Monitoring remains one of the most poorly performed stages of SEA in Ireland and internationally (EC, 2016, 2019). The two Irish reviews of SEA effectiveness (EPA, 2012 and the current study) indicate that there is significant variation in the monitoring measures put forward in different SEAs. There are inconsistencies in relation to indicators, periodicity and responsibilities, which ultimately lead to an absence of follow-up on the ground. Moreover, the absence of a legal requirement to prepare monitoring reports, coupled with a lack of oversight or enforcement, serves to limit monitoring effectiveness. In Ireland, specifically, the following key monitoring deficiencies are observed:

● *Monitoring of plan/programme implementation, rather than the environmental impacts of plan/ programme implementation*. Currently, the focus of any follow-up monitoring by plan-making authorities is, for the most part, on plan/ programme implementation (e.g. whether or not the plan/programme policies and actions have been realised within the planning period). It is apparent from the review that little effort is currently made to monitor the environmental effects of the plan/programme, as per SEA requirements (Figure A1.2).

● *Monitoring indicators based on assessment objectives (i.e. Strategic Environmental Objectives)*. Reusing the assessment indicators and targets from the assessment (i.e. impact assessment criteria) as part of the proposed monitoring programme presents one of the key inadequacies in current SEA practice. Monitoring should focus on measures to monitor the identified *potential significant environmental effects* and the *implementation of mitigation measures* (and their effectiveness), not the full range of environmental criteria used to assess the plan/programme.

● *Use of monitoring as a mitigation measure*. Often, monitoring is used as a form of mitigation (i.e. "monitor and manage"). This approach allows impacts to become significant before they are identified, with a response only afterwards. Such recommendations relate more to filling data gaps than monitoring and, as such, should be included in a separate section (e.g. SEA recommendations) rather than in the mitigation section. In particular, including monitoring as a mitigation strategy as part of AA is not legally compliant (i.e. AA cannot
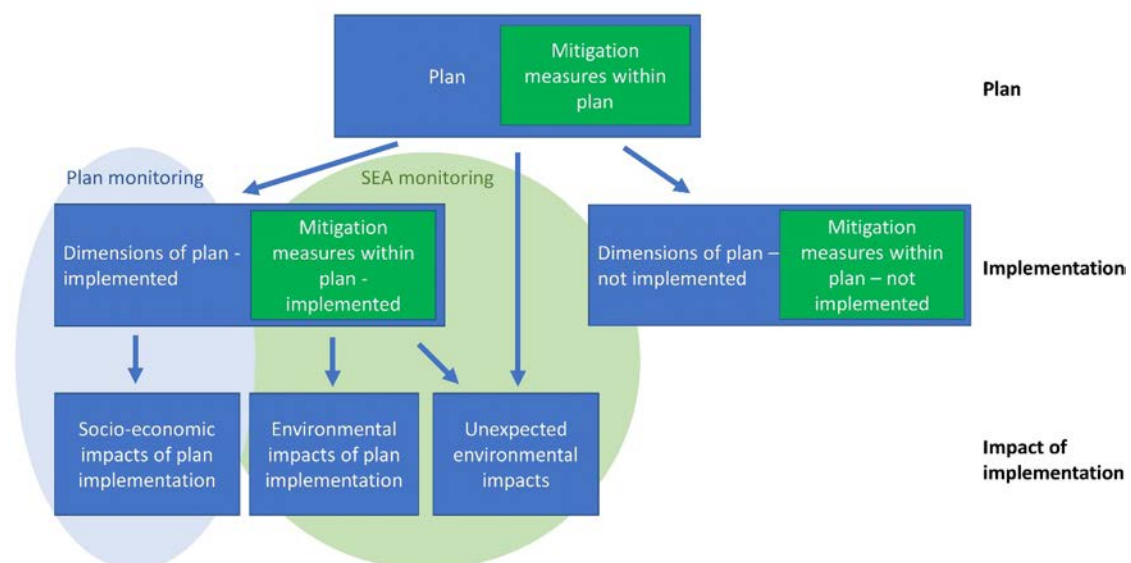

Figure A1.2. Plan/programme monitoring versus SEA monitoring.

rely on monitoring to identify potential impacts) and therefore should not be put forward as a strategy.

- *Complexity of monitoring*. Many of the national-level plans/programmes lack any geographic specificity, contain only high-level strategic objectives and do not lend themselves to any cause–effect model in terms of the direct measuring of environmental effects. Coupled with this is how responsibility for monitoring and remedial action can practically be applied when issues may cross several agency responsibilities. For example, in the case of water quality, the monitoring is undertaken by the EPA, wastewater upgrades are carried out through Irish Water and the pressure sources may ultimately be a combination of diffuse agricultural pollution, industry and wastewater. How this is captured through development plan/programme monitoring measures, and remediated, is not straightforward.
- *Missed opportunity to address data gaps*. Data gaps and limitations affecting the comprehensiveness and certainty of the assessment could be addressed by defining relevant monitoring measures. Filling the data gaps can help with the assessment of subsequent iterations of the plan/programme (and also with project-level assessments).
- *No monitoring periodicity, thresholds or remedial actions set out in the SEA monitoring programme*. When it is not possible to assign a given environmental issue/problem to a specific plan/programme, the lack of such a link should act as a trigger for all plans/programmes and projects (rather than none, as is currently the case) to remediate the problem, as appropriate to their remit. The monitoring programme should indicate when remedial action is needed (defining the threshold above which an effect is not acceptable) and what kind of remediation should take place, which, in all cases, should be aligned with the scope of the plan/programme itself.
- *Lack of clarity of monitoring responsibilities*. Monitoring data tend to come from third-party bodies undertaking systematic monitoring of key indicators (e.g. EPA monitors water quality

nationally); however, the plan-making authority is responsible for collating and synthesising the relevant information and reporting on it in relation to its plan/programme.
- *No obvious use of previous SEA monitoring information to inform plan/programme review*. When plans/programmes are cyclical, or are supported by implementation plans, the next iteration of the plan/programme and SEA should refer to the previous SEA monitoring findings in the description of the baseline environment.
- *Availability of monitoring reports*. Although some monitoring may be taking place, the findings are often not made publicly available.

A1.2.5   *Examples of good monitoring practice*

The key to a good monitoring framework is a clear definition of:

- meaningful indicators;
- how often the indicators should be monitored (i.e. frequency);
- who should carry out the monitoring (i.e. responsibilities);
- thresholds/targets/trigger levels above which remedial action is required;
- what the remedial action should involve and who is responsible; and
- inclusion of a commitment to reporting on monitoring findings.

The last point is key. For monitoring to be effective, a committed reporting framework needs to be put in place to ensure that the monitoring results are made readily available to inform stakeholders and subsequent plan/programme reviews. The Irish case studies below, which reflect international good practice, provide insights into good SEA monitoring practice in Ireland. Box A1.7 presents an example of meaningful monitoring measures, with detailed indicators and frequency of monitoring. Box A1.8 outlines a mechanism for addressing existing data gaps as part of post-implementation monitoring. Box A1.9 describes a structured approach to reporting monitoring results.

Box A1.7. SEA Environmental Report with meaningful monitoring measures: indicators and frequency of monitoring and monitoring results

The plan: Wild Atlantic Way Operational Programme 2015–2019

Context: The Wild Atlantic Way is a tourism initiative by Fáilte Ireland that has developed Ireland's first long-distance touring route.

URL to the SEA Statement: http://www.failteireland.ie/FailteIreland/media/WebsiteStructure/Documents/2_Develop_Your_Business/Key%20Projects/Strategic-Environmental-Assessment-Statement.pdf

URL to Monitoring Reports: http://www.failteireland.ie/Wild-Atlantic-Way/The-Wild-Atlantic-Way-Operational-Programme/Environmental-Surveying-and-Monitoring-Programme.aspx

Good practice:
The Wild Atlantic Way SEA Environmental Report contains a monitoring programme that clearly lists monitoring indicators, targets and data sources, as well as their frequency of measurement. The monitoring predominantly relates to biodiversity and visitor pressures/human health; it is, therefore, very focused on ecological aspects, with the follow-up monitoring reporting on assessments of specific locations.

Although it may not be possible to formulate such a detailed monitoring programme for most national or regional plans, because of a lack of geographic specificity or planning detail, some of the indicators below may still apply (e.g. conservation status of protected areas) and the inclusion of specific considerations, such as new housing in rural areas, may be relevant and feasible. Nevertheless, it is reiterated that consideration needs to be given to the effective link between indicators and plan/programme implementation impacts.

Environmental Component	Current Indicators (subject to review of findings from Monitoring Strategy for Operational Programme candidate Signature Discovery Points)	Current Target(s) (subject to review of findings from Monitoring Strategy for Operational Programme candidate Signature Discovery Points)	Source (Frequency)
Biodiversity, Flora and Fauna	B1: Conservation status of habitats and species as assessed under Article 17 of the Habitats Directive	B1: Maintenance of favourable conservation status for all habitats and species protected under National and International legislation to be unaffected by implementation of the Programme[83]	• Lower tier environmental assessment and decision making by local authorities • SEA Monitoring Programme reports for the land use plans of relevant local authorities (as required, monitoring reports published on various timescales and frequencies) • Department of Arts, Heritage and the Gaeltacht report of the implementation of the measures contained in the Habitats Directive - as required by Article 17 of the Directive (every 6 years) • Department of Arts, Heritage and the Gaeltacht's National Monitoring Report for the Birds Directive under Article 12 (every 3 years) • Consultations with the NPWS (at monitoring evaluation - see Section 10.5)
	B2: Percentage loss of functional connectivity without remediation resulting from development provided for by the Programme	B2: No significant ecological networks or parts thereof which provide functional connectivity to be lost without remediation resulting from development provided for by the Programme	• Lower tier environmental assessment and decision making by local authorities • Review of permissions granted and the SEA Monitoring Programme reports for the land use plans of relevant local authorities (as required, monitoring reports published on various timescales and frequencies) • CORINE mapping resurvey (every c. 5 years) • Review of EPA Ecological Network Mapping (if available)
	B3i: Number of significant impacts on relevant habitats, species, environmental features or other sustaining resources in designated sites including Wildlife Sites resulting from development provided for by the Programme B3ii: Number of significant impacts on the protection of listed species	B3i: Avoid significant impacts on relevant habitats, species, environmental features or other sustaining resources in designated sites including Wildlife Sites resulting from development provided for by the Programme B3ii: No significant impacts on the protection of listed species	• Lower tier environmental assessment and decision making by local authorities • Review of permissions granted and the SEA Monitoring Programme reports for the land use plans of relevant local authorities (as required, monitoring reports published on various timescales and frequencies) • Consultations with the NPWS (at monitoring evaluation - see Section 10.5)
Population and Human Health	PHH1: Occurrence (any) of a spatially concentrated deterioration in human health arising from environmental factors resulting from development provided for by the Programme, as identified by the Health Service Executive and Environmental Protection Agency	PHH1: No spatial concentrations of health problems arising from environmental factors as a result of implementing the Programme	• Lower tier environmental assessment and decision making by local authorities • Consultations with EPA and Health Service Executive (at monitoring evaluation - see Section 10.5)

The Wild Atlantic Way monitoring measures are clearly linked to the identified impacts, as captured in the following summary table of the Environmental Report.

