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Tiering of Environmental Assessment - The Influence of Strategic Environmental Assessment on Project-level Environmental Impact Assessment

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Rialtas na hÉireann
Government of Ireland

ENVIRONMENTAL PROTECTION AGENCY

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- Office of Radiation Protection and Environmental Monitoring
- Office of Communications and Corporate Services

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EPA RESEARCH PROGRAMME 2021–2030

Tiering of Environmental Assessment – The Influence of Strategic Environmental Assessment on Project-level Environmental Impact Assessment

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EPA Research Report

Prepared for the Environmental Protection Agency

by

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Executive Summary

Strategic Environmental Assessment (SEA) and Environmental Impact Assessment (EIA) aim to identify and mitigate environmental impacts resulting from plan, programme (the realm of SEAs) and project (EIA) implementation. The organised transfer of information and issues from one planning and assessment level to the other (e.g. SEA to EIA) is known as tiering. This report examines tiering of environmental assessments, focusing on the influence of SEA on EIA, with regard to both processes and outcomes. This examination has been informed by a review of relevant international literature, 21 Irish SEA and EIA case studies and 28 interviews with international and national SEA and/or EIA experts.

SEA–EIA tiering has the potential to streamline and strengthen not only impact assessment processes, but also associated plans and projects, particularly in land-use planning where there is a clear existing planning hierarchy. Tiering can:

- provide data for lower-tier SEA/EIAs;
- identify data gaps that could be easily filled by lower-tier SEA/EIAs;
- set terms of reference for lower-tier SEA/EIAs, making them more focused and saving time and money;
- consider cumulative impacts and provide information about thresholds and mitigation for lower-tier SEA/EIAs;
- influence project development, leading to a "trickle-down" of environmental protection;
- allow strategic decisions on large-scale developments to be made early on (e.g. protecting strategic development sites from inappropriate development), providing more certainty for developers;
- allow strategic-scale mitigation measures to be set, which may otherwise be harder to put in place;
- consider and address public concerns at the strategic scale, reducing problems and friction in the development of projects.

The fact that planning is not linear (e.g. projects and their EIAs may emerge before plans), and that there is often a substantial time lag between tiers, can limit the potential for effective tiering. Tiering is also held back by "silo" approaches to assessments, and by a general lack of communication between SEA and EIA practitioners.

This report puts forward recommendations to improve tiering practice:

- **Prepare plans and SEA environmental reports (SEA ERs) with projects and EIA reports (EIARs) in mind.** Planners and SEA practitioners should undertake assessments with lower-tier assessments in mind, and provide clearer guidance, mitigation and data acquisition/ monitoring recommendations for lower tiers.
- **Prepare EIARs with SEA ERs in mind.** EIAs should align with higher-tier SEAs by checking that all key issues are addressed, data gaps are filled, proposed alternatives are aligned with strategic choices, and mitigation measures are integrated into the EIA process and documentation.
- **Screen and/or scope out EIA where appropriate**. SEAs could identify circumstances in which the scope of the EIA can be restricted (e.g. projects in area Y do not need to consider flood risk or agricultural soil quality). This would save significant time and money at the project stage, although any screening/scoping out must not contravene the requirements of the SEA and EIA directives.
- **Integrate SEA mitigation measures** and other relevant outcomes of the SEA fully **into the plan**, rather than keeping them in a separate document. This can help effectively inform project mitigation.
- **Use monitoring to link the SEA and EIA.** Strategic monitoring indicators can be brought down to the project level to follow up on the implementation of SEA mitigation measures, fill data gaps and identify unforeseen adverse effects. The monitoring information can accumulate back-up to inform the strategic monitoring indicators and future SEAs.

- **Set up an SEA and EIA reporting system based on a Global Information System (GIS).** The flow of data between assessment tiers can be facilitated by centralising data in a single public GIS interface that maps the zoning of lands, links each zone to the relevant "conditions" and/or mitigation measures resulting from SEA, and shows the location of planning applications and their EIAs.
- **Set up a compliance check system.** Including an objective in the plan that requires all planning applications to be compliant with the strategic environmental protection objectives and mitigation measures would ensure that tiering takes place.
- **Avoid silo assessment approaches** by improving communication and data sharing between those who write plans (and their SEA ERs) and those who implement these plans and propose projects (and prepare EIARs).
- **Training** and focused guidance would enhance awareness and understanding of the value of tiering and improve both SEA and EIA processes and their links.

More detailed recommendations can be found in the guidance note that accompanies this report.

1 Introduction

This report presents the context, methodology and key findings of the project "Tiering of Environmental Assessment – The Influence of Strategic Environmental Assessment on Project-level Environmental Impact Assessment", funded by the Environmental Protection Agency (EPA). The main goals of the project were to (1) review the status of Strategic Environmental Assessment (SEA) and Environmental Impact Assessment (EIA) links in Ireland, guided by identified national and international good practice and (2) prepare a guidance note on how SEA–EIA links and tiering could be improved. This report should be read in conjunction with the guidance note.

1.1 Tiering: Definition and Legal Framework

Tiering is the organised transfer of information and issues from one planning level to another, supported by environmental assessments. Such transfer of information and issues can be vertical, horizontal and/or diagonal (Figure 1.1).

In theory, planning levels are hierarchical and sequential: policies precede, inform and set a structure for lower-tier plans; plans precede and set a structure for programmes and projects. More strategic, "higher-tier", plans inform and constrain more detailed, "lower-tier" plans. Environmental assessments are also, in theory, hierarchical and sequential: higher-tier SEAs precede, inform and set a structure for lower-tier SEAs, which do the same for project EIAs (Figure 1.2). As a result, the most common type of tiering is *vertical, top-down tiering*, in which issues are typically trickled down between different geographical scales (from global to local) or between planning levels (from policy to project) or administrative/government levels (from international to regional). Nevertheless, *horizontal tiering* is also possible; in this case, information/ issues transfer across the same geographical or administrative tier, for example across the same plan level for adjacent planning authorities, or for different sectors (e.g. transport, waste, housing) within a planning authority. Similarly, *diagonal tiering*, that is, a combination of vertical and horizontal tiering, can occur, for example where a national spatial policy influences local transport plans.

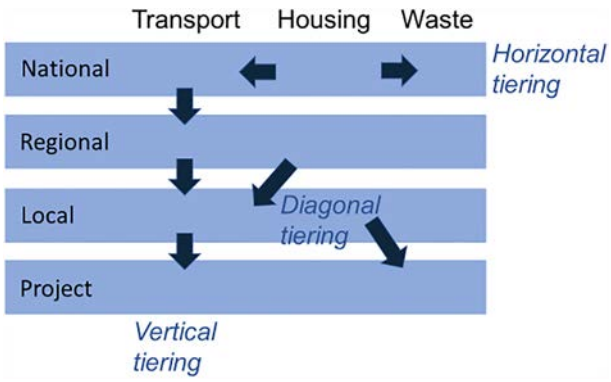

Figure 1.1. Types of tiering.

European (and Irish) legislation on both SEA and EIA includes tiering requirements. Annex II of Directive 2001/42/EC on SEA (EU, 2001) includes the following screening criteria to determine whether or not a plan requires SEA:

> The characteristics of plans and programmes, having regard, in particular, to:
>
> - The degree to which the plan or programme sets a framework for projects and other activities, either with regard to the location, nature, size and operating conditions or by allocating resources;
> - The degree to which the plan or programme influences other plans and programmes including those in a hierarchy…

The SEA Directive also gives general guidance on how to reduce duplication through tiering:

> 4.3 Where plans and programmes form part of a hierarchy, Member States shall, with a view to avoiding duplication of the assessment, take into account the fact that the assessment will be carried out, in accordance with this Directive, at different levels of the hierarchy.

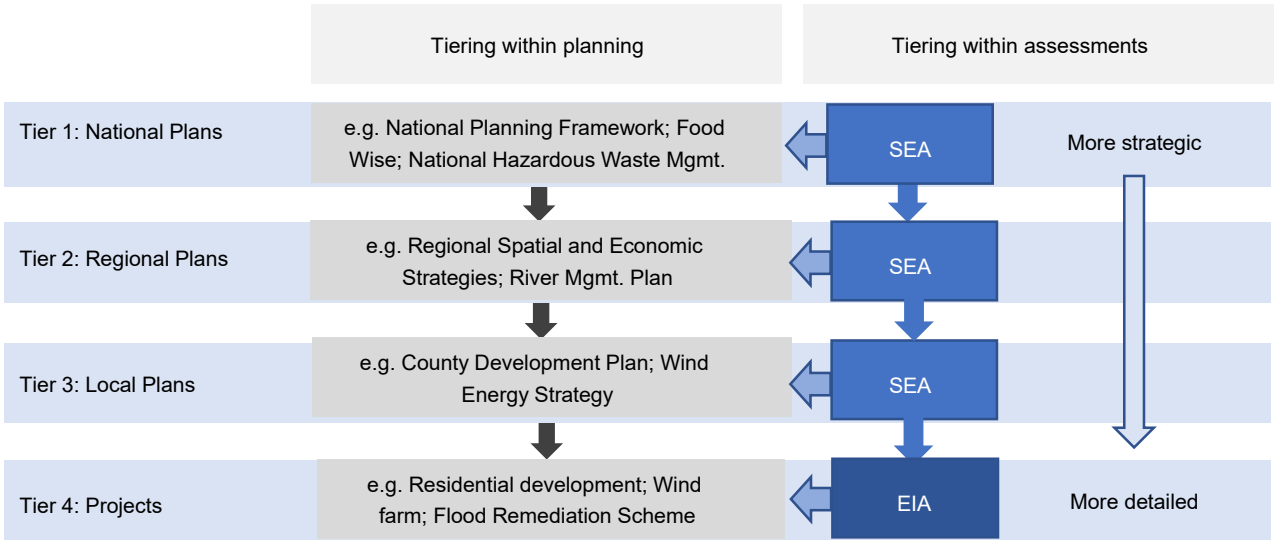

Figure 1.2. Tiering of plans and projects and their environmental assessments.

> 5.2 The environmental report… shall include the information that may reasonably be required taking into account… the extent to which certain matters are more appropriately assessed at different levels in that process in order to avoid duplication of the assessment.
>
> 5.3 Relevant information available on environmental effects of the plans and programmes and obtained at other levels of decision-making or through other Community legislation may be used for providing the information referred to in Annex I.

The SEA Directive also requires environmental reports to provide information relevant to other plans, as specified in Annex I requirements:

> (a) an outline of the contents and main objectives of the plan or programme and relationship with other relevant plans and programmes.
>
> (f) the likely significant (1) effects on the environment… These effects should include secondary, cumulative, synergistic…

In addition, the preamble to the EIA Directive 2014/52/EU (EC, 2014) notes that:

> - With a view to avoiding duplication of assessments, the results of other assessments under Union legislation such as [the SEA Directive] should, where relevant and available, be taken into account.
> - Where the obligation to carry out assessments related to environmental issues arise simultaneously from this Directive and [the SEA Directive], Member States should be able to provide for coordinated and joint procedures fulfilling the requirements of the relevant Union legislation.

1.2 Tiering Benefits

A review of 53 international peer-reviewed articles on environmental assessment tiering reveals significant benefits and current barriers to tiering. Much of the international literature on tiering preceded the introduction of SEA legislation,[1] and concerned not so much the tiering process, but rather the advantages of having strategic tiers of environmental assessment. Multiple advantages are noted in the international

1 The US National Environmental Policy Act 1970 applies to "actions", including plans and programmes, but in its early days primarily applied to projects. Environmental assessment has generally started at the project level and has been extended to strategic actions – the concept of environmental assessment has tiered "upwards".

literature (e.g. AASHTO, 2009; Fischer, 2003; Gunn and Noble, 2011; Kirchhoff *et al*., 2011; Noble *et al*., 2013; Sánchez and Silva-Sánchez, 2008; Siqueira-Gay and Sánchez, 2019; Therivel, 2010) and include:

- better strategic planning decisions, since assessments are carried out at the "right" time, and are strategic rather than reacting to project proposals;
- better analysis of cumulative impacts than that possible with only project EIA;
- better consideration of strategic-scale impacts such as climate change and deprivation, and better assurance that these are considered at the project stage;
- consideration of strategic forms of impact mitigation such as energy efficiency standards for all new development in an area, or protection of wildlife corridors;
- public involvement at a strategic scale, with associated improvements in democracy; and
- better links between planning at all levels and improved environmental protection/enhancement.

This research, instead, takes the existence of SEA for plans and programmes as a given, and explores what the tiering process itself – not just the existence of new tiers of assessment - adds to SEA, EIA and planning processes. The benefits can be grouped according to the contributions tiering can make to (1) plans and projects and (2) the impact assessment processes themselves. The benefits are particularly applicable to land-use planning, where there is a clear existing hierarchy of plans and projects.