Box A1.7. Continued

Topic	Potentially Significant Adverse Effect, if Unmitigated	Mitigation Reference (see Section 9)	Primary Indicator for monitoring (subject to review of findings from Monitoring Strategy for Operational Programme Signature candidate Discovery Points)
Biodiversity and flora and fauna	• Arising from both construction (including reuse and reinforcement of existing viewing points and lay-bys) and operation: loss of/damage to biodiversity in designated sites, ecological connectivity and non-designated habitats; and disturbance to biodiversity and flora and fauna • Habitat loss, fragmentation and deterioration, including patch size and edge effects • Disturbance and displacement of protected species and coastal squeeze	• Protection of Biodiversity including Natura 2000 Network • Appropriate Assessment • Protection of Natura 2000 Sites • NPWS & Integrated Management Plans • Coastal Zone Management • Biodiversity and Ecological Networks • Protection of Riparian Zone and Waterbodies and Watercourses • Non-Designated Sites • Non-native invasive species	B1: Conservation status of habitats and species as assessed under Article 17 of the Habitats Directive B2: Percentage loss of functional connectivity without remediation resulting from development provided for by the Programme B3i: Number of significant impacts on relevant habitats, species, environmental features or other sustaining resources in designated sites including Wildlife Sites resulting from development provided for by the Programme B3ii: Number of significant impacts on the protection of listed species
Population and human health	Potential interactions if effects upon environmental vectors such as water are not mitigated	• Human Health	PHH1: Occurrence (any) of a spatially concentrated deterioration in human health arising from environmental factors resulting from development provided for by the Programme, as identified by the Health Service Executive and Environmental Protection Agency

The SEA Environmental Report states that "Fáilte Ireland are committed to presenting the results of Wild Atlantic Way monitoring activities to a Monitoring Group twice each year. The objective of the Monitoring Group will be to ensure that robust systems are in place, in appropriate existing authorities, to ensure that all key commitments made at the programme level will be delivered effectively (including at the appropriate time), and to ensure that no adverse effects on the integrity of the environment will result."

As indicated in the table above, these indicators were subject to a review of findings from the Monitoring Strategy for the Operational Programme Signature candidate Discovery Points. The Environmental Report also notes that "The Strategy for Environmental Surveying and Monitoring is an evolving tool that will be informed and updated by emerging findings." Monitoring reports have been produced annually. Below is an extract from such a report.

Table 4.4 Summary of Visitor Impacts and Ecological Impacts; taking note of habitat features and ornithological interests

Discovery Point	Visitor Impacts	Ecological Impacts	Recommendations
Galley Head	Low-High Impacts	Trampling of clifftop vegetation	Consideration of visitor management Signage in respect of nesting birds Further ecological monitoring in event of increased visitor numbers
Lough Hyne	Low-Medium Impacts	None at current levels of site activity	Temporary facilities at peak tourist season to minimize water quality impacts Growth in visitor numbers would require a review of current parking facilities
Garnish Point	Low-Medium Impact	Disturbance to breeding bird species and trampling of Annex Habitats	Additional Signage regarding marked trials Temporary moving trials Fixed marking of walkways

Box A1.8. SEA Environmental Report mitigation for addressing existing data gaps: a mechanism for post-implementation monitoring

The plan: EirGrid Grid25 Implementation Programme 2011–2016

Context: EirGrid's Implementation Programme aims to implement the Grid25 Strategy, which envisaged an extension to the electricity transmission network to accommodate increasing demand and new sources of renewable energy.

URL to the SEA Statement: http://www.eirgridgroup.com/site-files/library/EirGrid/Environmental-Report-for-the-Grid25-Implementation-Programme-2011-2016-Strategic-Environmental-Assessment.pdf

URL to Monitoring Reports: Not publicly available online.

Good practice:

The SEA Statement provides detailed indicators, sources of data and information on the frequency of monitoring. As shown in the table below, annual monitoring is undertaken to inform lower planning levels (i.e. transmission development plans). Nevertheless, some of the indicators rely on existing monitoring measures, for instance the National Parks and Wildlife Service (NPWS) reporting to the EU under Article 17 of the Habitats Directive being cognisant that any decline in habitat quality needs to be addressed in conjunction with the NPWS.

In this case, the SEA Environmental Report included a mitigation measure to undertake evidence-based environmental studies. These studies examine the environmental impact of the construction and existence of transmission infrastructure in Ireland in a representative range of Irish environmental conditions. Therefore, although they inform future route selection and the design of transmission infrastructure, they also serve as post-implementation monitoring. More information can be found at http://www.eirgridgroup.com/about/in-the-community/environment/

Environmental Component	Selected Indicator(s)	Selected Target(s)	Source	Monitoring Frequency
Biodiversity, Flora and Fauna	B1: Conservation status of habitats and species as reported upon under Article 17 of the Habitats Directive	B1: Maintenance of favourable conservation status for all habitats and species protected under national and international legislation to be unaffected by implementation of the IP25	a) DAHG report of the implementation of the measures contained in the Habitats Directive - as required by Article 17 of the Directive; b) Consultations with the NPWS; &, c) Monitoring of the effects of development required under separate processes	a) Every 6 years b) Annually, to inform Environmental Appraisal Report which will accompany annual TDPs c) Various - determined by monitoring programmes provided for by EIAs
	B2: Percentage loss of functional connectivity without remediation resulting from development provided for by the IP	B2: No significant ecological networks or parts thereof which provide functional connectivity to be lost without remediation resulting from development provided for by the IP	a) Consultations with the NPWS; &, b) Monitoring of the effects of development required under separate processes	a) Annually, to inform Environmental Appraisal Report which will accompany annual TDPs b) Various - determined by monitoring programmes provided for by EIAs
	B3: Number of significant impacts on relevant habitats, species, environmental features or other sustaining resources in Wildlife Sites resulting from development provided for by the IP	B3: Avoid significant impacts on relevant habitats, species, environmental features or other sustaining resources in Wildlife Sites resulting from development provided for by the IP	a) Consultations with the NPWS; &, b) Monitoring of the effects of development required under separate processes	a) Annually, to inform Environmental Appraisal Report which will accompany annual TDPs b) Various - determined by monitoring programmes provided for by EIAs
Landscape	L1: Number of complaints received from statutory consultees regarding avoidable impacts on the landscape resulting from development provided for by the IP	L1: No avoidable impacts on the landscape resulting from development provided for by the IP	a) Complaints from statutory consultees; &, b) Monitoring of the effects of development required under separate processes	a) To be collated annually, to inform Environmental Appraisal Report which will accompany annual TDPs b) Various - determined by monitoring programmes provided for by EIAs

Box A1.9. A plan/programme with detailed monitoring reporting arrangements: reporting on and taking into account monitoring results

The plan: National River Basin Management Plan 2018–2021

Context: This is the second River Basin Management Plan (RBMP) cycle but the first national-level RBMP. It outlines the approach that Ireland is taking to protecting its rivers, lakes, estuaries and coastal waters over a 4-year period.

Given that the plan's overarching focus is on protecting and improving water quality, the plan is starting from a very different base environmentally from many other plans. Part of its very function is to monitor water quality.