1.2.1 Benefits of tiering within plans

Undertaking SEA effectively on a higher-tier plan can then **inform and influence the development of lower-tier plans and projects.** The SEA could lead to a more sustainable or environmentally beneficial higher-tier plan: this would "trickle down" through lower-tier plans and projects, which would, in turn, also be more sustainable (Therivel, 2010; White and Noble, 2013). Even more positively, in theory, SEA of a higher-tier plan can help to develop a desired future scenario for the plan area, which can be used as a framework for project EIAs: would the project contribute to the achievement of that scenario? (Noble *et al*., 2013).

SEA of a higher-tier plan can **reduce problems and resolve challenges in the development of lower-tier plans or projects** (Fischer, 2003). For example, SEA can help to identify sites where development would have particularly significant effects and should not be permitted, thus avoiding development proposals that would be unlikely to succeed. In the absence of higher-tier assessment, lower-tier environmental assessment or public concern may identify significant issues that can be resolved only retrospectively by using a strategic approach (Sánchez and Silva-Sánchez, 2008).

SEA of higher-tier plans **allows strategic decisions on large-scale development to be made early on**. This allows future development sites – for instance transport or pipeline corridors, or sites for new towns – to be protected from inappropriate development while funding or other approvals are sought (AASHTO, 2009). This also provides more certainty for developers, who can progress with their proposed developments in the knowledge that, at the strategic scale at least, they are acceptable (Noble *et al*., 2013).

SEA of higher-tier plans **allows strategic-scale mitigation measures to be put in place** that may not be captured or required at lower planning tiers. These include measures to avoid adverse impacts on the environment (e.g. green corridors to reduce biodiversity impacts) or enhance the environment (e.g. biodiversity net gain requirements for individual developments). Clearly, subsequent projects would be less environmentally harmful.

Consideration of cumulative impacts[2] at higher tiers of planning allows conditions or mitigation measures to be set for all subsequent plans and projects, to reduce or ameliorate those impacts. This is not only **forward-looking and precautionary but also fair**, in that it prevents the last project from being responsible for mitigating the cumulative impact of all previous projects (Nooteboom, 2000).

SEA of higher-tier plans can **improve public participation** at that scale, obviating the need to revisit

2 For more detail, refer to the Good Practice Guidance on Cumulative Effects Assessment in Strategic Environmental Assessment: https://www.epa.ie/publications/monitoring--assessment/assessment/EPA-Good-Practice-Guidelines-SEA.pdf (accessed 6 August 2021).

strategic issues of public concern for each subsequent plan or project. For instance, the higher-tier SEA can consider – with appropriate public input – whether a new road is necessary or if other alternatives are preferable. Subsequent lower-tier plans can then progress in the certainty that the strategic "whether" question has been dealt with and focus on the more spatially specific "where" and "how" questions:

> If you can provide that broad scale answer that could be applied to all projects, they [proponents] don't need to keep repeating the same thing over and over again, which causes a lot of strain on the companies that have to come [to public exhibitions], but also on the communities, because they [communities] have to [also] come and answer the same questions over and over and over again… and it is very frustrating. (Noble *et al*., 2013, p. 299)

1.2.2 Benefits of tiering within environmental assessment

A higher-tier environmental assessment can **provide data** for lower-tier assessments, reducing the need to do this in lower-tier environmental assessments. This is possible when environmental/social conditions have not changed significantly between the time of the two assessments, as the shelf life of an SEA Environmental Report (SEA ER) is limited (Fischer, 2003; Nooteboom, 2000). That said, the higher-tier assessment can still point to useful data sources and provide historical information to inform the trend analysis of the lower-tier assessment. The data from the higher tier also need to be of a scale that is still appropriate at the lower tier. This is fine if, for instance, the higher-tier data are in the form of online geographic information systems (GIS) maps that allow for zooming in to smaller scales. Nevertheless, this is not always the case, as higher-tier assessments are supposed to reflect the scale of the higher-tier plan, which tends to reduce their usefulness for lower-tier assessments.

The higher-tier assessment can **identify data gaps** at a time when they could still be easily filled for lower-tier assessments (Noble *et al*., 2013). This would be the case, for instance, with marine plans that aim to identify broad areas for offshore wind farms, but where data on migrating species are limited.

It may also be possible for a higher-tier assessment to **scope out issues for lower-tier assessments**. A local development plan SEA could, for instance, conclude that impacts on flooding or soil quality do not need to be further assessed in an area where flood problems are unlikely, or where agricultural land quality is already poor. The possibility of SEA scoping out issues inappropriately could be managed by ensuring that the scoping criteria are sufficiently precautionary to reduce the likelihood of this happening (Gallagher *et al*., 2015).

The higher-tier assessment can consider the interaction of past, current and possible future activities as part of a **cumulative impact assessment**. This can directly inform lower-tier assessments, including information about standards and thresholds. In the European Union (EU) where the Habitats Directive 92/43/EEC (EU, 1992) requires an assessment of "in combination" impacts, this can also reduce duplication between different types of assessment at the same scale (Bragagnolo *et al*., 2012). Clearly, any cumulative impact assessment would need to be updated to reflect new plans, projects or other changes that have taken place between the two assessments (Gunn and Noble, 2011). Unfortunately, SEA's ability to identify and mitigate cumulative impacts has been limited to date:

> … the SEA process in general has not delivered on its promise in theory and in principle to be a more effective mechanism for coming to grips with and addressing cumulative effects… [SEA's] capability of addressing the problems it purports to address and resolve is not only weak, it's inverse to the escalation of those problems. In other words, the problems it purports to address are getting larger and larger. (Gunn and Noble, 2011, p. 158)

More ambitiously, SEA can provide **an overall structure and information about common issues** important to all subsequent environmental assessments, and **set terms of reference** for lower-tier environmental assessments. Lower-tier environmental assessments then only need to fill in individual programme/project information, saving time and money. This allows the focus and intent of the lower-tier assessments to be clearer, without them

having to address more strategic issues that are beyond the lower-tier assessment's remit (Noble *et al*., 2013). Gunn and Noble (2011, p. 158) suggest that, to achieve these benefits, explicit tiering mechanisms need to be built into the assessment process: "SEA must be designed to provide context for project-based EA [Environmental Assessment], and project-based EA must correspondingly be designed to contribute to, and to respond to, strategic assessments at higher tiers and at regional scales". However, even where an SEA sets a structure and provides common data, some local customisation will be required, requiring time and resources (AASHTO, 2009).

Tiered environmental assessment can also **improve public participation** and reduce opposition to lower-tier plans or projects. Focusing on strategic issues at a higher tier of decision-making allows the public to provide local knowledge and ideas when these issues are still open and "ripe for decision". If the public's perspectives are fully taken into account at the higher tier, then lower tiers of decision-making can focus public participation on more detailed, site-specific issues. Early public participation, where the results of participation are integrated into the planning process, also allows trust and good working relations to be developed between the public and the planning authority (CEQ, 2014). This is particularly important as planning systems become more communicative, aiming to involve all actors in designing and agreeing the plan (João and McLauchlan, 2014).

1.3 Current Constraints to Tiering

However, despite the importance and advantages of tiering, many of these benefits are not achieved in practice.

First, **planning is not a linear, hierarchical process**. Projects (and their EIAs) may emerge before plans (and their SEAs). Similarly, plans can emerge before higher-tier policies (Arts *et al*., 2005; Hildén *et al*., 2004; Kirchhoff *et al*., 2011; Nooteboom, 2000; Pope *et al*., 2013). Several planning tiers may operate at the same time, with different timeframes and different areas of focus (Hildén *et al*., 2004). Tiering can work bottom up as well as top down, with emerging projects strongly influencing higher-level plans. As a result, "the problems of tiering can therefore best be understood in terms of social struggle over problem definitions: the role of a particular tier cannot be deduced from its place in a formal hierarchical structure, but from the meaning that it is given by those who have the power to define the planning situation" (Hildén *et al*., 2004, p. 528).

Even if a higher-tier plan is assessed and adopted, this does not mean that all lower-tier actions that are consistent with the higher-tier plan will be given planning permission or implemented (AASHTO, 2009). It also does not mean that lower-tier actions that are inconsistent with the higher-tier plan will be refused. Projects may be put forward that are not included in the relevant plan, perhaps as a result of new trends (e.g. mobile phone masts), new government policies (e.g. on new towns) or investment decisions by individuals (Doelle, 2018). Equally, the environmental mitigation measures in a plan may not be implemented. For instance, a policy may promote carbon capture for all new power stations, or a plan might require a buffer around wetlands and streams. However, in practice neither may occur, or (perhaps) the power station may face opposition and delay even if it includes carbon capture.

Linked to this, in the EU, **SEA is not required for policies**, although the other scales of assessment (i.e. plan, programme) are required by the "SEA Directive" (EU, 2001) and projects by the "EIA Directive" (EU 2011, 2014). Policies generally precede and set a context for lower-level plans. This distinction was confirmed, for instance, by part of the judgement of Friends of the Irish Environment v. The Government of Ireland [(2020) IEHC 225],[3] which concluded that the high-level National Development Plan (NDP) did not require SEA because it was not a plan or programme:

> The court is satisfied that the [NDP] does not require SEA pursuant to the SEA Directive. This is due to the fact that it is not a plan or programme within the definition of same given in the Directive. In particular, it does not define the criteria and detailed rules for the development of land or for consents in relation to particular projects.

3 https://courts.ie/view/judgments/baca3977-ff91-4f6d-8f3b-5381f0962a3f/d91515e1-8b3a-4832-a5e6-854c380bfbda/2020_IEHC_225.pdf/pdf (accessed April 2021).

Therefore, SEA is required for plans whose parent plans have not been assessed, with all the possible inconsistencies and conflicts this raises (Therivel, 2010). João and McLauchlan (2014, p. 95) cite a local authority planner:

> Why bother [with SEA] at local level when national government and European policies are not subject to SEA?

There may be a substantial **time lag between tiers**, which can affect the usefulness of the higher-tier SEA. Even where a planning (and environmental assessment) hierarchy operates as it theoretically should, the time lag may make the higher-tier plan and/or its SEA ER outdated for the purposes of the lower-tier plan or project and its SEA/EIA (Coutinho *et al*., 2019; Hildén *et al*., 2004).

Moreover, there is no agreement on what environmental issues are strategic versus local, nor on the level of detail needed at each scale of environmental assessment. Logically, issues such as climate change, biodiversity and regional variations in (human) health outcomes are strategic, while issues such as noise, visual impacts and impact on heritage assets are local. A comparison of how different scales of SEAs covered different ecosystem services found that regional-scale SEAs were more likely to consider provisioning services such as food, water and wood, while lower-scale inter-municipal plans were more likely to consider cultural services such as education, recreation and sense of place (Rozas-Vásquez *et al*., 2018). However, developers and the public will always want SEAs to look at their specific area, regardless of the plan's position in the hierarchy and the types of impacts in the area, in part because of concern about significant local-scale impacts.

The **plan alternative that provides the greatest "national good" could have very significant local-scale impacts**. Environmental impacts that appear to be manageable at the higher tier of assessment/planning may be found to be significant and unmanageable at the lower tier of assessment/planning (AASHTO, 2009; Wu and Ma, 2019). This could lead to the seemingly inconsistent outcomes of lower-tier plans, and environmental assessments being inconsistent with those at the higher tier. It may also lead to the need to reinitiate formal consultation on strategic alternatives (AASHTO, 2009), in turn losing many of the advantages of strategic-level assessment and weakening tiering.

Nooteboom (2000) suggests that strategic-level assessments can consider small-scale impacts, but this brings with it the problem of over-detailed and encyclopaedic assessments where key impacts are lost in the detail. There is a continual **conflict between higher-tier plans and assessments being comprehensive and detailed, versus focusing on key issues**. "If scales are defined too broadly, analyses become unwieldy and if they are defined too narrowly, significant issues may be missed" (Ryan *et al*., 2019, p. 62). If a more detailed SEA is needed than originally planned for, this could undermine one of the key benefits of the tiered process, namely considering impacts on a broad strategic scale (AASHTO, 2009).

Appropriate Assessment (AA) under the Habitats Directive (EU, 1992) may be a way forward. The Habitats Directive uses a very precautionary approach: if it cannot be shown that a plan or project will not have adverse effects on the "integrity" of internationally significant sites for nature conservation, then the plan can proceed only under very exceptional conditions. AA requirements mean that proponents of plans and projects must find an alternative way to ensure that adverse impacts on site "integrity" are avoided. This can result in the consideration of novel forms of impact avoidance and mitigation. Similarly, the SEA could ask whether there is any way that the lower-tier plan or project can proceed without significant environmental impacts, leaving the details of how it does this (assuming that the initial answer is "yes") to the lower-tier plan or project.

2 Review Methodology

2.1 International and National Consultation

Semi-structured interviews were undertaken with selected international and national experts: both private sector SEA and EIA consultants and public sector forward planning and planning control representatives (Box 2.1). To obtain a comprehensive representation of the tiering process internationally, interviewees were selected from a broad selection of countries (Box 2.2). Some of the national interviewees are also on the project steering committee, but interviewing them was important, given their experience and expertise in SEA and/or EIA.

A set of questions was used to guide the semi-structured interviews (Box 2.3). These questions aimed to identify links between SEA and EIA, good practice, and suggestions for fostering and strengthening these links. Opinions on how things should have been done in retrospect were also sought, to earmark areas for improvement and gain insights on possible solutions.

Box 2.1. National interviewees, their expertise and affiliation

Public sector
Senior Planner, Fingal County Council
Environmental Planning Manager, Department of Housing, Planning and Local Government
Senior Executive Planner, Office of the Planning Regulator
SEA Officer, Clare County Council
Heritage Officer, Waterford County and City Council
Senior Planner, South Dublin County Council
Environmental and Ecological Assessment Specialist, Irish Water
Senior Ecologist (Inspectorate), An Bord Pleanála
Private sector
SEA consultant, RPS Group Ltd
Planner, RPS Group Ltd
SEA consultant, CAAS Ltd
EIA consultant, AECOM
SEA consultant, Scott Wilson Group Plc.
EIA consultant, EIS Ltd

Box 2.2. International interviewees, their expertise and affiliation

Professor, University of Saskatchewan, Canada
PhD on tiering, DGE Group, Estonia
Professor, University of Groningen, Netherlands
Environmental Specialist, World Bank
Director, Environmental Review Division, Department of Housing and Urban Development, USA
Project Manager, Environmental Assessment Department, Bosch & Partner GmbH Environment Consulting, Germany
Principal Policy Manager, Northern Ireland Environment Agency
PhD on tiering, Environmental Affairs and Development Planning, South Africa
Vice President, WSP, USA
Senior Fellow, Environmental planning, ICF, USA
Technical Director, AECOM, UK
Professor, University of Liverpool, UK
Principal, Environmental Social Governance (ESG) Consulting, USA
Senior Policy Manager, Environmental assessment, Scottish Government

Box 2.3. Interview questions

- In theory, **how do you think that tiering could work**, in terms of (a) SEA informing EIA and (b) EIA informing SEA?

The next questions relate to SEA and EIA practice rather than theory. Of the SEAs/EIAs with which you are familiar…

- Do you believe that planners know what kind of projects are likely to emerge from the plan/programme that is being assessed through SEA? Are you familiar with any plans written specifically to enable the construction of specific projects? (Can you give some examples?)
- Do project developers and their EIA consultants **refer to SEAs** when undertaking an EIA?
  - Is **baseline data** used in SEAs at a scale that could also be used for EIAs? Should it be? (Can you give some examples?)
  - How project-specific are the **alternatives** that are considered in SEA? Do EIAs check that the proposed project is compliant with the SEA preferred alternatives? (Can you give some examples?) Does SEA reduce the need to consider alternatives at the project level?
  - Are SEA **mitigation measures** formulated with lower-tier plans and projects and their related environmental assessments in mind? Do planners/EIA consultants check that the proposed project is compliant with SEA mitigation measures? (Can you give some examples?)
  - Do SEA-related **monitoring** measures relate to the strategic level of the plan/programme, or is data collection needed at project level? (Can you give some examples?) Do EIARs [Environmental Impact Assessment Reports] tend to include monitoring requirements arising from SEA? (Can you give some examples?)
  - If EIA consultants do not refer to the SEA and integrate the SEA findings, **why not**?
- How can/should planners ensure that large (EIA) projects are built as expected?

In conclusion:

- How do you think that tiering between SEA and EIA could be **improved**?
- Is there **anything else** about SEA–EIA tiering (or lack of tiering) that we should know about?

2.2 Systematic Review of Irish Case Studies

Seven case studies of Irish SEAs and linked EIAs were reviewed to identify the current status of environmental assessment tiering in Ireland. In total, 9 SEAs and 12 EIAs were reviewed. Table 2.1 shows the case studies that were identified in consultation with the project steering committee. The case studies covered a range of sectors (i.e. waste, transport, land use, recreation and energy), planning hierarchies (i.e. national, regional, county and project level) and planning timeframes. A concerted effort was made to identify good practice case studies that show evidence of SEA–EIA links.

For each case study, the relevant SEA ER, non-technical summary (NTS), post-plan-adoption SEA statement and EIAR or environmental impact statement (EIS) were reviewed, as well as the related plans and project planning applications where relevant. The review was structured around good practice SEA–EIA tiering criteria identified as part of the literature review (Box 2.4).

Table 2.1. Case studies reviewed

SEA/EIA	Sector	Level in hierarchy	Case study
SEA	Waste	Regional	Eastern and Midlands Region Waste Management Plan 2015–2021
EIA	WEEE, metal recovery		KMK Metal Recycling Ltd in Kilbeggan 2017
SEA	Land use	City	Waterford City Development Plan 2013–2019
SEA	Land use		North Quays Strategic Development Zone 2018
EIA	Housing		Knockboy Residential Strategic Housing Development 2019
EIA	Housing		Kilbarry Residential Scheme 2018
EIA	Housing		North Quays Development 2019
SEA	Energy	County	Clare Wind Energy Strategy 2017–2023
EIA	Wind		Knockalough Wind Farm 2012
EIA	Wind		Cahermurphy-Kilmihil Wind Farm 2014
EIA	Wind		Glenmore Wind Farm 2014
SEA	Recreation	Regional	Ulster Canal Restoration Plan 2016–2022
EIA	Recreation		Ulster Canal Restoration Upper Lough Erne to Clones 2011
SEA	Land and marine use	Regional	Shannon Strategic Integrated Framework Plan 2013–2020
SEA	Port		Shannon Foynes Port Development Masterplan 2013–2020
EIA	Port		Shannon Foynes Port Development Expansion – Strategic Infrastructure Development 2018
SEA	Land use	County	Kerry County Development Plan 2015–2021
EIA	Transport		N69 Listowel Bypass Proposed Road Development 2017
EIA	Transport		N70 Sneem to Blackwater Bridge Road Project 2019
SEA	Land use	Local	Cherrywood Strategic Development Zone Masterplan 2010–2016
EIA	Mixed use		Mixed-use Town Centre Development EIAR 2017

WEEE, waste electrical and electronic equipment.

Box 2.4. Criteria used to review SEA–EIA links and tiering in Ireland

The plan

- Is the plan required to conform with any higher-tier strategic actions? Does it? If not, and this is required, what justification is provided?
- What, if any, (types of) projects are specifically included or excluded by the plan?
- Is there any indication that the plan is driven by the need to deliver, or that it assumes the delivery of, a specific large project?

The (higher-tier) SEA

- Does the higher-tier SEA refer to constraints imposed by (still) higher-tier strategic actions (e.g. national-scale policies)? Have those strategic actions been subject to SEA?
- Does the higher-tier SEA refer to any lower-tier assessments (e.g. "bottom-up" tiering)?
- Does the higher-tier SEA focus on strategic-scale issues, i.e. scope out issues that are relevant only at lower tiers?
- Does the higher-tier SEA take responsibility for all relevant issues caused by the strategic action, rather than leaving higher-tier issues to be solved by the lower-tier strategic action or project?
- Does the higher-tier SEA clearly state conditions under which plans/projects can proceed? (Do these relate to cumulative impacts?)
- Does the higher-tier plan include the SEA's conditions under which plan/projects can proceed?
- Does the higher-tier SEA provide data that are proportionate to the scale of the relevant strategic action (not too unwieldy or superficial)?
- Does the higher-tier SEA refer to data relating to issues/information gathered at EIA level?
- For cyclical strategic actions, does the higher-tier SEA refer to monitoring data from previous strategic actions?
- Does the higher-tier SEA explain how the alternatives that it considers are relevant to lower-tier plans and/or their SEA/EIAs?
- Does the higher-tier SEA indicate the potential "route" of how impacts would occur, e.g. does it link impacts to specific development sites (if appropriate)?
- Does the higher-tier SEA discuss cumulative impacts? Does it recommend mitigation measures for how lower-tier assessments should deal with cumulative impacts?
- Are there any specific projects (or development sites) in the plan with the potential for significant effects (and politically driven)?
- Does the higher-tier SEA clearly state conditions under which future lower-tier SEA/EIAs are not needed? Or under which plans/projects can proceed?
- Does the SEA monitoring refer to individual projects and/or their EIAs?

The Lower-tier Strategic Action (Plan, Programme or) Project

- Is the plan/project being assessed consistent with the higher-tier strategic action? (Or, for instance, is it for development in an area that the higher-tier plan does not propose for development?)

The Lower-tier SEA or EIA

- Is EIA scoping influenced by SEA scoping? Is there evidence of tiering of environmental issues?
- Does the lower-tier EIA/SEA refer to the higher-tier SEA (and its monitoring):
  - in its presentation of data?
  - in the alternatives it considers?
  - in the potential for cumulative impacts?
  - in the mitigation measures it puts forward?

Box 2.4. Continued

- Does the lower-tier EIA/SEA repeat the higher-tier SEA data or directly refer to the higher-tier SEA for those data?
- Does the lower-tier EIA/SEA update the data from the higher-tier SEA (instead of starting from scratch)?
- Does the lower-tier EIA/SEA focus on local-scale issues, i.e. scope out issues that are outside the remit of the strategic action or project and that have been covered by the higher-tier SEA?
- Does the lower-tier EIA/SEA provide data that are proportionate to the scale of the relevant strategic action or project (not too unwieldy or superficial)?
- Do the alternatives considered in the lower-tier EIA/SEA clearly "tier down" from the alternatives considered in the higher-tier SEA?
- Is there any indication of alternatives having been scoped out at the higher-tier SEA stage?
- Are cumulative, synergistic and long-term impacts identified? If so, is there any indication that these impacts relate to those in the higher-tier SEA?
- Does the lower-tier EIA/SEA refer to any conditions or mitigation measures set by the higher-tier SEA?
- Are the mitigation measures put forward by the lower-tier EIA/SEA consistent with those in the higher-tier SEA?
- Does the monitoring section refer to or duplicate the SEA monitoring measures?

General

- Are there any gaps in data etc. that are not covered by the higher-tier and lower-tier EIA/SEAs?
- Are there unnecessary overlaps between the higher-tier and lower-tier environmental assessments?
- Are any problems caused by the higher-tier or lower-tier strategic action/problem still outstanding at the end of the two environmental assessment processes? (Are problems falling through the net?)

3 National Interview Results

This chapter first presents the findings from the national public sector interviews, then the private sector interviews, and then discusses commonalities and divergences between the sectors.

3.1 Public Sector Representatives

3.1.1 Perceived importance and benefits of tiering

The public sector interviewees viewed tiering as necessary, indicating that "carrying out an SEA without considering tiering (i.e. how it translates to projects on the ground) is pointless". The interviewees also noted that policies, plans and programmes do not have any effects on the environment in themselves: they rely on having an influence on projects and activities "on the ground". In this context, the flow of information cascading down from SEA ER to EIAR, and the integration of sustainability and environmental considerations throughout the entire planning process to inform decision-making, were considered essential for implementing the findings of SEA. One interviewee further emphasised that top-down tiering (e.g. from SEA to EIA) has the potential to achieve the objectives of sustainability, by assessing and mitigating all possible effects at the right time to inform future project applications, and direct applicants to make applications appropriate to the receiving environment. In this context, it was also noted that:

> If, through SEA, you can show how you have considered certain options/alternatives, leading them through a given pathway, that sets the tone on the agenda of where you want to go in a justified manner. Elected members are interested in the narrative and SEA provides that, as well as facilitating that everything is captured so the planning process is open and transparent.

Others pointed out that SEA "thinking" and planning for projects that may be implemented on the ground at an early stage (e.g. wind farms) can help anticipate (cumulative) issues and inform EIA, "so that the sensitive areas are avoided or at least to inform the future projects of the sensitive issues, which may be mitigatable".

Interviewees also perceived that the cascading of information from one plan to a lower-tier plan or project (in terms of baseline information, mitigation and monitoring) can lead to more robust EIAs, with the potential to gain planning permission without any major challenges, while saving time and money at project level. SEA ERs can provide environmental data that can be re-used in EIAs. SEA can, and should, inform EIA by reducing the need to consider certain alternatives, flagging up certain environmental issues or local sensitivities (e.g. water supply pressures, receiving water body sensitivities), and removing the need to reassess some impact types.

3.1.2 Observations on current tiering practice

All interviewees agreed that top-down tiering (SEA to EIA) is carried out in Ireland, particularly for land-use planning, as there is already a tiering system established in spatial planning. In other sectors (e.g. forestry) the plan-making hierarchy is less clear so tiering can be more difficult. This also applies to planning in rural areas, where it is more difficult to anticipate the kind of projects that may derive from a development plan, and to developer-led projects not directly proposed in a plan, such as large-scale poultry farms or quarrying.