URL to the SEA Statement: https://www.housing.gov.ie/sites/default/files/publications/files/rbmp_sea_ statement_0.pdf

URL to Monitoring Reports: Not publicly available – password-protected DHPLG online web application. Water quality monitoring data are available through www.catchments.ie

Good practice:

The plan indicates that arrangements were made for ongoing water monitoring and reporting on implementation (e.g. environmental pressures relating to sectoral changes, water demand, hazardous substances or invasive species, and associated changes in water ecology and water quality) during the first national RBMP and that the monitoring results have informed the preparation of this new RBMP. One key arrangement defines the feedback loop mechanism for reporting if water quality is affected, as indicated in Figure A1.3. This, however, is driven more by the WFD requirements than by SEA.
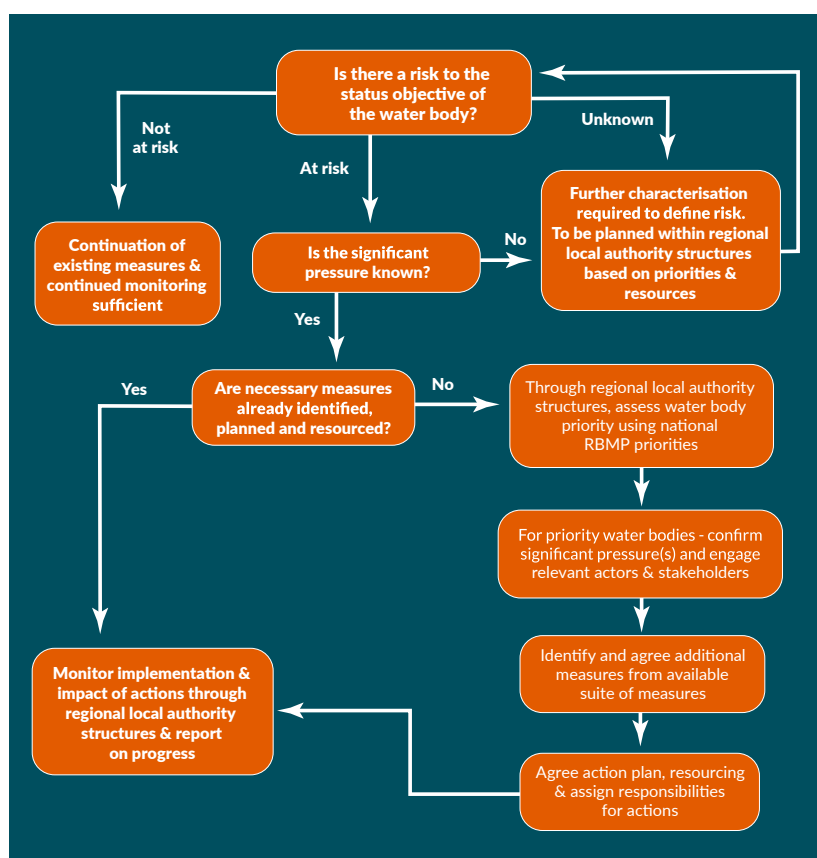
Figure A1.3. Flow chart outlining decision-making on prioritisation and associated supporting measures at regional and local levels. Source: River Basin Management Plan for Ireland 2018–2021, p. 125 (https://www.housing.gov.ie/sites/default/files/publications/files/rbmp_report_english_web_ version_final_0.pdf).

Box A1.9. Continued

The plan states that "to ensure optimal implementation of this RBMP, the implementation of measures in the regional work programmes must be continuously monitored and evaluated. Each regional committee will, therefore, produce a concise annual report that will provide an update on implementation progress and an evaluation of the measures implemented." An online platform, https://wfd.edenireland.ie/, makes monitoring results available among the governing bodies. Figure A1.4 defines the roles and responsibilities associated with monitoring water quality, which are also applicable to monitoring the environmental effects of plan implementation. The monitoring is in compliance with the WFD for a water management plan. Similar levels of monitoring would not be practical for other sectoral plans.
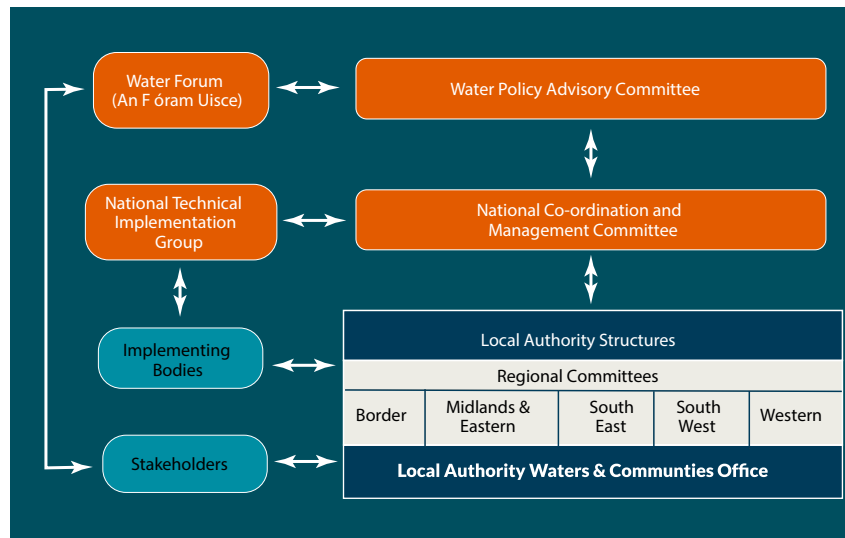
Figure A1.4. Governance and co-ordination structures for implementation of the second-cycle RBMP. Source: River Basin Management Plan for Ireland 2018–2021, p. 119 (https://www.housing.gov.ie/sites/default/files/publications/files/rbmp_report_english_web_version_final_0.pdf).

A1.2.6 *Opportunities to improve monitoring practice*

There are a number of opportunities to improve SEA monitoring practice in Ireland. The following recommendations derive from international good practice and national consultation feedback.

For SEA practitioners:

- Include monitoring indicators that measure potential environmental impacts and implementation of mitigation measures, including their effectiveness (see Figure A1.2). Monitoring whether or not the proposed mitigation measures are implemented and whether or not they work can help resolve environmental problems before they occur, as well as avoid associated costs of litigation.
- Identify a suitably small set of highly relevant indicators to meaningfully monitor the environmental effects of plan/programme implementation (see section A1.3). These should be aligned with the scope and nature of the plan (e.g. several water quality indicators may be needed for development plans but only one such indicator may be relevant to a transport plan). This should include identifying the data sources that will be used for monitoring.
- Utilise existing monitoring programmes and initiatives such as:
    - The EPA's State of the Environment reports and datasets (including related air and water quality indicators, etc.) – these provide a significant and reliable source of environmental (spatial) data on the state of the environment and changes and trends that are central for populating relevant indicators, particularly at the national and regional level.
    - At the national scale, SDG indicators and monitoring data – the synergies between SDGs and SEA, in terms of promoting sustainable development and embedding sustainability into planning and decision-making, mean that SDG data are relevant and useful in terms of SEA processes – see, for example, the new DCCAE/Central Statistics Office portal: https://irelandsdg.geohive.ie/
    - Technology and citizen science – the growing availability and deployment of remotely sensed data [e.g. imagery, light detection and

ranging (LIDAR) and ubiquitous sensors to monitor air quality, noise and light] and citizen science data collation initiatives, combined with widely used GIS technology, provides an untapped opportunity to enhance monitoring processes. This may be particularly useful for specific and spatially defined sectoral plans/programmes.

- Use spatial information for spatial plans. The growing availability of spatial datasets provides an opportunity for more detailed appraisals of changes in environmental indicators and the identification of specific areas of environmental impact/change. The SEA-relevant spatial data sources inventory, which is available on the EPA website and is updated regularly, provides a good starting point: http://www.epa.ie/pubs/advice/ea/seaspatialinformationsourcesinventory.html. This dataset is updated on a regular basis and so the link will become obsolete. The most up-to-date inventory can be retrieved by searching for "SEA spatial data sources inventory EPA" using Google.
- Test and document plan/programme impacts in relation to targets and thresholds (e.g. climate, air and water quality, renewables, energy). Use existing international and national thresholds when assessing potential impacts – this approach can subsequently enable the definition of a more specific and quantitative set of monitoring indicators.
- Identify the organisations with relevant monitoring responsibilities. Although the plan-maker is, in all cases, responsible for plan implementation monitoring, different third-party organisations may be responsible for monitoring specific indicators (e.g. water or air quality). In all cases, the plan-making authority is still responsible for interrogating that data and reporting on trends in relation to the specific plan/programme.
- Define the level of detail of monitoring required. Existing national/catchment monitoring data can serve as an analogue for monitoring within the plan/programme context. However, depending on detail, it can point to more focused monitoring required within the plan/programme area.
- Define monitoring frequency and provisions for carrying out remedial action, as appropriate and aligned to the scope of the plan/programme, as well as reporting requirements (e.g. who should be

notified). This can provide a clear remit for action, and facilitate communication between agencies and resource allocation in case of environmental problems. This is particularly relevant at the lower planning tiers.

● Linked to the above, define remedial action responsibilities. If changes in indicator trends are identified, then the plan-making team needs to work with the relevant authority on a response. Clear definition of responsibilities would both improve implementation of monitoring and provide accountability for remedial action when environmental targets are not achieved. Defining responsibilities needs to take account of current national monitoring arrangements and responsibilities (e.g. water quality if regularly monitored by the EPA, species and habitats by the National Parks and Wildlife Service (NPWS), but, as noted above, involved authorities should share information and work together to identify and address changes in indicator values).

● Include a specific recommendation in the SEA Environmental Report for the monitoring programme to be incorporated into the plan/programme or to be added as a chapter so that this aspect is not "lost" as part of plan/programme implementation reviews.

● Refer to previous plans/programme monitoring frameworks and data in the next round of planning SEA. Monitoring can provide a more robust and up-to-date baseline for future SEAs and, more importantly, a better understanding of the implications of certain plans/programmes, which can, ultimately, contribute to better planning and more informed decisions.

For plan-makers:

● Devise a monitoring approach that feeds into plan/programme implementation review and related reporting. This allows uncertainties and data gaps to be addressed, provides a more robust baseline and better informs future planning. Moreover, plans at different levels could use the same methodological framework with regard to core indicators, monitoring frequency, etc., to help align internally all monitoring efforts in plan-making.

● Include a specific commitment in the plan/programme for environmental monitoring and reporting.

● Ensure that enough resources are available in the plan-making organisation to collate and report on the relevant monitoring information, including a defined budget.

● Make monitoring reports available online and, where suitable, link monitoring data to existing GIS-based databases. This can enhance understanding and knowledge across planning hierarchies and sectors.

A1.2.7 *Practical step-by-step guidance*

The following step-by-step guidance aims to facilitate the implementation of the recommendations presented in sections A1.2.3 and A1.2.6.

For SEA practitioners:

1. Undertake a monitoring workshop, early in the SEA process (combining it with scoping or alternatives workshops, perhaps), to identify and carry out plan/programme-specific monitoring of plan/programme actions with environmental consequences and/or mitigation measures.

2. Identify monitoring measures that address any key/significant data gaps identified during the assessment (see Box A1.8).

3. Make the monitoring indicators as specific as possible, aligning them with the scope and nature of the plan/programme, to ensure that they are well understood and can be easily populated using existing or newly gathered data (see Box A1.7).