The interviewees indicated that SEA ERs can, in theory, provide baseline data and a master list of environmental objectives, development standards or other parameters that future EIAs must consider. However, they also noted that it is rare to find specific linkages in practice, with only a few EIARs [e.g. projects linked to the Cherrywood Masterplan or Shannon Integrated Framework Plan (SIFP)] referring back to an SEA. Interviewees also observed that:

- the SEA ER is still seen as a side document and not relevant to the project level;
- there is no advantage of looking at the SEA ER; the gap (between SEA ER and EIA) is so big;

- SEA is at the strategic level and cannot anticipate the nature and scale of impacts at the project level.

The difference in scale between SEA and EIA may sometimes prevent tiering from happening. For the baseline data in particular, an interviewee noted that each procedure should adhere to its purpose: "There is no need to have detailed data in SEA, as this has huge cost and time implications for consultants and involved parties … and EIA will need to use site-specific data to appropriately address local issues and impacts." That said, projects generally look up the plan to check for alignment and/or compliance, which is then recorded in the EIAR, and, if the SEA process and associated ER have been effective in informing the plan, looking at the plan should be enough.

The feedback loop from EIA back up to SEA (i.e. bottom-up tiering) is even less apparent in practice. This may be, in part, due to the absence of a national framework to capture information contained in EIAs.

3.1.3 Current barriers to tiering

All interviewees pointed to practical barriers hindering SEA–EIA tiering. The first related to the distinct purposes of SEA and EIA: "The SEA process helps identify and avoid sensitivities as part of the plan making process while the EIA should avoid and mitigate at the project or detailed design stage." SEA should inform the plan by steering development to the right location, and by "providing a blueprint", so that EIAs do not, perhaps, need to consider alternative sites. In this context, the consideration of reasonable alternatives in EIA should be about "elaborating the preferred option" by getting the right layout and design, considering the detailed characteristics of the site to mitigate environmental impacts. One interviewee took a broader approach by observing that SEA alternatives should be the starting point for EIA alternatives, but that "at the project stage, the EIA needs to consider all feasible alternatives, which may not have been considered at the plan stage".

Silo working practices are another barrier to tiering. In practice, many local authorities treat forward planning (including SEA) and the assessment of planning applications (including EIA) as two distinct functions, with different teams. This in itself is a hindrance to promoting greater links and tiering between the processes. In addition, plans are prepared by public bodies and most projects by developers, further separating the vision, purpose and interests behind these processes and their assessments. Other interviewees noted that SEAs typically pre-date the EIA by several years, therefore presenting high-level data that are often obsolete by the time a project EIA is carried out.

Resource implications also affect SEA–EIA tiering. One interviewee noted that "determining as part of the SEA that certain assessments (e.g. EIA and AA) and certain detailed considerations will be needed for development type X in location Y (as done for the Clare County Development Plan) is a lot of work, and this is probably why [the screening and scoping out] is not undertaken". Similarly, where an SEA ER provides recommendations for mitigation or monitoring provisions, these may not be followed up because of a lack of resources.[4] In addition, collecting EIA information on sensitive issues that may have arisen at the project stage (e.g. extracting relevant information from the EIARs) to inform future SEAs would be a resource-intensive task.

These barriers are compounded by the fact that neither the SEA or EIA directives nor the Irish regulations set a legal requirement for SEA–EIA tiering or for the transfer of "lessons learned". There is no requirement for EIA to check the overarching SEA, and no requirement for SEAs to be presented in a manner that relates to the EIA level. According to one interviewee, "People see anything coming out of an EIAR or AA or flood risk assessment as stopping development, anything coming out of SEA they don't have to abide by it". Another interviewee noted that some local authorities do not want specialised environmental staff as "they are afraid they will find things they do not want to find" or "they want to tick the box and get things done". One interviewee suggested that such standpoints are often generational, with younger planners being more willing to embrace these processes. Several interviewees commented on the importance of leadership, observing that it takes a champion to drive good SEA, EIA and associated tiering practice.

4 This attests to the importance of monitoring at both the SEA and EIA levels.

3.1.4 Good tiering practice

Interviewees observed that there are greater opportunities for tiering among plans of scale that are closer to each other (e.g. from national to regional plans as opposed to from national to local plans), and among lower-tier plans and projects (e.g. from a master plan to a project within that plan). For example, one interviewee noted that, "the higher the plan, the less the links to the ground". Box 3.1 identifies good practice case studies described by the interviewees.

3.1.5 Opportunities to enhance SEA–EIA links

The public sector interviewees put forward the following recommendations to strengthen SEA–EIA links and enhance tiering practice. They have been grouped according to overarching themes.

- **Amending legislation and/or guidance and providing training.** Several interviewees noted that, for SEA and EIA to "talk to each other", it must be made a legal requirement, and the resources to implement such a requirement must be available. This could entail, for example, requiring by law that SEAs develop project-level mitigation measures where the plan is likely to be implemented as projects, and that project EIARs document how SEA findings (and particularly mitigation measures) have been considered in the EIA (which can also be fostered through guidelines). This recommendation for a legal framework supports the recommendations below, as the current lack of mandatory requirements to link SEA and EIA would affect the implementation of any of those recommendations. One interviewee stated that:

> current practice can only be improved through regulations or legislation; it won't happen organically. Currently, planners will stick to what is required under the legal remit. So it should be a Department initiative to strengthen the links [between SEA and EIA] – which is valuable as it improves practice.

  Another interviewee recommended that "EIA guidance should recommend cross-reference to SEA ER objectives in the EIAR and how the development application complies with them". The need for training on tiering was also highlighted, noting that "awareness and understanding of the value of tiering and what can it do for you (saves time, money, challenges, directs development to areas that are most appropriate, etc.) will improve both assessment processes."
- **Providing more specific SEA recommendations that target EIA.** Several interviewees recommended that SEA outputs should be translated into specific recommendations in relation to EIA scoping and mitigation that set minimum requirements but are not prescriptive (e.g. for housing developments in areas X, Y and Z, any EIAR accompanying a planning application must consider 1, 2 and 3 sensitivities and demonstrate how the development will interact with these). By establishing environmental requirements for the project stage, the SEA ER would point in the right direction and give confidence that SEA is protecting the environment. One interviewee more specifically recommended that the plan should include a list of mitigation and monitoring measures that are spatially defined (in a GIS) so planners can click on a site to find out the required measures and refer to them at the project level.
- **Using monitoring to link both processes.** Monitoring was supported by a number of interviewees as the stage that could best link both procedures: "SEA monitoring measures can work best if capable of tiering – so that a strategic indicator can be brought down to the project level. Equally it can cumulate back up to work with and inform the strategic indicator." It was observed, for example, that:

> monitoring programmes around flood risk and water quality across SEA and EIA seem to show good joined-up thinking because of the Water Framework Directive (WFD)/River Basin Management. There is so much data and information that it is hard not to join the dots at various planning tiers.

  This is also the case for climate change: "monitoring will become more mandatory under ongoing changes in climate. So developing climate change indicators that can be measured at various tiers could give SEA better footing." At the moment, although EIAs use data from existing monitoring programmes (e.g. WFD water

Box 3.1. Good practice case studies identified by the public sector interviewees

Cherrywood Strategic Development Zone (SDZ) 2014

The SEA and EIA teams worked very closely together in the planning and implementation of the Cherrywood SDZ. One of the factors that facilitated this was the multi-project nature of the SEA – the SDZ was a mega-project that was influenced by developers lobbying during the plan-making process. This meant that it was easier to make "on the ground" links between the SEA and the EIA. Every project planning application submitted was checked by the SEA and AA teams for compliance, ensuring that the application was aligned with the SEA objectives/strategic environmental objectives and AA objectives. As developers were keen for their projects to be approved, further information requests were rapidly addressed. This voluntary arrangement supported the tight linkages between SEA and EIA processes.

Clare County Development Plan 2017–2023

Each land-use zone in the Clare County Development Plan included development application requirements, for example "to develop in land X, the developer must demonstrate no loss of hedgerows, etc.". Such specifications were established to ensure linkages between the plan and projects resulting from it. Environmental issues were anticipated at a strategic level and further examined at project level, filling data gaps and addressing potential local issues in an effective manner. The local authority now checks that an application is compliant with the SEA mitigation measures, whether those are specific to the zoning or more general.

National Planning Framework 2019–2040

The National Planning Framework sets out projects that can help change the course of growth from business as usual to a more sustainable model (e.g. the Greater Dublin Area cycle network, enhanced connectivity to the north-west (by upgrading access and using existing routes N2/N14), national broadband plan, a new long-term water supply for the Eastern and Midland Region, Greater Dublin Sustainable Drainage System, etc.). Each of these projects has been subject to its own environmental scrutiny through a separate SEA and/or EIA. This approach ensures that the projects are considered at both strategic and implementation levels, and that information is shared throughout the planning tiers.

Tramore Local Area Plan 2014–2020

A planning application was submitted for 90 houses in a woodland area, which entailed removal of trees. The planner looked at the SEA ER of the local area plan and found that the local sites of biodiversity interest included that woodland; there was a local area plan policy to maintain and enhance biodiversity; and a detailed tree survey was recommended as part of the local area plan SEA monitoring. The planner's report referred to the SEA ER, and the mitigation from the SEA influenced project-level mitigation.

National Water Resource Plan (out for public consultation at the time of writing)

The National Water Resource Plan looks at 535 water resource zones, examining supply–demand balance and identifying future shortages. The plan is subject to SEA and AA. The plan is looking to create a tiered methodology whereby, if a shortage is identified, a "here are the options" menu is presented, helping to break the process into stages. In 2021, four regional implementation plans will be prepared to "translate" the plan to the regional level and make the assessment and the reports manageable. Regional plans will be subject to SEA and AA and will identify the projects needed to address any identified shortages, while ensuring that water abstraction projects have no adverse environmental impacts. The National Water Resource Plan has been prepared on the basis of the best available knowledge, as will be the regional plans. However, only when looking at the project level is it possible to tell, for instance, that a project

Box 3.1. Continued

can take only 8% of the planned water extraction, and not the planned 10%, because the impacts of a higher level of abstraction will be much more damaging to rivers than anticipated. So anticipating issues at the national or regional level and verifying these at project level ensures the most sustainable actions on the ground.

Shannon Integrated Framework Plan (SIFP)

All potential development applications in the Shannon estuary (e.g. proposal for EirGrid cross-Shannon cable, testing of renewable energy devices and developments at Shannon Foynes Port) have been informed by the SEA. When development queries or a planning application are received, the local authority frequently refers to the SEA ER and, in particular, its mitigation measures for compliance and/or for conditions that should be included as part of the granting of the planning application (e.g. impacts of dredging, acoustic impact on dolphins). In addition, a commitment was given to continue to build the baseline information as part of SEA monitoring (e.g. bird surveys)[5] through the Implementation Steering Group and Environment Working Group. This provides valuable monitoring and baseline information for any future potential developments – a bank of information that would otherwise delay a project at EIA level.

quality monitoring), which are normally included in SEA monitoring programmes, EIAs will always collect original data at the project level. Ideally, this could feed back into existing monitoring programmes and then to other EIAs and SEAs. This information would have to be collected in the right format (e.g. GIS), centralised and made publicly available for it to be meaningfully shared and used.

- **Access to EIA databases.** The introduction of the EIA Portal in 2018 was felt to be useful in terms of sharing data from EIARs for application in other EIAs or SEAs. However, it was observed that standard EIARs are big documents, and considerable effort is required to go through them to find anything that may be relevant to future EIAs or SEAs:

> EIAs contain a wealth of information in terms of dedicated surveys, analysis of baseline and historical monitoring information, GIS data, long term monitoring across multiple seasons. However, much of this is not captured or collated in any coherent manner which can be made available for use in SEAs.

The EIA Portal[6] could be expanded to incorporate data extracts from EIAs, for instance on sensitive issues and how they were mitigated. This is already done in Clare County Council with regard to mitigation measures and could be expanded to include monitoring.

- **Setting up a compliance check system.** Including an objective in the plan that requires planning/licensing applications to be compliant with strategic environmental protection objectives or SEA recommendations would help to ensure tiering takes place. This has been done for the Cherrywood Masterplan.
- **Consistency in SEA ER and EIAR preparation.** Some public sector interviewees observed that it is easier to establish and maintain links when the SEA and EIA are undertaken by the same consultant (which rarely happens at the moment). This not only ensures a consistent approach but facilitates information-sharing. Having linked SEA/EIA experience within the same local authority would also help to ensure consistency.

5 These were completed and there is now an uninterrupted suite of bird usage data for the estuary. This was guided by an Implementation Group chaired by Clare County Council.

6 https://www.gov.ie/en/publication/9f9e7-eia-portal/ (accessed 22 June 2021).

3.2 Private Sector Representatives

3.2.1 Perceived importance and benefits of tiering

Private sector representatives did not elaborate as much as their public sector counterparts on the importance and/or benefits of tiering. Indeed, several of them took a while to understand the concept of tiering in the context of SEA and EIA. Nevertheless, a few highlighted its relevance by noting that it fills the gap that existed before SEA, when the consideration of higher-level alternatives and cumulative impacts was beyond the scope of EIA. They also observed that "tiering can streamline the processes, with the right alternatives being considered at the right level." An SEA practitioner noted that, where a local-level SEA exists (e.g. for a local area plan or masterplan),

> it is a total waste of the project EIA not to look up to the SEA… [and the SEA should have] very clear mitigation measures to tell the project EIA what it needs to look at.

There was general consensus that tiering is not really possible unless SEA findings/mitigation are captured in the plan, as it is typically the plan that the project (and associated EIA) refers to.

3.2.2 Observations on current tiering practice

Practitioners generally felt that some tiering already occurs organically as part of both the structure of the planning system and SEA arrangements (e.g. consideration of alternatives). Several interviewees gave specific examples:

- In sectoral plans (e.g. waste or water), planners might know the broad types of projects that would derive from the plan (e.g. energy from waste, composting facility).
- In land-use plans (e.g. regional spatial and economic strategies, county development plans or local area plans) there may be references to specific road and rail projects, or land-use zonings may be defined and come with particular density requirements.

However, planners would generally not know what a developer will propose with regard to layout, design, etc. Interviewees agreed that the links between SEA and EIA are clearer and simpler at the local level, where a local area plan or masterplan SEA ER specifies the developments that will occur and sets conditions for projects and associated EIAs; clear links between national- and regional/local-scale plans seem to be less common. The links between plan and project, and between SEA and EIA, are also commonly less clear in rural areas, in part because of the predominant lack of zoning in rural areas.

In the local context, the SEA can guide developments and identify the type of issues – and the detailed information that needs to be considered for these issues. Subsequently, at the lower tier, plan-makers and/or developers would normally have to clarify that the lower-tier plan or project is compliant with planning and environmental requirements, as there simply would not be enough information to do a detailed assessment at the higher-tier plan stage. The EIA would have to consider and assess the specifics of the project (e.g. layout, technology), identify more local environmental issues, and/or undertake more detailed assessments. One interviewee also noted that "tiering, in practice, is more extensive than sometimes suggested and extends beyond formal EIA to the assessment of sub-threshold projects."

Several interviewees observed that SEA and EIA silo working restricts the effectiveness of tiering links. One SEA practitioner observed that "there is quite a separation between SEA and EIA practitioners, as they entail different lines of work [with different objectives and purposes]". Another suggested that EIA consultants do not understand all aspects of SEA and the planning system, and SEA consultants do not have the skills for the level of scrutiny required at EIA level, so "it is hard to have that cross-fertilisation". This aligns with another observation that:

> SEA–EIA links are easier to establish where the plan-maker is also the developer of a project later (e.g. National Transport Authority on transport planning and road developments); and less effective where a government department does an energy plan and then [a] private developer proposes the project.

The international interviewees (Chapter 4) make a similar point.

All interviewed practitioners noted that EIAs generally check whether or not the project complies with the relevant plan, but rarely check the associated SEA ER. Like the public sector interviewees, the private sector interviewees considered that the SEA's role is to inform and influence the plan, and relevant SEA material should be integrated into the plan. Assuming that this is done effectively (i.e. the SEA has made the plan more sustainable, and the plan incorporates all of the SEA recommendations and mitigation), checking the plan should be sufficient, and there should be no need to trawl through the SEA ER. In fact, an EIA consultant noted that "There is no need for a direct EIA–SEA link because the plan acts as that link".

Although SEA data may provide some direction, the private sector interviewees considered that the SEA baseline is not sufficient for the project level, where up-to-date and site-specific on-the-ground surveys would be needed. In reality, most EIA work will go to the direct source of the information, which may also have been updated in the meantime – "why rely on info quoted in SEA when you can go to the water quality report published by EPA? It is less of a risk." Similarly, the SEA may rule out some alternatives and provide a degree of specification to project alternatives, including details on location, scale and/or design, particularly at the lower planning tiers. However, SEA ERs "will always be constrained by a lack of project-specific detail, and any hint of a project alternative would have to be revisited in the context of specific details on the nature and location of the project proposed and the most up-to-date information".

This also applies to mitigation, with SEA mitigation being perceived as too strategic to inform an EIA. One SEA consultant observed that:

> Strategic plans often don't include specific projects or project level information, so the SEA mitigation tends to be of a more strategic nature in keeping with the level of the plan. If no projects are conceived of in the plan, the SEA mitigation will not inform the EIA in any direct sense. What high level SEA can do is signpost where more assessment may be needed, particularly at lower tier plan levels.

This contrasts with another SEA practitioner's observation that SEA mitigation measures "are formulated with all possible lower-tier plans and projects in mind … and refer to environmental issues that will be relevant at project level" which are then "integrated into the plan as binding policies and objectives that decision makers must ensure are complied with by individual projects". One EIA consultant noted that "the feasibility of (plan level) mitigation measures is always a big concern at EIA level".

With regard to SEA monitoring, one private sector interviewee noted that:

> there is possibly a bit of hesitation in pushing monitoring to project level [but] there is a potential opportunity to better align and pick up on data gaps, for example, but I have not seen much to date.

This may be because "monitoring programmes are included in the SEA ER and then almost forgotten about … Monitoring is the exception rather than the norm". In this regard, an SEA consultant noted that "quite often [SEA recommends] setting up a monitoring system that seeks to collect information when individual projects are being granted consent about their likely effects … that feed back into SEA monitoring". An EIA consultant noted that "EIARs will include SEA-related monitoring requirements only if the SEA requirements are stitched into the policy requirements of the relevant plan".

3.2.3 Current barriers to tiering

Several public sector interviewees highlighted the lack of legal requirement for tiering as a barrier to tiering, but only one private sector interviewee raised this, simply observing that "there's no requirement to refer to the SEA ER and integrate findings". The interviewees did not identify major obstacles to tiering. In fact, only one of the SEA practitioners was vocal about this, and highlighted the following issues:

- Current shortcomings of SEA practice can affect tiering. Where the adopted plan has not taken on board key SEA information (e.g. mitigation measures do not make it into the plan), developers/consultants will be oblivious to this as commonly it is the plan that is is checked, rather than the associated SEA: "If the plan-maker did not bother listening to the SEA why should an EIA developer?"

- Lack of ready access to SEA ERs. Some ERs are not kept online, with only the SEA statement being available. This lack of access makes it difficult to go back and check what was said in the SEA ER.
- The time lapse between SEA and EIA processes is often significant, and assumptions may have changed in the meantime with regard to the state of the environment or viability of alternatives. The onus is always on the EIA team and consenting authority to take on board the most recent reports, associated recommendations and most up-to-date environmental data (including project-specific surveys), so the SEA ER may be ignored in favour of directly checking the data source.
- In terms of data from EIA feeding into SEA, any statutory assessment process requires due diligence, so:

> If somebody hands me raw data, I need to make sure that data are fit for purpose… If a project is challenged on the basis of the raw data, and if you have no way to state that the data were verified and current, you are in trouble… you need to be able to stand on it at an oral hearing.

3.2.4 Good tiering practice

Although the private sector interviewees broadly agreed with the public sector interviewees that tiering between local-level SEA and project EIA is easier than tiering between national-level SEA and project EIA, they, nonetheless, recommended good practice case studies (Box 3.2) that suggest that national- to project-level tiering also happens effectively.

3.2.5 Opportunities to enhance SEA–EIA links

Although none of the private sector interviewees noted that the lack of tiering guidance affects SEA–EIA links, several interviewees recommended that legislation/guidelines[7] need to be strengthened, and highlighted the need to provide additional training. For example, one SEA practitioner noted that:

> there needs to be legal or guidance material pointing to (and possibly forcing) tiering. The EPA or DHPLG [Department of Housing, Planning and Local Government] guidance on EIAR, for example, could point to the need for the project to look back to see what alternatives were considered at plan stage, and to identify the mitigation in the SEA and how it is addressed through the EIA process.

Another SEA consultant noted that there is a need to educate planners (both those who prepare plans and those who review projects) and SEA and EIA practitioners to ensure they all understand the various assessment levels and their requirements, and to build the concept of tiering into SEA/EIA training and guidance. This requirement could be extended to the other regulators involved in reviewing EIAs.

The key recommendation, which several interviewees referred to, was to strengthen SEA practice. One SEA practitioner observed that:

> SEA should become more central in the planning cycle and more influential in plan making. Tiering will fall into place if planners understand SEA better and embrace it more.

One way of strengthening practice is through the inclusion of more specific and clearer mitigation measures in SEAs that are subsequently incorporated into the plan, to inform data collection or further assessment of issues at lower tiers. Another interviewee noted that, for plan–project and associated SEA–EIA links to be more meaningful, "the policies and objectives of the plan are often aimed at plan-level considerations, but need to more clearly apply to projects". There needs to be "transparency on what is expected at project level*"* through the SEA picking up on key issues and survey needs (on key birds, traffic, water quality, visual/landscape impacts, etc.) and then requiring all projects to incorporate mitigation for these issues.

7 The EPA's EIA guidelines and advice notes are at an advanced stage of preparation.

Box 3.2. Good practice case studies identified by the private sector interviewees

Cherrywood Strategic Development Zone (SDZ) 2014

Although considerable effort was put into ensuring that the project layout and phasing was strategically designed, the SEA ER for the Cherrywood Planning Scheme was also very project driven; it includes detailed information on development types, infrastructural requirements, building heights, standards, detailed road/underpass profiles for construction, etc. As a result, the SEA ER was detailed and the mitigation measures were specific to each land parcel and project type. Only a few larger projects within the Cherrywood SDZ are subject to EIA. However, the SEA consultants helped the local authority to develop a detailed environmental appraisal system for checking the compliance of all projects, with the SEA mitigation measures included in the planning scheme. Feedback from the application of this system indicated that the mitigation measures in the plan are too many, too difficult to check projects against, and inefficient. This project-level feedback has led to an amendment to the scheme (with associated SEA screening) being currently developed to reduce the number of biodiversity and green infrastructure objectives in the scheme (reduced repetition, more efficient, same protection). So the links between plan and project assessments are very strong in this case.

Fáilte Ireland Wild Atlantic Way Operational Programme

The Wild Atlantic Way Operational Programme and associated visitor experience development plans involve tourism-related measures and infrastructure at the most sensitive locations in the country. As a result of the SEA, "Site Maintenance Guidelines" have been integrated into all of the visitor plans that provide requirements in relation to parking facilities – parking surfaces, boundaries, signage, seating, lighting, etc.

Cork Metropolitan Area Transport Strategy (CMATS)

The SEA ER identifies and maps key environmental sensitivities at a strategic level, including sophisticated environmental sensitivity mapping (Figure 3.1). This has enabled explicit measures to be integrated into

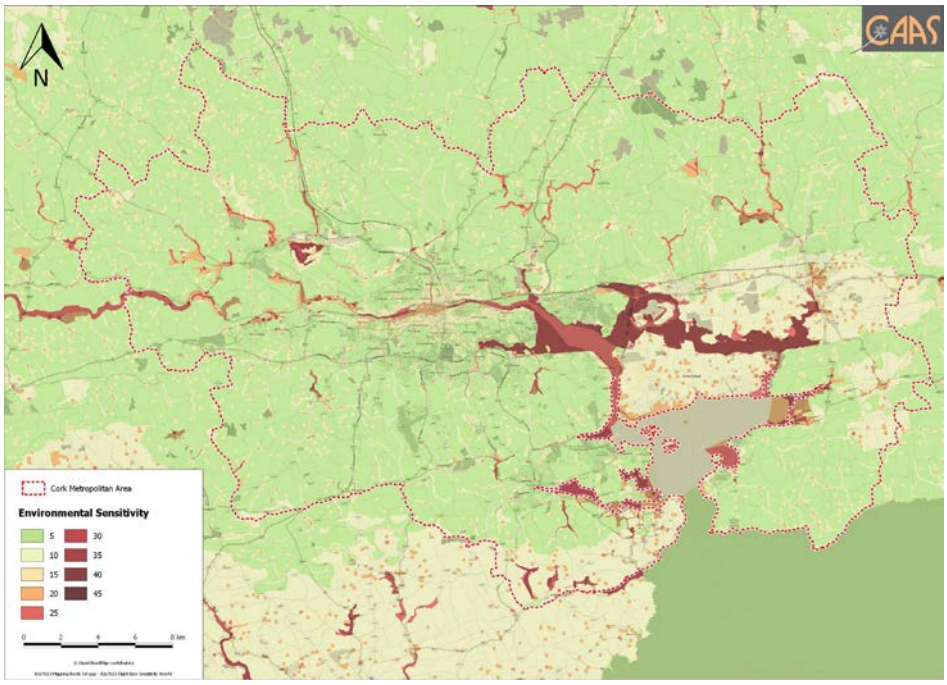

Figure 3.1. Environmental sensitivity mapping of the Cork Metropolitan Area. Prepared by CAAS Ltd.