4. Limit the information to be monitored to a narrow (e.g. 10–12) and meaningful set of indicators. Make sure that the information to be gathered is also relevant for plan-making (i.e. that it is not data gathering for the sake of data gathering). This will help to guarantee commitment and resourcing.

5. Help to identify and fine-tune monitoring indicators through consultation – propose an initial set of indicators and put it out for consultation to environmental authorities, stakeholders and the public, as appropriate. Although this is already carried out through the consultation on the SEA Environmental Report, there tends to be limited engagement.

6. Include thresholds/standards in the monitoring programme, appropriate to the level of detail of the

plan/programme, and clearly state what response needs to be taken (e.g. remedial action) if thresholds are exceeded or standards are not met.

7. Define monitoring frequency (including seasonal specificities). Although monitoring periods will be determined by the temporal scope of a plan/programme, monitoring should be annual where possible – noting that the monitoring frequency of third-party data is often set by legislation or internal arrangements.

8. Identify responsible organisations for remedial action (see Box A1.9). In some cases, the plan-maker can/needs to take appropriate remedial action. In other cases, the relevant agencies may need to be notified (if monitoring shows declining trends in a particular aspect outside the competency of the plan-maker – see also section A1.3).

9. Refer to significant trends/issues from existing monitoring programmes (e.g. using the EPA's State of the Environment reports and, if appropriate, United Nations SDG monitoring data to identify environmental changes and trends at national/regional level between plan/programme periods), as appropriate.

10. Include monitoring indicators that use existing citizen science initiatives and apps (e.g. National Biodiversity Data Centre's biodiversity Ireland app) for data gathering.

11. Ensure that cyclical plans/programmes make the most of monitoring. In the SEA baseline section for a new plan/programme, refer back to the SEA baseline of the previous plan/programme (to identify trends over time), to any new information relating to projects arising in the previous plan/programme period (e.g. changes in infrastructure, heritage) that may not directly relate to the established monitoring indicators, and to the monitoring information from the implementation of the previous plan/programme (in order to define the current baseline as well as to determine the effectiveness of the mitigation measures in the prior plan/programme and thus improve the planning process).

For plan-makers:

12. Ensure that monitoring outcomes are captured in a report, including recommendations, as appropriate, on the scope of monitoring going forward.

13. Include a specific commitment in the plan/programme for environmental monitoring and reporting, in the form of a specific policy measure.

14. Ensure that enough resources are available in the plan-making organisation to collate and report on the relevant monitoring information, including a defined budget. To avoid duplication of effort, particularly in local authorities with a number of SEAs requiring related monitoring procedures to be performed, consider establishing an internal local authority environmental monitoring team/group to compile/collate the environmental data and, if changes are identified, to flag the relevant plans/programmes to take account of the changes.

15. Make the monitoring results publicly available, clearly presenting any identified changes and trends. Ideally, this should be carried out online (i.e. publishing them on the plan-making authority's website).

A1.3   Monitoring Indicators

Although there is no one-size-fits-all solution to monitoring, a set of strategic indicators has been identified as part of the SEA effectiveness review to inform monitoring at the national level (Table A1.1). These five indicators should be monitored as part of the implementation of all national plans/programmes because of their significance and to address existing European reporting requirements. Moreover, there are existing monitoring programmes and related data that could be accessed, such as the EPA's State of the Environment reporting and the WFD and Article 17 reporting under EU law. The United Nations SDG monitoring data are also of relevance at this strategic planning level. The EPA's SEA-relevant spatial data sources inventory presents a one-stop-shop for all relevant datasets and monitoring initiatives in Ireland and is regularly updated.[2]

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2 http://www.epa.ie/pubs/advice/ea/seaspatialinformationsourcesinventory.html (accessed 22 November 2019).

Table A1.1. Proposed strategic indicators for national-level plans and programmes

Indicator	Monitored by	Periodicity	Target/threshold
Biodiversity	NPWS and National Biodiversity Data Centre https://www.npws.ie	Routine monitoring programmes are in place for specific species/ habitats Article 17 reporting every 6 years	Integrity of habitats and conservation status of species as per the requirements of the EU Habitats Directive (92/43/EEC)
Climate	EPA, Office of Public Works, National Roads Authority, DCCAE https://www.climateireland.ie	Routine monitoring programmes are in place for GHG emissions (sectoral and regional)	EU GHG emission targets
Air quality	EPA www.epa.ie	Real time at monitoring stations	Defined hourly/daily/monthly and annual thresholds, as set in the various EU air quality directives (e.g. CAFE Directive 2008/50/EC)
Water quality	EPA and River Basin Districts www.catchments.ie https://wfd.edenireland.ie/	Typically, quarterly surveillance monitoring and monthly operational monitoring	Drinking Water Directive (98/83/EC) and WFD (2000/60/EC)
Land use/land cover	European CORINE project https://land.copernicus.eu/pan-european/corine-land-cover www.epa.ie	Updated every 6 years, including information about changes over the past 6 years	Not applicable

The focus of monitoring should be on identifying significant environmental changes of relevance to the plan/programme that can be addressed by future plans/programmes (e.g. by informing future plan reviews with regard to policies and zonings and through the strengthening of relevant mitigation measures). Similarly, monitoring can also be used to review whether or not specific policies or mitigation measures need to be strengthened or updated during the current plan/programme period (such as via plan/ programme variations).

As discussed in section A1.2.3, monitoring measures need to be aligned to the level of the plan/programme, to enable key anticipated environmental problems associated with plan/programme implementation, including mitigation measures, to be followed up and to identify any unforeseen adverse effects. Therefore, it is recommended that different layers of monitoring (i.e. tiering monitoring indicators according to level in plan hierarchy) are provided. Table A1.2 gives possible examples of such tiering:

- national – in light of the more strategic nature of monitoring at higher planning tiers, broad indicators can be defined and publicly available data used (e.g. EPA's State of the Environment reports and related monitoring programmes such as water monitoring, as well as SDG monitoring data) – see also the suggested indicators above;

- regional – more specific indicators that make use of local authority and other public authority datasets; and
- local – focused monitoring programmes that contain county-specific responsibilities and that may require the collection of additional local data to identify pressures, changes and decline in environmental quality.

In addition, a commitment within the responsible authority for each sector and plan hierarchy level to take responsibility for tackling the environmental change that is relevant to the sector/level should be fostered. For example, a LAP may identify deterioration in the quality of a stream. This deterioration may be from agriculture, development pressure on wastewater and/or industry (or a combination of all of these). However, the spatial plan can do something only about the pressures on wastewater and so it will address the issue by doing what is within its power.

A1.4   High-level Recommendations

For plan-making authorities, the first and most important step to ensure compliance with the statutory requirements for SEA monitoring is to carry out monitoring of the significant environmental effects of implementing their plan or programme. Although not

Table A1.2. Examples of tiering of monitoring indicators

Scale of plan/ programme	Climate	Air quality	Land use
National	• National GHG emissions by sector • Proportion of national energy produced by renewables	• Number of exceedances of legal air quality limits – all stations	• Proportion of area nationally that is developed (urban/ infrastructure)
Regional	• Regional GHG emissions by sector	• Number of exceedances of legal air quality limits – stations in region • Transport modal split at regional level	• Proportion of area regionally that is developed (urban/ infrastructure)
Local	• Proportion of homes with energy efficiency rating X • Amount (in GW) of energy produced by renewables in the county area	• Air quality zones in the county area and average air pollution levels in these zones • Public transport usage at county level	• Amount (in ha) of new development on greenfield land • Amount (in ha) of new broadleaf woodland

a statutory requirement, producing and publishing monitoring reports is also recommended as good practice. Additional high-level recommendations that could improve the effectiveness of SEA monitoring (and SEA Statements) are presented below. These mainly focus on the need to address monitoring report findings by identifying requirements for providing information, taking action and taking into account the monitoring findings into the next plan and/or planning tier. The recommendations require varying degrees of commitment and resources; in some cases, they may work only if existing legislation/regulations and guidance are amended. Some of these measures could be trialled on a pilot basis to determine whether or not practice improves as a result; this could then inform the preparation of a strategy or pathway, with appropriate time frames, towards more formally implementing those measures that are found to work well.

- Provide training and capacity building on SEA Statements and monitoring for SEA practitioners/ consultants and plan-makers, along with this new SEA monitoring and SEA Statement guidance. This would enhance current practice and promote proactive and practical monitoring commitments.
- Undertake a review of the quality of a cross-section of SEA Statements. This could be supported by the preparation of a SEA Statement checklist and could help to determine if the Statements meet the overall statutory requirements, as well as documenting overall how the plan/programme and SEA process were integrated. It will also facilitate the ongoing

review of SEA effectiveness. A SEA Statement quality check package can be included in the EPA's existing SEA Process Checklist (see the recommendation below).

- Revise the existing SEA Process Checklist (EPA, 2008). This checklist could be used as a quality check framework once it is revised to address not only the process but also reporting requirements; updated to include more recent and relevant good practice; and published (as the current version is still a consultation draft). This checklist would also benefit from a streamlined "rapid check" complementary section.
- Encourage monitoring findings to be published on the plan-makers' websites alongside the plan/ programme and SEA-related documentation, at least as part of plan/programme reviews, and made publicly available. This will help ensure that monitoring is properly undertaken and monitoring reports are prepared. For example, in the context of land use planning, ensure that a monitoring report is published when the plan review is initiated (i.e. 2 years into plan implementation). Although making it a requirement would involve amending the SEA regulations, it could be fostered by including it as a best practice recommendation in the revision of the DEHLG (2004) SEA guidelines.
- Create a national monitoring body. To provide a focal point to ensure that the benefits of monitoring are achieved, a national monitoring body or forum could be created. This would work with local authorities and other plan-making authorities to ensure that monitoring takes place and

unforeseen effects are addressed. Although this is an aspirational recommendation that requires significant resources, a dedicated team looking at trends and engaging with planners during plan-making could play an important advisory role to build in mitigation and develop more sustainable plans/programmes by addressing environmental trends.

- Set up a monitoring strategy at national level to collate, co-ordinate and improve the availability of (spatial) data from existing monitoring mechanisms (e.g. EPA, heritage, water) and provide centralised and relevant information across planning hierarchies and sectors. These data/information could be housed in a centralised environmental baseline data portal. This would be a rapid and systematic way to address ongoing monitoring limitations and a way to reduce the costs of evidence gathering for the next round of SEAs.

- Provide more frequent national-level monitoring data to provide a more up-to-date, reliable and accountable basis for environmental assessment and planning. Whereas some indicators are updated regularly (e.g. water quality), the EPA's State of the Environment and indicator reporting is currently undertaken on a 4-year cycle. Annual State of the Environment reports (or bulletins) would provide more timely and current information for both SEA and planning processes.

- Undertake monitoring meetings or workshops as part of the EPA championing role, in combination with the scoping or alternatives workshops that are currently carried out, during the preparation of a plan/programme. This would ensure consistency between authorities and a stepwise improvement of monitoring practice.

- Incentivise monitoring initiatives that go beyond the minimum legal requirements, for instance through awards at the annual EPA Environment Ireland conference or relevant national planning conferences. Awards could address excellence in monitoring and feedback and excellence in innovative and effective mitigation measures (as documented through monitoring). This could be further enhanced by including good monitoring practice examples on the environmental authorities' websites.

- Use technology and innovation to encourage monitoring implementation and to tap into currently available but underused sources of data gathering and sharing (web-based services, citizen science, remote sensing, etc.), support citizen science initiatives and empower the public by giving them a voice, and allow plan-making authorities to tap into local knowledge and data sources. For example:
  - Include in the next EPA funding call a proposal to develop a monitoring app. This could link to specific monitoring requirements for a plan and territory (e.g. city or county development plan, LAP). This app could be modelled on the EPA's environmental concerns reporting app (See It? Say It!) and be linked to an online platform where monitoring data could be visualised and queried.
  - Encourage plan-making authorities to post specific monitoring requirements on Ecobroker (https://ecobroker.ucd.ie/). Linking practice and science can facilitate monitoring implementation (by getting academics and researchers to undertake projects that facilitate data gathering and inform follow-up processes and outcomes).

Appendix 2   International Good Practice Case Studies

A number of examples of good international SEA effectiveness have been identified during the project. They explain how the different dimensions of SEA effectiveness can be performed well and, in this way, promote good practice.

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SEA EFFECTIVENESS DIMENSION: CONTEXT

Name of the plan: Land Use Plan for the Tana River Delta 2014, Kenya

Proposed by a representative of the Netherlands Commission for Environmental Assessment

The plan URL: https://issuu.com/nature_kenya/docs/tana_delta_lup_final_print

**SEA legislation:** Environmental Management and Coordination Act, 2012: http://extwprlegs1.fao.org/docs/pdf/ken41653.pdf

SEA guidelines: https://www.nema.go.ke/images/Docs/Guidelines/SEA%20Guidelines%20.pdf

The story

The prime minister of Kenya, on his campaign for presidency in 2011, started the process of land ownership and registration, addressing Tana's historical conflicts with regard to land use in an attempt to gain support from the region. The prime minister's adviser was trained in SEA in the Netherlands and saw the opportunity to apply it to support the preparation of the Land Use Plan for the Tana River Delta. This case study was a pilot in itself (the Delta) because it was the first SEA after the legislation came into force. It was a means to explore and address competing interests with regard to the use of land and water (e.g. agriculture, biodiversity, large investments for linear infrastructure, oil industry) and to bring environmental considerations to the forefront of decisions.

The prime minister's adviser established an advisory body, involving ministries and chaired by the minister. Two teams were set up: one for land use planning (with seven people) and one for SEA (six people), with two people taking part in both teams. The teams worked in parallel, in the same building, exchanging information on a regular basis. Nevertheless, there were conflicts between ministries when determining impacts, so an independent body was then established to quality check the impact assessment stage; this brought in an international group of experts into the process.

The election was lost to another party and so the SEA champion no longer had ministerial support. However, after the election, the new Kenyan constitution was adopted and decision power was delegated to 47 counties, which were asked to develop a land use plan using SEA. As the Tana Delta counties already had a SEA and a draft plan, they became the champions in the process. The Tana Delta SEA land use plan and SEA won an important international award[3] for being innovative and participative. It represents one of the most influential SEA cases in low-income countries.
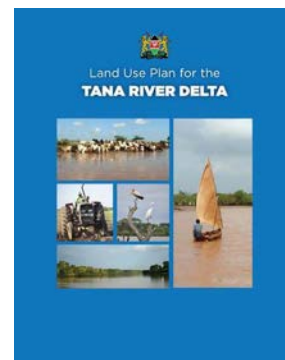
The role of SEA

The SEA drove an intense participatory process, with extensive fieldwork for data gathering to support a needs assessment and resource mapping, as well as the development of alternatives. The objective was to examine whether or not ongoing large-scale developments were environmentally feasible and socially acceptable. In doing so, it raised environmental awareness in the region. More importantly, it addressed the long-standing debate on the availability of water. After extensive hydrological analysis, it proved that there was less water than thought and underlined that the potential of the area was tremendously overestimated in terms of agricultural development. As a result of SEA, none of the large-scale agricultural projects went ahead, leading to real substantive effects on the ground.

The importance of contextual effectiveness

The institutional setting, including the political commitment to environmental integration, is essential; otherwise, a good assessment may be undertaken with little influence on the plan/programme. Often a change agent is sufficient to empower SEA – even when the governance setting is not supportive of the assessment – a committed champion can make a difference.

Good practice: lessons learnt

● A change agent, a committed visionary, a champion can make a difference to the effectiveness of a SEA process and, ultimately to the plan/programme.

● Training high-level people on SEA will ensure ownership of the process and a power balance.

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3 Royal Town Planning Institute Awards for Planning Excellence: https://www.birdlife.org/africa/news/kenya-wins-royal-town-planning-institute-rtpi-awards-planning-excellence (accessed 20 November 2019).

SEA EFFECTIVENESS DIMENSION: NORMATIVE

Name of the plan: Shannon Integrated Framework Plan 2013–2020, Ireland

Proposed by the SEA effectiveness project team

The plan URL: http://www.shannonestuarysifp.ie/sifp-document/

SEA legislation: Statutory Instrument (S.I.) No. 200 of 2011 [European Communities (Environmental Assessment of Certain Plans and Programmes) (Amendment) Regulations 2011] and S.I. No. 201 of 2011 [Planning and Development (Strategic Environmental Assessment) (Amendment) Regulations 2011]

http://www.irishstatutebook.ie/eli/2011/si/200/made/en/print

http://www.irishstatutebook.ie/eli/2011/si/201/made/en/print

SEA guidelines: http://www.epa.ie/monitoringassessment/assessment/sea/resources/

The story

The Strategic Integrated Framework Plan (SIFP) for the Shannon Estuary seeks to set a strategic vision for the estuary for 30 years and to provide an overarching framework for a government-wide approach to address opportunities for sustainable development within the estuary. It has a statutory basis for the landward elements as a variation to county development plans and, in the absence of a marine spatial plan, it will assist government departments in co-ordinating and decision-making for the marine area. The SIFP is integrated across four local authorities (Limerick City and Counties Limerick, Clare and Kerry) and the Shannon Development and Shannon Foynes Port Company. It is overseen by Clare County Council as the lead authority.

The SEA undertook a comprehensive assessment of the plan's strategic policies and proposed development sites through multi-criteria analysis. The development of such an integrated plan brought consideration of the Shannon Estuary resources and environmental aspects to the fore, where previously they were not considered in higher level plans.
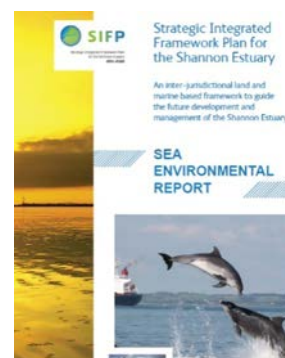
The role of SEA

Prior to the plan, land use zoning issues in the area encouraged private stakeholders to identify optimal lands for development and to bring them forward on a piecemeal basis without adequate consideration of carrying capacity or environmental limits. This was compounded by the high level of use of the Shannon Estuary by tourists, industry, shipping, recreational users, etc. When these were considered by the SEA process, some of these activities and proposed development lands (e.g. along the coast) conflicted with environmental considerations. A co-ordinated response, which explored *what* could sustainably be developed and *where*, was key to the long-term well-being of the Shannon. This allowed for compromises and facilitated discussions on more sustainable alternatives. It also brought home the fact that some activities are better suited to specific locations and so a tailored solution is needed over such a big area. The SEA mitigation was fully implemented, including the formation of a marketing group to communicate results and an environmental working group with statutory environmental authority involvement.

The importance of normative effectiveness

The SIFP SEA brought the environmental issues of the Shannon Estuary to the forefront, enabling the SIFP to establish a framework for promoting sustainable development of the land and marine elements of the estuary. The SEA resulted in mitigation being incorporated into the SIPF, which allowed environmental protections to filter down and to be incorporated into the lower tier city and county development plans.

Good practice: lessons learnt

- SEA requires a good set of strategic objectives – including legal standards – against which a plan's impacts can be tested.
- Recommended mitigation measures should be linked to identified significant impacts.
- SEA-specific monitoring commitments, with timescales set for the objectives and indicators, can help to ensure successful plan implementation.