Box 3.2. Continued

the plan to ensure that subsequent projects address these sensitivities. These are provided at Section 17 of the Strategy, "Environmental Programme and Management", with specific requirements to refer back to the SEA: "Lower levels of decision making and environmental assessment should consider the sensitivities identified in Section 4 of the SEA Environmental Report".

Offshore Renewable Energy Plan

The plan included one set of plan-level mitigation in the form of policy amendments, and another set of project-level mitigation that referred to industry standard practice. There was a lot of uncertainty about impacts on Natura 2000 sites and a general lack of knowledge of impacts of new technology, so measures were put in place, specific to each new technology, to address uncertainty. This enables clear links between the SEA and subsequent EIAs.

3.3 Commonalities and Divergences between Private and Public Sector Perceptions

Interviewees from the public sector, encompassing planners and environmental assessment experts (e.g. SEA officer, heritage officer, environmental planning manager) showed a clearer understanding, as well as better articulation of the importance and benefits, of tiering than those from the private sector. The public sector interviewees felt that it is important to ensure that SEA and EIA links are fostered, to streamline processes and steer developments to the right location. This positive approach may be because typically public servants will be exposed to both plan-making and project applications, whereas the project development and consulting sectors may have more rigid silos.

Several public sector interviewees referred to lack of legislation and/or guidance as an impediment to tiering, but only one private sector practitioner raised this. All interviewees agreed that top-down tiering (SEA to EIA) is well established in Ireland, particularly in some aspects of land-use planning. This may be because land-use planning accounts for a high proportion of SEAs, and is itself clearly tiered. Private sector practitioners were more hesitant on the extent to which SEA can guide EIA, as there is often not sufficient information at the plan level to anticipate project-level issues. Most interviewees felt that the purpose, focus and scale of each assessment influence the extent of the links. However, private sector practitioners were more forthright about silo working approaches impeding SEA–EIA links. They were also more outspoken about SEA data, alternatives, mitigation and/or monitoring often being insufficiently detailed or clear to inform EIA.

Bottom-up tiering (EIA to SEA) was considered by all to be more difficult and less apparent in practice. No interviewee was aware of any EIAs referring back to an SEA, noting that EIAs typically refer to the plan instead. In contrast, indirect top-down tiering seems to be taking place where SEA information is fully incorporated into the plan, and the EIA checks the plan; the interviewees agreed that, in such a case, there is no need for SEA and EIA to "talk" to each other directly.

Several public sector interviewees raised the issue of (lack of) dedicated SEA/EIA resources, noting that more specific SEAs and better information sharing is hindered by time and personnel implications. They also pointed to related issues of leadership, and the need for champions within the planning system to foster stronger SEA and EIA links. In contrast, private sector practitioners pointed to more pragmatic shortcomings of current practice, including the often poor integration of SEA findings into the plan, the absence of SEA ERs online and the time lag between SEA and EIA processes.

4 International Interview Results

The findings from the international interviews have already been published in the international peer-reviewed journal *Environmental Impact Assessment Review* (Therivel and González, 2021). Please refer to that publication for full details.

The international interviews show that SEA–EIA tiering is limited in other countries as well as Ireland. Only the interviewees from the USA were aware of tiering occurring regularly and effectively in practice. Many of the other interviewees expressed frustration at the lack of tiering altogether, the absence of effective tiering in "their" countries or the lack of reference to SEAs by EIA practitioners. The more extensive US practice seems to be due, in part, to a build-up of tiering practice over time, with the US National Environmental Policy Act already being operational for 50 years, and to its legal requirements for tiering being clear and well elaborated (Box 4.1). In many cases, the advantages of tiering in the USA also accrue to the same organisation: one agency will develop both the higher-level plan/SEA and lower-level project/EIA, so directly benefiting from any cost- and time-savings resulting from the SEA's baseline data collection, consideration of alternatives, generic mitigation measures, and the narrowing of the scope of subsequent EIAs.

In terms of alternatives, the international interviewees' consensus seemed to be that most SEA–EIA links are weak at best:

> For most SEAs… alternatives are vague – often non-existent. I honestly can't think of a single example where the EIA checked for compliance with a "preferred alternative"… So, I'd have to say no – SEA has not served its role in reducing the need to consider alternatives.

The exception to this is again the US system of tiering, which focuses on issues that are "ripe for decision" and excludes issues that are not ready to be looked at. This leads to a clear link between plan and project alternatives. Examples are:

- SEAs for national-level funding of housing rehabilitation in deprived areas generally review all of the environmental laws relevant to the area, scope out environmental topics that are unlikely to be affected by the rehabilitation, and set criteria for testing, on a house-by-house basis, whether individual applications for rehabilitation (lower tier) could lead to significant environmental impacts requiring further lower-tier assessment. Typical lower-tier issues of concern include whether the house is in a floodplain, whether it has historical interest and whether it affects a wetland. Only where there might be such impacts, or where the actual rehabilitation proposed is significantly different from the parameters assumed in the SEA, are further data collection and assessment required. This approach obviates the need for most data collection at the project level.
- For large transport infrastructure projects such as high-speed rail, the tier 1 (strategic) assessment might help to determine the broad corridor options, but not be certain about when and where a project might go ahead. The tier 2 detailed assessment will not need to prove the purpose and need for the project, but instead will focus on looking at the detailed route between different cities.

Except for those from the USA, the international interviewees also felt that many SEAs do not clearly set out the mitigation measures that they would expect in projects; SEA mitigation measures are not incorporated well in EIAs, and there are few checks on whether SEA mitigation measures are implemented through EIA. Unlike common practice in Ireland, not all of the mitigation measures suggested in SEAs are integrated into their plans, and plan mitigation measures are not necessarily implemented in subsequent projects. Some EIAs are not clearly

Box 4.1. Main references to tiering in the US "Final Rule Modernizing its NEPA Implementing Regulations"

§1508.1 Definitions

… (ff) Tiering refers to the coverage of general matters in broader environmental impact statements or environmental assessments (such as national program or policy statements) with subsequent narrower statements or environmental analyses (such as regional or basin-wide program statements or ultimately site-specific statements) incorporating by reference the general discussions and concentrating solely on the issues specific to the statement subsequently prepared.

§1500.4 Reducing paperwork

Agencies shall reduce excessive paperwork by: … (k) Using programmatic, policy, or plan environmental impact statements and tiering from statements of broad scope to those of narrower scope, to eliminate repetitive discussions of the same issues.

§ 1501.11 Tiering

- Agencies should tier their environmental impact statements and environmental assessments when it would eliminate repetitive discussions of the same issues, focus on the actual issues ripe for decision, and exclude from consideration issues already decided or not yet ripe at each level of environmental review. Tiering may also be appropriate for different stages of actions.
- When an agency has prepared an environmental impact statement or environmental assessment for a program or policy and then prepares a subsequent statement or assessment on an action included within the entire program or policy (such as a project- or site-specific action), the tiered document needs only to summarize and incorporate by reference the issues discussed in the broader document. The tiered document shall concentrate on the issues specific to the subsequent action. The tiered document shall state where the earlier document is available.
- Tiering is appropriate when the sequence from an environmental impact statement or environmental assessment is:
  – from a programmatic, plan, or policy environmental impact statement or environmental assessment to a program, plan, or policy statement or assessment of lesser or narrower scope or to a site-specific statement or assessment;
  – from an environmental impact statement or environmental assessment on a specific action at an early stage (such as need and site selection) to a supplement (which is preferred) or a subsequent statement or assessment at a later stage (such as environmental mitigation). Tiering in such cases is appropriate when it helps the lead agency to focus on the issues that are ripe for decision and exclude from consideration issues already decided or not yet ripe.

NEPA, National Environmental Policy Act. Source: CEQ (2020).

linked to an SEA, so the strategic mitigation measures required may not be clear.

The non-US interviewees mentioned very few examples of mitigation measures, notably identification of robust locations where development can take place, (non-specific) mitigation measures required for individual sites put forward in a local development plan and minimisation of stream crossings (bridges, culverts) to protect water quality in a sensitive riparian area. Two interviewees working in developing countries suggested that SEAs could set high-level standards or guidelines to be met – for instance the International Finance Corporation Performance Standards, the Equator Principles, or World Health

Organization standards – and the project level would focus on how to meet these standards.

In contrast, tiered mitigation in the USA is well developed:

> Tier 1 could state that, any time in tier 2, if there is a certain type of impact, then this is the type of mitigation you should apply. For instance, "if this type of species or habitat would be affected, this is what the mitigation should be". It could say, for instance, in visual terms that all of the stations on a rail line should look a particular way, be made of a certain material, else that station will be subject to [a more detailed EIA]. Tier 1 mitigation is often about process, for instance "Every time the project is within half a mile of a wetland, you need to consult with the applicable wildlife agency and jointly discuss what mitigation measures will be needed". Or "First try to avoid historic buildings, but if you can't avoid them, then you should do the following predetermined process for evaluating such resources".

This involves doing more work at the strategic scale to avoid the need to do more work at the project scale: "front-loading the National Environmental Policy Act (NEPA) process". It also means that, at the project scale, the focus does not need to be on what mitigation is needed, but rather on how the mitigation can be implemented.

None of the international interviewees gave examples of effective monitoring of either SEA or EIA. SEA monitoring, where carried out, seems to be of the environmental baseline – bringing together data that already exist elsewhere – rather than monitoring of the effectiveness of SEA mitigation, or of plan implementation such as the number of houses built, rather than of the impact of these houses or the effectiveness of SEA mitigation in reducing the environmental impacts of the housing scheme. In Europe at least, this lacuna seems to be because there is no legal requirement for anyone to check the results of SEA or EIA monitoring, except in limited cases such as licensed facilities.

5 SEA–EIA Links in Ireland

5.1 Tiering Down from SEA to EIA

This chapter reports on the findings of the reviewed Irish case studies involving 9 SEAs and 12 EIAs. Tiering from SEA to EIA can take a variety of forms: (1) the SEA can shape alternatives at the project/EIA level; (2) the SEA can identify cumulative impacts and associated mitigation measures needed at the project/EIA level to deal with these; (3) the SEA can set conditions or mitigation measures for the project/EIA; and (4) the SEA and EIA monitoring stages can be coordinated. These are now discussed in sequence.

5.1.1 SEA shapes alternatives at the project level

A key SEA role highlighted in the literature is to identify and assess strategic-level alternatives, leaving project EIAs to deal with more specific alternatives. The strategic level might consider "why" and "what" alternatives, while the project level might consider "where" and "how" alternatives. In an ideal tiered assessment system, the higher-tier assessment would help to shape (and narrow) the lower-tier alternatives, and the lower-tier assessment would refer to the higher-tier assessment to justify its (narrowed) choice of alternatives.

Four of the nine Irish SEA ERs considered alternatives that were also relevant at project/EIA level, specifically development site locations, and two did so partially. For instance, the Shannon Foynes Port Development Masterplan 2013–2020 states that projects for the Shannon Foynes Port Development Expansion should be located within specified strategic areas identified in the SIFP SEA. The Clare Wind Energy Strategy 2017–2023 determines the locations where wind farm projects can proceed; the zoning of lands as "strategic areas" and "areas acceptable in principle" was informed by the SEA's determination of which parts of the county could support wind energy development sustainably. In these cases, the tiering is clear: the alternatives considered at the SEA level are focused on whether and/or where development should take place, whereas those in the EIAs are focused on the type of development and designs of such developments.

Of the 12 reviewed EIA projects, 9 indicated that the development locations discussed as EIA alternatives tiered down from the higher-tier SEA alternatives. These were related to the land-use planning sector, where SEA–EIA tiering is more established. This is particularly seen in the Cherrywood SDZ Masterplan 2010–2016, where the EIAR states:

> The location, size and scale of the project have been determined by the designation of the area as a Strategic Development Zone and the Cherrywood SDZ Masterplan 2010–2016 (as noted above, this Planning Scheme was subjected to its environmental assessment including consideration of alternative scenarios). Therefore, apart from localised interpretation of the Planning Scheme to suit conditions on the ground, no alternative sites were considered in this EIAR as the development of this site for the uses proposed has been identified as a strategic objective at a national level. Similarly, the size, scale and land use for the site has been pre-determined by the Planning Scheme. (Cherrywood Mixed-use Town Centre Development EIAR, p. 63)

The Glenmore Wind Farm project also clearly discusses the influence of the SEA alternatives in selecting the development site:

> [T]he site in Glenmore currently has permission for the erection of 11 no. wind turbines with a 75 m hub height and 80 m rotor diameter with associated infrastructure works including substation building and compound (Planning Ref. 02/2228). On this basis, it has been deemed by Clare County Council, through the planning process and subsequent adoption of the Clare Wind energy strategy (WES) 2017–2023 as being an appropriate area for wind farm development. Accordingly, the strategic suitability of the site has been considered acceptable. (Glenmore Wind Farm EIS, p. 69)

In Waterford, the Kilbarry project EIAR states that the suitability of the site for residential development was already considered as part of the Waterford SEA process (p. 70). Similarly, the Knockboy EIA notes that the project location was assessed and determined at the Waterford City SEA level and, as a result, the consideration of alternative site locations was not considered necessary (p. 21). The EIAR for the North Quay–River Suir Sustainable Transport Bridge project states that:

> Alternative bridge locations have not been assessed in this EIAR as this proposed bridge location is identified in the Waterford County Development Plan 2013–2019, the Planning Scheme for the North Quays Strategic Development Zone (SDZ) and the Waterford Planning, Landuse and Transport Strategy (PLUTS) in 2004. (North Quay–River Suir Sustainable Transport Bridge EIAR Volume 2, Chapter 3, p. 3)

The Listowel Bypass EIAR mentions that the route selection was undertaken at the higher tier, with the Kerry County Development Plan 2015–2021 listing the Listowel Bypass as one of the national priority infrastructure projects.