SEA EFFECTIVENESS DIMENSION: PROCEDURAL
Name of the plan: Southern Region Regional Waste Management Plans   *Proposed by the SEA effectiveness study team*
The plan URL: http://southernwasteregion.ie/content/southern-region-waste-management-plan-2015-2021-associated-reports   **SEA legislation:** Statutory Instrument (S.I.) No. 200 of 2011 [European Communities (Environmental Assessment of Certain Plans and Programmes) (Amendment) Regulations 2011] and S.I. No. 201 of 2011 [Planning and Development (Strategic Environmental Assessment) (Amendment) Regulations 2011]   http://www.irishstatutebook.ie/eli/2011/si/200/made/en/print   http://www.irishstatutebook.ie/eli/2011/si/201/made/en/print   **SEA guidelines:** http://www.epa.ie/monitoringassessment/assessment/sea/resources/

The story

The Waste Management Act 1996 and the European Communities (Waste Directive) Regulations 2011 require the preparation of Regional Waste Management Plans for all Irish regions. The three regional plans were advanced in parallel. The regional waste authorities were all very open to the SEA process and facilitated integration from the early stages of plan-making. Without this level of co-operation there was a danger that each region would try to be self-sufficient in waste terms for every aspect, which for a country the size of Ireland is not necessary or desirable. Waste experts from the same environmental consultancy carried out the SEA and AA and helped the regional authority plan teams. This iteration represented the first comprehensive application of the SEA Directive to non-hazardous waste planning in Ireland in a co-ordinated way.

The role of SEA

The SEA process drove real integration of environmental issues into the plans. The SEA consultants fully participated in the objective setting for the plan and provided high-level iterative feedback from the outset. Alternatives were clearly set out by the waste team and much informal exchange between the waste and SEA teams helped to improve understanding of the limitations and opportunities in the waste management sector. This allowed the SEA to explore multiple layers of alternatives, ranging from EU policy on the circular versus the linear economy, to specific policy alternatives to deliver on agreed objectives (the quantity and location of incineration capacity).

The iterative process identified conflicts that required specific mitigation (e.g. feasibility studies on suitable future uses of closed landfill sites). The plan team agreed to link the SEA's mitigation measures directly to the plan policies, displaying a *real* intention to follow through. Environmental criteria were taken forward into monitoring proposals and are now reported on annually by the regional authorities. This should facilitate a more focused SEA of the next plan iteration.

The importance of procedural effectiveness

The main stages at which the SEA process helps to change the plan is at the consideration of alternatives and mitigation. Good consultation of stakeholders also helps to ensure that the plan is robust and sustainable. These stages take time and good collaboration between the SEA and plan teams.

Good practice: lessons learnt

- Procedural effectiveness requires clear integration of the SEA process with the plan process.
- Start the SEA early and leave enough time for SEA.
- The consideration of alternatives and mitigation measures is key to an effective SEA process.
- Monitoring is ongoing, which will allow a more focused SEA on the next iteration.

SEA EFFECTIVENESS DIMENSION: PLURALIST
Name of the plan: Viennese Waste Management Plans 1999–2018, Austria *Extracted from the special issue on SEA effectiveness in the journal* Impact Assessment and Project Appraisal
The plan URL: https://www.wien.gv.at/english/environment/protection/reports/pdf/waste-04.pdf **SEA legislation:** In Austria, the SEA Directive is transposed by amending many existing acts. http://www.strategischeumweltpruefung.at/ms/strategischeumweltpruefung/sup_grundlagen/sup_gesetze/sup_oesterreich/ **SEA guidelines:** https://www.oeaw.ac.at/en/ita/projects/finished-projects/2013/handbook-strategic-environmental-assessment/

The story

Bottlenecks in the capacity of Viennese waste treatments plants became foreseeable at the end of the last century. The possibility of a third incineration plan was politically sensitive. To address the problem of how to manage future waste, a participative "SEA Round Table" was set up, including members of the Vienna city administration (including planning and environmental authorities), environmental NGOs and external experts (from universities or consulting offices). Their task was to develop a consensual waste management plan. This was achieved through several 1- to 2-day workshops to draft the plan, assess the environmental impacts of alternatives and find consensus on the best planning solution. The workshops were facilitated by an external expert.

After the workshops, the formerly opposed "waste avoidance group" and "waste incineration group" pulled together, moving from an approach of "either waste avoidance or waste incineration" to "both waste avoidance and waste incineration". The SEA Round Table also altered the planners' and the politicians' visions, leading to more environmentally and socially sound plans: from waste treatments and end-of-the-pipe solutions to identifying solutions at the root of the problem.

SEA Round Tables have been used to develop the next three rounds of Vienna's waste management plans, with the SEA process being developed further each time. The SEA Round Table model has also been "exported" to other provinces in Austria and beyond (e.g. to Luxembourg and Germany).

The role of SEA

The SEA sets the framework for an intense and effective participatory process. This analytic-deliberative SEA approach produces a common understanding of the problems and issues at stake; it led to a comprehensive view about waste management. This not only optimised the quality of the Viennese waste management plan, but also resulted in measures that were commonly agreed and implementable. Moreover, it led to a new style of co-operation within the Viennese waste management community.

The importance of pluralist effectiveness

A participatory SEA approach that engages with multiple stakeholders (with often conflicting views) in an open and collaborative manner throughout the planning process can produce a common understanding of problems and result in consistent and optimised recommendations. This can ultimately contribute to more socially acceptable and environmentally sound plans that are also easier to implement.

Good practice: lessons learnt

- When a proactive participatory approach is adopted and the right atmosphere is set, co-operation is easier.
- Early engagement with different stakeholder groups can facilitate a shared understanding of problems and lead to more comprehensive (and often) innovative solutions, as well as facilitate their implementation.
- Stakeholders have to approach the process with an open mind.

SEA EFFECTIVENESS DIMENSION: SUBSTANTIVE

Name of the plan: Thames Estuary 2100 Flood Risk Management Plan, UK

Proposed by the SEA effectiveness study team

The plan URL: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/322061/LIT7540_43858f.pdf

SEA legislation: Environmental Assessment of Plans and Programmes Regulations 2004

http://www.legislation.gov.uk/uksi/2004/1633/contents/made

SEA guidelines: https://www.gov.uk/guidance/strategic-environmental-assessment-and-sustainability-appraisal

The story

Thames Estuary 2100 (TE2100) is a strategic, long-term flood risk management plan prepared by the UK Environment Agency to manage the flood risk in London and the Thames Estuary to the end of the century. The project recognised that the existing flood defences were getting older and that flooding will worsen in the future. It was the first UK flood risk management plan to place climate change adaptation at its core. The aim of TE2100 is to support and inform sustainable land use planning, protect the cultural and social value of the estuary, enhance/restore estuarine ecosystems to contribute to biodiversity and consider key legislation such as the WFD and Habitats Directive.

Studies were undertaken over 6 years to understand how flood risk was managed in/near the estuary and what options were available for managing tidal flood risk. The Environment Agency both prepared the plan and carried out the SEA, ensuring that the plan and SEA processes were aligned from the start.

© Thames Estuary 2100 Plan, Environment Agency 2012.

The role of SEA

Ten options were tested for efficiency, effectiveness and environmental and social impacts to 2070. Options with severe environmental impacts were rejected at an early stage. This ultimately led to the recommendation of continuing the existing regime of flood defence repair/maintenance until 2070.

The plan recognised that significant uncertainty surrounds climate change predictions and addressed this by recommending that the plan is adjusted as the climate changes and the understanding of the impacts of climate change evolves. The plan also requires ongoing monitoring: the first 5-year review of the plan was produced in 2016. This monitoring helps to assess whether the plan interventions are required at an earlier or a later date and whether or not the interventions are adequately managing the flood risk. Some monitoring indicators also help to identify whether or not the estuary is changing in a way that is different to that envisaged by the plan and therefore whether or not the plan interventions need to be reviewed.

The importance of substantive effectiveness

SEA can lead to significant changes to even a very strategic plan such as the TE2100. In this case, it supported the choice of a "monitor and manage" preferred alternative, which is significantly cheaper than any alternative involving new infrastructure would have been. The integration of the SEA process from the outset meant that alternatives and the shaping of the plan were considered early on.

Good practice: lessons learnt

- When plan and SEA processes are aligned and integrated early, this can lead to a real influence of the SEA on the plan, and particularly for alternatives development.
- Alternatives with unacceptable environmental impacts and that did not adequately deal with flood risk were screened out.
- SEA can drive the monitoring of plans to ensure that the real impacts are captured and plans are adjusted.
- Uncertainty can be managed and integrated into long-term planning.

SEA EFFECTIVENESS DIMENSION: KNOWLEDGE AND LEARNING

Name of the plan: EirGrid Grid25 Implementation Programme 2011–2016, Ireland

Proposed by the SEA effectiveness project team

The plan URL: http://www.eirgridgroup.com/site-files/library/EirGrid/Grid25-Implementation-Programme-2011-2016.pdf

SEA legislation: Statutory Instrument (S.I.) No. 200 of 2011 [European Communities (Environmental Assessment of Certain Plans and Programmes) (Amendment) Regulations 2011]

http://www.irishstatutebook.ie/eli/2011/si/200/made/en/print

S.I. No. 201 of 2011 [Planning and Development (Strategic Environmental Assessment) (Amendment) Regulations 2011]

http://www.irishstatutebook.ie/eli/2011/si/201/made/en/print

**SEA guidelines:** http://www.epa.ie/monitoringassessment/assessment/sea/resources/

The story

The Grid25 strategy, published in 2008, envisaged an extension to the electricity transmission network to accommodate increasing demand and new renewable energy sources. It was not subject to SEA. The subsequent Grid25 Implementation Programme 2011–2016 was politically driven, with a clear set of needs and predefined infrastructural development areas that emerged from the strategy, but plan-makers were aware of the need for SEA and very open to incorporating its findings.

The plan-making team and senior management within EirGrid were engaged in the SEA process from the outset and all SEA recommendations were incorporated into the programme.
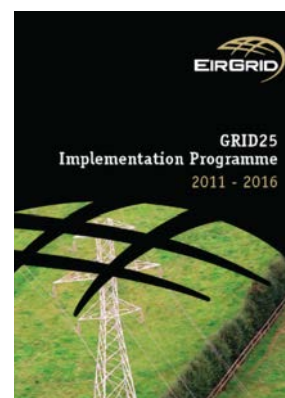
The role of SEA

The SEA led to the incorporation of a mitigation measure for authoritative evidence-based studies examining the actual effects of the construction and existence of power transmission projects, to inform future plans and projects. All planned evidence-based studies have been carried out and are being used to develop biodiversity and cultural heritage guidance for the electricity network. The SEA has led to environmental integration into individual projects, setting a robust framework for the interventions that came out of the programme.

The biggest impact of SEA was the creation of a multi-disciplinary environmental team within EirGrid, which, in turn, influenced a revised development framework for EirGrid projects, with procedures to proactively facilitate reductions in potential environmental impacts at project level.

The importance of knowledge and learning effectiveness

The knowledge and learning obtained from this SEA have shaped internal guidance and procedures within the company. More importantly, they are significantly shaping the planning and assessment processes of the EirGrid Implementation Programme 2017–2022. Environmental protection is central to the new Implementation Programme, with a priority to utilise and upgrade the existing grid where possible to meet the identified needs of grid development.

Good practice: lessons learnt

- SEA improves understanding of environmental issues.
- Capacity building can ultimately contribute to restructuring within organisations and to proactive environmental integration into plan-making over time.

SEA EFFECTIVENESS DIMENSION: TRANSACTIVE

Name of the plan: Nepal Earthquake 2015 Rapid Environmental Assessment, Nepal

Proposed by the SEA effectiveness project team

The plan URL: http://d2ouvy59p0dg6k.cloudfront.net/downloads/rea_2.pdf

SEA legislation: Not applicable

The story

A magnitude 7.8 earthquake struck Nepal on 25 April 2015, followed by hundreds of aftershocks, including a 7.1 shock on 12 May 2015. Together, these resulted in nearly 9000 deaths, the destruction of 850,000 homes and more than 3.5 million people being made homeless. Water sources and dam stability were affected, forest cover was lost, hazardous wastes were released and dead bodies contaminated the environment. Reconstruction is expected to take many years and much investment, but also to provide an opportunity for safer and greener development.

Between May and July 2015, an interdisciplinary team led by the Nepalese Ministry of Science, Technology and Environment carried out a Rapid Environmental Assessment (REA) to understand the environmental and social damage caused by the earthquake and to prepare a strategy to restore and rehabilitate damaged ecosystems.

The role of SEA

The REA proposed 11 principles for recovery and reconstruction, including the promotion of safe and green building materials; the reuse of disaster debris; the development of environmentally responsible solid and hazardous waste management plans; support for environmentally responsible agriculture, including the use of only tested crop varieties and animal breeds; the promotion of reforestation; and the promotion of equity in the recovery/reconstruction process, with particular attention paid to women and marginalised groups.

A United Nations Environment Programme (UNEP) and United Nations Office for the Coordination of Humanitarian Affairs (OCHA) report 6 months later found that some, but not all, of these points had been implemented. Part of the problem was that the REA was officially shared with partners only in September 2015, too late to be considered during the initial and main wave of the humanitarian response. A cash transfer system was set up quickly, with a requirement for cash-for-work programmes to be environmentally friendly. The environmental benefits of this scheme seem to have been limited, but beneficiaries may otherwise have purchased less durable items, potentially generating more waste as items were quickly discarded. Food security vouchers placed requirements on seed suppliers and regulations on genetically modified organisms. However, the timely distribution of seeds within the planting season took precedence over careful sourcing of the seeds. Much building material was reused, but huge amounts of debris still hampered efforts to rebuild. Subsequent studies and post-disaster reports have supported the REA's focus on resilience, "build back better" and mainstreaming of gender inclusion.

The importance of transactive effectiveness

In some situations, such as emergencies, only rapid assessments are feasible. A rapid assessment with properly implemented findings can be more substantively effective than a full SEA. Rapid assessments can provide much of the information that a full SEA would provide but, given the time limitations associated with their very nature, they do not have the pluralist dimension.

Good practice: lessons learnt

- REA findings must be shared among partner organisations.

- Rapid assessments can provide the "entrée" and context for a full SEA or act as a pilot/example when a full SEA is not legally required.

Appendix 3   Consultation Questionnaire

This questionnaire formed the basis of the semi-structured interviews with representatives involved in the case studies and international SEA experts (Tables 3.4 and 3.5, respectively) and it was also circulated as part of a wider consultation process in the form of an online questionnaire.

STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA)
EFFECTIVENESS QUESTIONNAIRE

This questionnaire is part of a research project into the effectiveness of the SEA process commissioned by the Irish Environmental Protection Agency. We are seeking your views on the effectiveness, benefits and costs of the SEA process (other than the direct process of preparing the SEA report).

We have made this questionnaire as short as possible. It will take approximately 15–20 minutes to fill it in. Thank you for your time and input.

Which country are you from? *This question will solely be included in the online version of the questionnaire.*

1. **In what role have you been involved in SEA** (e.g. consultant carrying out SEA, local authority officer commissioning SEA, environmental authority or consultee providing observations on SEA, etc.) and in approximately how many SEAs? Thinking back on the last SEA you have been involved in, please specify the type of plan/programme with regard to sector/planning hierarchy (e.g. local, national).

2. How would you describe the **political context and the decision-making culture** in which the SEA was carried out? Please elaborate if possible (e.g. how "political" were the plans, how open were decision-makers and the plan-making authority to new environmental information, were planning solutions pre-determined and by whom).

3. In terms of **actual changes made as a result of the SEA**, please tick all of the appropriate boxes below and rank them (1, 2, 3, etc.) to identify the more important/significant changes:

Plan-makers used the SEA information to develop, review or discuss the plan during decision-making	*Plan-makers* altered their vision(s) regarding the plan due to SEA	New alternatives were added with greater environmental focus	Public opinion was integrated into the plan-making process	The proposed mitigation measures were implemented accurately	Monitoring measures and responsibilities were added
Decision-makers used the SEA information to develop, review or discuss the plan during decision-making	*Decision-makers* altered their vision(s) regarding the plan due to SEA	*Public* altered their vision(s) regarding the plan due to SEA	The SEA resulted in restriction to development/ economic activity	The plan became more environmentally and/or socially friendly due to SEA	The SEA resulted in better environmental protection (on the ground)
Other (please specify)					

4. What *key changes to the plan*, if any, did the SEA process lead to? Please elaborate your answer on the possible reasons why.

5. What (other) *key changes to the plan* were recommended by the SEA but **not incorporated** into the plan (if any)? Why weren't they, in your opinion?

6. Was the most environmentally sustainable **alternative** included in the plan?

Yes		Partly		No	

   If you answered "No" or "Partly", why do you think the most sustainable alternatives were not included in the plan?

7. As a way of eliciting **public participation**, how effective was the SEA process at (from 1 "not at all" to 5 "very"):

Providing information to the public?		Empowering marginalised groups?	
Eliciting information/views from the public?		Integrating information/views from the public in plan-making?	
Other (please specify)			

8. How **effective** was the SEA (from 1 "not at all" to 5 "very") in:

	Promoting	Achieving
Short-term environmental protection		
Long-term environmental protection		
Reduction of socio-economic deprivation		
Equity between generations		
Other (please specify)		

9. If you know, roughly how much did the SEA **cost**? If you could, please elaborate (e.g. internal costs, man-days and external consultants).

10. What, in your view, is the **balance of benefits and costs** of SEA?

Costs greatly outweigh the benefits	Costs somewhat outweigh the benefits	Neutral costs and benefits	Benefits somewhat outweigh the costs	Benefits greatly outweigh the costs

   If you could, please elaborate, based on your experience, why.

11. Overall, how effective do you think that the SEA was with regard to the various dimensions below?

	Very effective	Effective	Somewhat	Poor	Not effective
Context – whether appropriate legislation and guidance exists, competent authorities have adequate capacity to carry out SEA, etc.					
Procedural – whether the stages of the SEA process are carried out well (e.g. whether good baseline data are collected or alternatives are considered well)					
Pluralist – whether the SEA helps to achieve greater public participation and helps to accommodate competing points of view					
Substantive – whether the SEA leads to good outcomes on the ground (e.g. whether environmentally harmful impacts are avoided)					

Normative – whether the SEA supports, for example, achievement of sustainable development and mutually reinforcing gains, and minimisation of trade-offs					
Knowledge and learning – whether the stakeholders involved change their way of thinking as a result of the SEA and whether monitoring helps to improve wider SEA practice					
Transactive – whether the SEA process is efficient (e.g. whether it lengthens or shortens the plan approval process, how much it costs and whether personnel with adequate skills are readily available)					

12. What is the **single most important criterion** (i.e. enabler) for SEA to be **effective**, based on your own experience?

13. In your opinion, what is the **most common difficulty** (i.e. barrier) hampering effective SEA?

14. Can you suggest a **case study** where SEA has been effective in one of the dimensions listed in question 11? If so, please provide the name of the plan, state the SEA effectiveness dimension it relates to and, if possible, provide a brief explanation of the reasons for putting the case study forward.

Thank you very much on behalf of the "Second Review of SEA Effectiveness in Ireland" Project Team.

AN GHNÍOMHAIREACHT UM CHAOMHNÚ COMHSHAOIL

Tá an Ghníomhaireacht um Chaomhnú Comhshaoil (GCC) freagrach as an gcomhshaol a chaomhnú agus a fheabhsú mar shócmhainn luachmhar do mhuintir na hÉireann. Táimid tiomanta do dhaoine agus don chomhshaol a chosaint ó éifeachtaí díobhálacha na radaíochta agus an truaillithe.