The EIAR for the Development Extension at Shannon Foynes Port project – part of the Shannon Integrated Framework Plan 2013–2020 – discusses the nine alternative strategic location sites, which tier down from the alternative sites discussed in the SEA ER. The Shannon Foynes Port Company (SFPC) development locations are also influenced by the higher-tier SEA.

5.1.2 SEA identifies cumulative impacts and project-level measures

Other key benefits of SEA are that it identifies cumulative impacts that may not be obvious, or easy to assess, at the project level and that it can propose consistent and effective measures to avoid and minimise cumulative impacts. Five out of the nine reviewed SEA case studies discuss cumulative impacts, for instance:

> If the strategy is not implemented, wind energy developments could be addressed on a case-by-case basis and cumulatively the landscape impacts could be considerable. (Clare Wind Energy Strategy, SEA ER, p. 42)

The SIFP 2013–2020 requires that the findings from the cumulative and in-combination assessments carried out as part of the SEA and AA processes should be taken into consideration at the project level (SIFP, p. 160). The SEA ER states that "the cumulative assessment considers the impact from these existing projects in combination with future development at the nearest Strategic Development Locations" (SIFP SEA ER, p. 382).

Good practice guidance on cumulative effects assessment has been recently published, which will support their systematic consideration in future SEAs.[8]

5.1.3 SEA indicates potential "route" of impacts

SEAs typically examine large-scale impacts, leaving site-specific impacts to be examined at the project EIA level. However, the SEA needs to be aware of the kinds of projects that may emerge from the plan, and the kinds of impacts that these projects may have, to identify reasonable alternatives and propose mitigation measures.

Only two of the SEAs reviewed do this. The Cherrywood SDZ Masterplan 2010–2016 proposes eight development areas, and its SEA ER evaluates these along with their objectives and their contributions towards the strategic environmental objectives. The SEA ER clarifies that "Environmental impacts which occur, if any, will be determined by the nature and extent of multiple or individual projects and site-specific environmental factors" (Cherrywood SDZ Masterplan SEA ER, p. 92). The Kerry County Development Plan SEA ER links the impact assessment to specific sectoral and infrastructural projects, as well as to the specifics of the settlement strategy.

8 https://www.epa.ie/publications/monitoring--assessment/assessment/EPA-Good-Practice-Guidelines-SEA.pdf (accessed 6 August 2021).

The Waterford City Development Plan 2013–2019 SEA ER does this partially, stating that the strategic nature of the plan means that many impacts can be assessed only as part of lower-tier assessments. While the SEA ER of the Eastern Midlands Regional Waste Management Plan (RWMP) 2015–2021 recognises that a robust site selection is key to avoiding significant impacts of waste infrastructure, and defines strategic criteria in support of site selection, it leaves any project location or development designs to be addressed at the EIA level. Similarly, the Clare Wind Energy Strategy 2017–2023 examines impacts in general terms rather than for each development zone, leaving the location-specific impacts to be examined and addressed at the project level. Arguably, the extent of the links at such planning hierarchy levels is appropriate, as certain issues can be considered (and examined) only once siting, layout and design specifications are known.

5.1.4 SEA/plan sets the structure for lower-tier assessments

The higher-tier SEA can influence subsequent EIAs, often via the plan, by informing EIA screening and setting parameters for subsequent EIAs. Highlighting where sensitivities are (which may trigger subthreshold EIA) also provides an early warning system for the consent team and the developer. Six out of the nine reviewed plans/SEAs do this.

For instance, the SIFP 2013–2020 SEA ER specifies that any proposals for tidal energy in the Shannon Estuary will be subject to EIA, the details of which will assess impacts on human health, and that road improvements and other infrastructure may require EIA and AA under the Habitats Directive.

The Clare Wind Energy Strategy 2017–2023 SEA ER also requires project-level assessments of landslide susceptibility and risk, visual impacts, and impacts on archaeology for all wind energy developments (p. 36). The Ulster Canal Restoration Plan 2016–2022 lists the types of impacts that must be assessed at the project level, including topics not specifically listed in the EIA Directive (e.g. sediment characterisation, waste management and underwater archaeology).

In many cases, the SEAs only hint at possible impacts, leaving the detailed assessment of impacts to the EIA level. For instance, the SEA ER for the Ulster Canal Restoration Plan 2016–2022 states that Waterways Ireland has identified the preferred route, but that further investigation and full design of the preferred route will be developed at the project level:

> The impacts from this Plan on the protected sites in this area cannot be precisely quantified or predicted at Plan level assessment. There is a requirement for comprehensive route and canal design information, along with more detailed ecological surveys and environmental modelling to establish the true potential effects of implementing this Plan. Therefore, further investigations at the project level are required to accurately assess impacts. (Ulster Canal Restoration Plan 2016-2022, SEA ER, p. 13)

Such recommendations are common where key information/data are missing and it will not be possible to generate these within the SEA ER preparation timeline or where these are dealt with more appropriately at project level (e.g. landscape character assessments, soil capacity).

The Waterford City Development Plan 2013–2019 SEA ER also identifies data gaps and technical difficulties that need to be addressed at the EIA level. It states that, owing to the strategic nature of the plan, some of the broad objectives cannot be accurately appraised to infer a definite positive or negative impact and so have been assessed as “uncertain”, as a lower-level tier assessment will be more appropriate to determine the precise nature of the impacts involved (Waterford City Development Plan SEA ER, pp. 70 and 79). The North Quays SDZ SEA ER (pp. 11 and 18) also leaves some assessments to be appraised at project level owing to the strategic nature of the plan and notes that the finding of “uncertain” impacts in the SEA matrix will be determined largely through EIA at the project level.

At the EIA level, the SEA scoping was found to have only minimal influence on the EIA scoping. Only 2 out of the 12 reviewed EIA projects referred to the SEA scoping. The Cherrywood Mixed-use Town Centre Development EIA scoping states that the development proposed is as prescribed in the Planning Scheme and does not alter the level or magnitude of environmental impacts already assessed (p. 8). The EIA scoping for the Ulster Canal Restoration Plan 2016–2022 provides a clear link to the SEA; it states that the SEA scoping

had an influence and refers to environmental issues raised by the SEA ER (the SEA and EIA processes ran concurrently in this case, which is uncommon). None of the other EIARs referred to the SEA ERs in terms of scoping.

5.1.5 SEA sets mitigation measures for lower-tier plans/projects

SEA can set mitigation measures for lower-tier plans/projects that ensure consistency between projects, the achievement of environmental objectives and more ambitious environmental requirements than could be achieved on a project-by-project basis. In six of the nine case studies, the SEAs set mitigation measures for lower-tier plans and/or projects.

For instance, the Clare Wind Energy Strategy 2017–2023 SEA ER lists mitigation measures to address environmental impacts of wind energy developments in the different development areas, including:

> All wind energy developments should prepare an environmental constraints map to identify the most and least sensitive environmental resources on the site. This constraints map will assist in informing the size, layout and design of the wind energy development. (Clare Wind Energy Strategy SEA ER, p. 55)

It also specifies that all development proposals must have regard to environmental considerations outlined in the SEA ER and associated Natura impact report:

> Proposals for development which are deemed contrary to the environmental objectives and policies contained within the Plan will not normally be permitted, and if permitted, should contain development specific mitigation measures which have been proven beyond scientific doubt, to remove significant negative effects… It is worth noting that many impacts are site-specific and difficult to quantify at the strategic level. (Clare Wind Energy Strategy SEA ER, p. 52, reiterated at p. 272)

The SEA ER notes that the development of specific measures for environmental parameters is a consequence of the SEA and AA processes informing the Wind Energy Strategy. These measures seek to address significant environmental impacts associated with wind energy development at the strategic and project levels. There is a clear commitment by Clare County Council to ensure the implementation of these measures (Clare Wind Energy Strategy 2017–2023 SEA ER, p. 56).

The Waterford City Development Plan 2013–2019 sets the strategic context for lower-tier plans such as local area plans, action plans or urban design frameworks, and outlines the guidelines and standards that the Planning Authority will apply in considering development proposals (Waterford City Development Plan, p. 71). For instance, the plan requires that all new local authority housing projects must have at least an "A2" energy efficiency level after 2012; all new local authority non-domestic building projects must be carbon neutral after 2014; all projects that may affect the River Suir Special Area of Conservation (SAC) will be subject to AA screening; and major infrastructure projects or other strategic infrastructure projects (e.g. Eirgrid) will be subject to EIA involving assessment of impacts on the landscape (Waterford City Development Plan SEA ER, pp. 50, 66 and 69).

The SIFP 2013–2020 distinguishes between overarching mitigation, mitigation measures by theme and site-specific mitigation measures. One of the overarching mitigation measures states: *"*At a project level, it is not sufficient to defer the production of construction method statements. These should be completed at the project design stage" (SIFP SEA ER, p. 451).

Less directly, the Kerry County Development Plan 2015–2021 lists the likely significant effects of possible future infrastructure projects, and includes measures that address issues that may arise at the project level, including AA, sustainable flood risk management and landscape/visual impact assessment. Similarly, the Ulster Canal Restoration Plan 2016–2022 SEA Statement (p. 36) states "Many of the mitigation measures highlight the importance of more detailed scientific investigation and assessment at the project level when more detailed design information is proposed." This includes project-specific mitigation measures such as modelling of the water supply location and analysis of the project's potential for direct

loss of fauna (Ulster Canal Restoration Plan SEA Statement, p. 38).

Arguably, mitigation in the form of an existing legal requirement (e.g. AA screening requirements) represents not meaningful mitigation but rather a means to pass on the consideration of certain issues to the project level, where they may be more appropriately considered. Strategic mitigation measures, such as in the Ulster Canal case, should focus on means to avoid/mitigate cumulative effects on the SACs[9] resulting from multiple projects and set the basis for the types of local and project-specific mitigation measures that should be considered at both EIA and project AA levels.

Of the 12 EIA projects examined, 4 suggest that the higher-tier SEA influenced mitigation measures at the project level. For example:

> The mitigation measures proposed are consistent with the measures listed in the SIFP SEA Environmental Report and Natura Impact assessment in terms of the general principles, mitigation for the Marine Related Industry theme and the site-specific mitigation. (Shannon Foynes Port Development Expansion EIAR, p. 367)

Although all three projects related to the Clare Wind Energy Strategy fall within the designated development site (strategic area), only the Cahermurphy project addresses the SEA mitigation measures and the use of conditions. There is no significant integration of SEA mitigation measures into any of the other reviewed project EIAs.

5.1.6 SEA sets monitoring requirements for projects

Monitoring of impacts can flag up where unforeseen impacts arise, and what mitigation measures are effective or ineffective. Project-level monitoring can therefore feed back into the plan level in the future, to help improve subsequent iterations of the plan. Monitoring can also help fill data gaps.

Four of the nine reviewed SEAs identify data gaps that are not covered by either the higher-tier or the lower-tier EIA/SEAs. For instance:

> Although a number of local biodiversity studies have been undertaken over the last number of years in Kerry by various groups, there are gaps in information relating to sites of local biodiversity value and ecological corridors. Information gaps in health and some socio-economic parameters were a factor in this ER. County-specific data was also missing for Green House Gas emissions, noise emissions and the condition of the soil. National research into flood risk management is ongoing by the OPW [Office of Public Works]. Preliminary Flood Risk Assessments maps are available but more detailed reporting on flood risk were not available at the time writing. (Kerry County Development Plan SEA ER, pp.18–19)

> The most significant data gaps which should be prioritised are bird surveys (inter-tidal feeding areas, wintering and migratory) on an appropriate spatial and temporal scale together with cetacean monitoring upstream from Tarbert … In order to supplement biodiversity data gaps, additional data gathering to be subsequently used during the plan review or at project level should be undertaken. (SIFP SEA ER, p. 426)

The Clare Wind Energy Strategy identified data gaps at the higher planning level (i.e. habitat mapping, flood risk and water) and some of these data gaps are covered in some of the lower-tier assessments (EIA), specifically in the Glenmore Wind Farm Development.