Is féidir obair na Gníomhaireachta a roinnt ina trí phríomhréimse:

Rialú: *Déanaimid córais éifeachtacha rialaithe agus comhlíonta comhshaoil a chur i bhfeidhm chun torthaí maithe comhshaoil a sholáthar agus chun díriú orthu siúd nach gcloíonn leis na córais sin.*

Eolas: *Soláthraímid sonraí, faisnéis agus measúnú comhshaoil atá ar ardchaighdeán, spriocdhírithe agus tráthúil chun bonn eolais a chur faoin gcinnteoireacht ar gach leibhéal.*

Tacaíocht: *Bímid ag saothrú i gcomhar le grúpaí eile chun tacú le comhshaol atá glan, táirgiúil agus cosanta go maith, agus le hiompar a chuirfidh le comhshaol inbhuanaithe.*

Ár bhFreagrachtaí

Ceadúnú

Déanaimid na gníomhaíochtaí seo a leanas a rialú ionas nach ndéanann siad dochar do shláinte an phobail ná don chomhshaol:

- saoráidí dramhaíola *(m.sh. láithreáin líonta talún, loisceoirí, stáisiúin aistrithe dramhaíola)*;
- gníomhaíochtaí tionsclaíocha ar scála mór *(m.sh. déantúsaíocht cógaisíochta, déantúsaíocht stroighne, stáisiúin chumhachta)*;
- an diantalmhaíocht *(m.sh. muca, éanlaith)*;
- úsáid shrianta agus scaoileadh rialaithe Orgánach Géinmhodhnaithe *(OGM)*;
- foinsí radaíochta ianúcháin *(m.sh. trealamh x-gha agus radaiteiripe, foinsí tionsclaíocha)*;
- áiseanna móra stórála peitril;
- scardadh dramhuisce;
- gníomhaíochtaí dumpála ar farraige.

Forfheidhmiú Náisiúnta i leith Cúrsaí Comhshaoil

- Clár náisiúnta iniúchtaí agus cigireachtaí a dhéanamh gach bliain ar shaoráidí a bhfuil ceadúnas ón nGníomhaireacht acu.
- Maoirseacht a dhéanamh ar fhreagrachtaí cosanta comhshaoil na n-údarás áitiúil.
- Caighdeán an uisce óil, arna sholáthar ag soláthraithe uisce phoiblí, a mhaoirsiú.
- Obair le húdaráis áitiúla agus le gníomhaireachtaí eile chun dul i ngleic le coireanna comhshaoil trí chomhordú a dhéanamh ar líonra forfheidhmiúcháin náisiúnta, trí dhíriú ar chiontóirí, agus trí mhaoirsiú a dhéanamh ar leasúchán.
- Cur i bhfeidhm rialachán ar nós na Rialachán um Dhramhthrealamh Leictreach agus Leictreonach (DTLL), um Shrian ar Shubstaintí Guaiseacha agus na Rialachán um rialú ar shubstaintí a ídíonn an ciseal ózóin.
- An dlí a chur orthu siúd a bhriseann dlí an chomhshaoil agus a dhéanann dochar don chomhshaol.

Bainistíocht Uisce

- Monatóireacht agus tuairisciú a dhéanamh ar cháilíocht aibhneacha, lochanna, uiscí idirchriosacha agus cósta na hÉireann, agus screamhuiscí; leibhéil uisce agus sruthanna aibhneacha a thomhas.
- Comhordú náisiúnta agus maoirsiú a dhéanamh ar an gCreat-Treoir Uisce.
- Monatóireacht agus tuairisciú a dhéanamh ar Cháilíocht an Uisce Snámha.

Monatóireacht, Anailís agus Tuairisciú ar an gComhshaol

- Monatóireacht a dhéanamh ar cháilíocht an aeir agus Treoir an AE maidir le hAer Glan don Eoraip (CAFÉ) a chur chun feidhme.
- Tuairisciú neamhspleách le cabhrú le cinnteoireacht an rialtais náisiúnta agus na n-údarás áitiúil *(m.sh. tuairisciú tréimhsiúil ar staid Chomhshaol na hÉireann agus Tuarascálacha ar Tháscairí)*.

Rialú Astaíochtaí na nGás Ceaptha Teasa in Éirinn

- Fardail agus réamh-mheastacháin na hÉireann maidir le gáis cheaptha teasa a ullmhú.
- An Treoir maidir le Trádáil Astaíochtaí a chur chun feidhme i gcomhair breis agus 100 de na táirgeoirí dé-ocsaíde carbóin is mó in Éirinn.

Taighde agus Forbairt Comhshaoil

- Taighde comhshaoil a chistiú chun brúnna a shainaithint, bonn eolais a chur faoi bheartais, agus réitigh a sholáthar i réimsí na haeráide, an uisce agus na hinbhuanaitheachta.

Measúnacht Straitéiseach Timpeallachta

- Measúnacht a dhéanamh ar thionchar pleananna agus clár beartaithe ar an gcomhshaol in Éirinn *(m.sh. mórphleananna forbartha)*.

Cosaint Raideolaíoch

- Monatóireacht a dhéanamh ar leibhéil radaíochta, measúnacht a dhéanamh ar nochtadh mhuintir na hÉireann don radaíocht ianúcháin.
- Cabhrú le pleananna náisiúnta a fhorbairt le haghaidh éigeandálaí ag eascairt as taismí núicléacha.
- Monatóireacht a dhéanamh ar fhorbairtí thar lear a bhaineann le saoráidí núicléacha agus leis an tsábháilteacht raideolaíoch.
- Sainseirbhísí cosanta ar an radaíocht a sholáthar, nó maoirsiú a dhéanamh ar sholáthar na seirbhísí sin.

Treoir, Faisnéis Inrochtana agus Oideachas

- Comhairle agus treoir a chur ar fáil d'earnáil na tionsclaíochta agus don phobal maidir le hábhair a bhaineann le caomhnú an chomhshaoil agus leis an gcosaint raideolaíoch.
- Faisnéis thráthúil ar an gcomhshaol ar a bhfuil fáil éasca a chur ar fáil chun rannpháirtíocht an phobail a spreagadh sa chinnteoireacht i ndáil leis an gcomhshaol *(m.sh. Timpeall an Tí, léarscáileanna radóin)*.
- Comhairle a chur ar fáil don Rialtas maidir le hábhair a bhaineann leis an tsábháilteacht raideolaíoch agus le cúrsaí práinnfhreagartha.
- Plean Náisiúnta Bainistíochta Dramhaíola Guaisí a fhorbairt chun dramhaíl ghuaiseach a chosc agus a bhainistiú.

Múscailt Feasachta agus Athrú Iompraíochta

- Feasacht chomhshaoil níos fearr a ghiníúint agus dul i bhfeidhm ar athrú iompraíochta dearfach trí thacú le gnóthais, le pobail agus le teaghlaigh a bheith níos éifeachtúla ar acmhainní.
- Tástáil le haghaidh radóin a chur chun cinn i dtithe agus in ionaid oibre, agus gníomhartha leasúcháin a spreagadh nuair is gá.

Bainistíocht agus struchtúr na Gníomhaireachta um Chaomhnú Comhshaoil

Tá an ghníomhaíocht á bainistiú ag Bord lánaimseartha, ar a bhfuil Ard-Stiúrthóir agus cúigear Stiúrthóirí. Déantar an obair ar fud cúig cinn d'Oifigí:

- An Oifig um Inmharthanacht Comhshaoil
- An Oifig Forfheidhmithe i leith cúrsaí Comhshaoil
- An Oifig um Fianaise is Measúnú
- Oifig um Chosaint Radaíochta agus Monatóireachta Comhshaoil
- An Oifig Cumarsáide agus Seirbhísí Corparáideacha

Tá Coiste Comhairleach ag an nGníomhaireacht le cabhrú léi. Tá dáréag comhaltaí air agus tagann siad le chéile go rialta le plé a dhéanamh ar ábhair imní agus le comhairle a chur ar an mBord.

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Second Review of Strategic Environmental Assessment Effectiveness in Ireland

epaResearch
Climate - Water - Sustainability
Identifying pressures • Informing policy • Developing solutions

Authors: Ainhoa González, Riki Therivel, Antonia Gaughran and Craig Bullock

Identifying Pressures

This review seeks to contribute to and inform Ireland's response to the requirement of Directive 2001/42/EC on Strategic Environmental Assessment (SEA) for regular review of the effectiveness of SEA implementation in the Member States. The SEA Directive aims to integrate environmental considerations into planning and decision-making, with a view to promoting sustainable development. However, the extent to which the findings of environmental assessments are informing decisions and/or having a positive environmental effect on the ground is not fully understood. In addition, SEA processes have time and financial implications for plan-making authorities and statutory environmental authorities, and there has been concern to justify their effectiveness.

Informing Policy

SEA legal challenges across Europe are indicative of plans/programmes increasingly coming under more scrutiny. In addition, the recent European Commission (EC) Regulatory Fitness and Performance (REFIT) evaluation of the SEA Directive has examined, among other things, the extent to which the Directive's objectives have been achieved, the resources required to achieve the Directive's objectives, and its added value. This second review of effectiveness of SEA in Ireland has examined these considerations and identified progress made since the first effectiveness review undertaken in 2012. It has explored progress on how the Directive has been implemented (i.e. procedural effectiveness) and gathered insights from plan-makers and SEA practitioners on less tangible gains, such as improved plans, increased environmental awareness and more proactive environmental integration in subsequent plans and, in turn, projects. The review has also identified costs and benefits of SEA.

These findings have been provided to the Commission for consideration as part of the EC SEA REFIT evaluation and have been shared with the wider international impact assessment community. More importantly, a number of strategic recommendations are put forward, for consideration by the SEA environmental authorities, aimed at fostering ongoing improvement in SEA processes in Ireland and more environmentally sustainable plans/programmes.

Developing Solutions

The review findings recognise that progress has been made, but also identify a number of remaining shortcomings, particularly related to SEA reporting, public engagement and monitoring. A number of recommendations for future initiatives and actions are put forward to help address some of the existing key limitations. In addition, the report includes good practice step-by-step guidance on SEA statements and monitoring. Both the recommendations and the guidance are intended to foster and further good SEA practice in Ireland.