Only one of the nine SEAs relates its monitoring programme to specific projects, with the rest keeping monitoring at the strategic level. The Waterford City Development Plan 2013–2019 SEA ER monitoring includes children's playgrounds completed in Manor Street and Hennessy's Road, phase 2 of water mains

9 Upper Lough Erne SAC, Lough Oughter and Associated Loughs SAC, Magheraveely Marl Loughs SAC and Peatlands Park SAC.

rehabilitation and construction of a water tower and reservoir at Gracedieu West. The Clare Wind Energy Strategy 2017–2023 SEA ER recommends that monitoring information should be placed on a GIS, and updated as data become available, for instance from EIARs.

Of the 12 EIA projects, only 2 have EIA monitoring measures that are influenced by monitoring at the higher tier. For example, the Cherrywood Mixed-use Town Centre Development project EIAR includes monitoring measures in each chapter, and these are linked to the SEA.

5.2 Tiering Up from EIA to SEA

"Tiering up" is where the higher-tier SEA is informed/influenced by a lower-tier SEA or a project EIA. Three SEA ERs "tier up" some data, but only to a minimal extent:

- The Kerry County Development Plan 2015–2021 SEA ER refers to data gathered at EIA level regarding roads, some of which had received planning permission while some were awaiting approval. The SEA ER lists all the environmental projects prepared in relation to each of the infrastructure projects in the area, including sewerage project schemes, as well as the findings from the environmental reports for each of the projects. For example, in the case of the N69 Listowel Bypass, the SEA ER says "This scheme has been previously assessed in the SEA and HDA [Habitats Directive assessment] of the Listowel/Ballybunion Functional Area Local Area Plan 2013–2019" (Kerry County Development Plan SEA ER, p. 376).
- "While the EIS associated with the … project has already addressed the impacts to aquaculture in this area associated with the potential development the cumulative and in-combination effects with any other project brought forward at the adjacent Ballylongford site will need to ensure no additional impact is added which may lead to the loss of this industry" (SIFP SEA ER, p. 385).
- "A review was carried out of the Environmental Report prepared for the previous City Development Plan to inform the baseline and analyse trends in the environmental topics… Environmental Reports for the Waterford City Environs and Ferrybank/Belview Local Area Plans were reviewed to inform in-combination effects" (Waterford City Development Plan SEA ER, p. 5).

5.3 Overall SEA–EIA Links

SEA–EIA links exist in Ireland, as evidenced in the reviewed case studies by the influence of SEA alternatives and mitigation measures guiding the scope and focus of the EIA at the project level. Top-down tiering (SEA to EIA) is more evident than bottom-up tiering (EIA to SEA). In all of the reviewed case studies, the SEA ERs address large-scale, cumulative effects and strategic alternatives, refining the scope of the assessments at lower tiers. The linkages are stronger in certain cases, particularly for lower-tier plans (e.g. Cherrywood SDZ Masterplan 2010–2016).

Higher-tier SEAs influence the alternatives that are considered at the lower tier: this is apparent in 9 out of the 12 reviewed EIARs/EISs. This is most clearly evident in the selection of development locations, future projects/developments and mitigation measures proposed at the lower-tier level. This results in strategic tiers refining or reducing the scope of the environmental assessment at the lower-tier level. In turn, the project EIAs indicate that the development locations they have considered have tiered down from the higher-tier SEA alternatives. For instance, the Cherrywood SDZ Masterplan 2010–2016 provides a clear example of top-down tiering of development locations; the location, size and scale of the project were determined at the higher-tier level (the SDZ Masterplan), and the EIAR did not consider any alternative sites, as the project location, size, scale and land use are designated in the Planning Scheme, and well-covered in the associated SEA.

The Clare Wind Energy Strategy 2017–2023 SEA ER also predetermined appropriate areas for wind farm development, influencing the development sites of subsequent wind farm projects such as the Glenmore Wind Farm. The projects arising from the Waterford City Development Plan 2013–2019 (i.e. Kilbarry and Knockboy) also indicate the influence of the SEA on project site location, and state that the suitability of the locations was considered at the SEA level. In this and other cases, the SEA ERs identified issues that lower tiers should consider, and the lower tiers were more focused on the project-specific impacts that can be influenced by decision-making at that level.

Table 5.1. Key links between SEA and EIA in the reviewed case studies

SEA/plan	EIA/project
SEA ERs explain timing of SEA vs plan-making SEA statements list how the SEA findings were taken into account in the plan (e.g. Clare Wind Energy Strategy SEA Statement, p. 17; Ulster Canal Restoration Plan SEA Statement, pp. 23–36) The preferred SEA alternatives are adopted in the plan, or an explanation is provided as to why they have not been adopted (e.g. SIFP, p. 157; Ulster Canal Restoration SEA Statement, p. 30) SEA recommendations/mitigation measures are fully integrated into the plan, with this integration shown in the SEA ER or SEA Statement (e.g. Eastern Midlands RWMP, p. 11; Ulster Canal Restoration Plan SEA ER, p. 36) or the plan refers project applicants back to the SEA ER (e.g. SIFP, p. 160) SEA monitoring measures are included in the plan monitoring (e.g. Cherrywood SDZ Masterplan SEA ER, p. 125; Kerry County Development Plan, p. 271)	Project refers back to the plan for compliance (e.g. Cherrywood Town Centre Development project EIAR, p. 8) Project refers back to the plan's mitigation measures (e.g. Shannon Foynes Port Development Expansion EIAR, p. 367)
Alternatives	
Plan alternatives are strategic, but (at a local and possibly regional scale) projects can be inferred from them (e.g. Clare Wind Energy Strategy) SEA ER is written so that subsequent EIAs can use the ER to support a "scoping out" of other strategic alternatives where assessed to appropriate level of detail (e.g. Ulster Canal Restoration Plan SEA ER, p. 49; Waterford City Development Plan SEA ER, p. 59)	Project is consistent with the plan preferred alternatives (e.g. Cherrywood SDZ and town centre development, Clare Wind Strategy and wind farms, Waterford City Development Plan and Kilbarry residential development, Ulster Canal Restoration Plan and Upper Lough Erne to Clones restoration project) EIAR refers to SEA alternatives (Clare Wind Energy Strategy; Glenmore Wind Farm EIS, p. 69; Ulster Canal Restoration EIS, p. 43; Cherrywood Mixed-use Town Centre Development EIAR, p. 63)
Impact assessment	
SEA ER identifies the possible "route" of impacts to the project level (e.g. Kerry County Development Plan SEA ER, p. 168) Where appropriate, SEA ER identifies projects (and their EIAs) that provide information for the SEA (e.g. Waterford City Development Plan SEA ER, p. 5) Where appropriate, SEA ER requires specific considerations for EIA assessments (e.g. Clare Wind Energy Strategy SEA ER, pp. 36, 44 and 47) SEA scopes out impacts that are unlikely to be significant at the project level (e.g. Cherrywood SDZ Masterplan SEA ER, p. 92; Kerry County Development Plan SEA ER, p. 169) SEA scopes in impacts that are likely to be significant at the project level (e.g. Kerry County Development Plan SEA ER, p. 168) SEA identifies existing and planned projects that could lead to significant cumulative impacts with the plan (e.g. Waterford City Development Plan SEA ER, p. 5; Kerry County Development Plan SEA ER, pp. 168–169)	Impact assessments are carried out for projects that may not normally require EIA (i.e. those that are subthreshold) but that are identified by the SEA as requiring further assessment (Clare Wind Energy Strategy SEA ER, pp. 36 and 44) Certain impacts are not further examined, where appropriate and taking into account precautionary principles, as they are scoped out at the SEA level and/or no changes are anticipated from those predicted in the SEA ER (e.g. Cherrywood Mixed-use Town Centre Development EIAR, p. 43). This is often possible only in lower-tier plans (i.e. local area plan and masterplan level, which tend to consider specific project types and locations)
Mitigation	
SEA identifies mitigation measures for significant impacts and identifies where these need to be applied at the project level (e.g. Clare Wind Energy Strategy SEA ER, p. 55; Waterford City Development Plan SEA ER, pp. 50, 66 and 69) SEA identifies cumulative impacts and proposes consistent mitigation measures for lower-tier plans/projects to deal with these impacts (not currently done well, although HDA gives an indication of how this could be done) Mitigation measures for each type/location of project are clearly listed in the plan, or the plan is cross-referred to the SEA mitigation measures (e.g. Clare Wind Energy Strategy SEA ER, p. 55; SIFP SEA ER, p. 451)	Project/EIA implement the SEA ER mitigation measures or explain why they do not, and propose a different way of mitigating the impacts (e.g. Shannon Foynes Port Strategic Infrastructure Development EIAR, p. 367) Project/EIA implement SEA ER mitigation measures for cumulative impacts (e.g. Shannon Foynes Port Strategic Infrastructure Development EIAR, p. 367)

Table 5.1. Continued

SEA/plan	EIA/project
Monitoring	
SEA identifies data gaps and recommends project-level monitoring to fill these (e.g. Clare Wind Energy Strategy SEA ER, p. 90; Kerry County Development Plan SEA ER, p. 56; SIFP SEA ER, p. 165; Waterford City Development Plan SEA ER, p. 65)	Project-level monitoring fills SEA gaps (e.g. KMK Metal Recycling Ltd EIAR, p. 132)

The EIAs can focus on the impacts of the remaining project-specific alternatives since the impacts of the strategic alternatives have already been discussed and considered in greater detail in the prior SEA.

In contrast, the linkages regarding mitigation measures at the different tiers are weak and tenuous. Only 4 of the 12 reviewed EIAs indicated that SEA influenced the project-level mitigation measures. The linkages are most apparent in the Ulster Canal Restoration Upper Lough Erne Project and the Shannon Foynes Port Development Expansion Strategic Infrastructure Development, which provide mitigation measures that are consistent with those in the higher-tier SEA. The tiering links of monitoring measures are also weak, with only 2 of the 12 EIA projects indicating that the EIA monitoring measures were influenced by the higher-tier monitoring measures. These shortcomings with regard to SEA–EIA links through mitigation and monitoring merit further examination, for example in terms of whether SEA mitigation/monitoring measures are appropriate for implementation through EIA/ projects.

The extent of tiering differs across sectors and planning hierarchies. Overall, SEA–EIA links are clearest in the land-use planning sector (including wind energy planning). Unsurprisingly, lower-tier plans and their SEAs show clearer links to projects and their EIAs than do the higher tiers, such as county or regional plans. For example, the Shannon Foynes Port Development Masterplan 2013–2020 is specific about the locations for the projects for the Shannon Foynes Port Development Expansion and indicates that the project should be located within specified strategic areas identified in the SEA. Similarly, the Cherrywood SDZ Masterplan 2010–2016 contains specific details/ links with the related project (particularly with the reviewed Mixed-use Town Centre Development) and the North Quays SDZ is clear about the location for the North Quay–River Suir Sustainable Transport Bridge project. The Clare Wind Energy Strategy 2017–2023 is specific about the strategic locations of the projects and assessment requirements at project level (with the three wind farm projects reviewed aligning with the strategy). Nevertheless, these observations cannot be generalised given the small sample of reviewed case studies, particularly as, in contrast, the Waterford City Development Plan 2013–2019 does not specify the type of projects that will derive from the plan.

5.4 Good Tiering Practice

Table 5.1 highlights good tiering practice across relevant assessment stages from the review of SEA and EIA case studies. It should be noted that where EIARs identify links to the relevant SEA, these tend to be through the influence of SEA on the plan (e.g. SEA mitigation being incorporated in the plan. The case study reviews revealed, in agreement with the interview findings, that project EIAs tend to refer to plans for compliance (rather than to the associated SEAs).

6 Recommendations to Improve SEA–EIA Tiering

Based on the findings of the national and international interviews and the Irish case studies, the following recommendations aim to inform future guidance for enhancing SEA and EIA links.

- **Amending legislation,[10] guidance and/or departmental circulars** would help to ensure that SEA and EIA "talk" to each other. The aim would be to make SEAs more forward-thinking and focused on identifying issues at lower tiers, including projects, and thus better able to inform EIAs. This would include SEAs setting requirements for further surveys and assessment detail, and providing more specific mitigation and monitoring measures that can guide projects and ensure that environmental impacts are avoided/reduced on the ground. In the case of EIA, the aim of legislation/guidance/circulars would be to ensure that EIAs look up to, and respond to, SEAs by checking that all key SEA-related issues are addressed, data gaps are filled, proposed alternatives are compliant with more strategic choices, and mitigation and monitoring measures are implemented.
- **Preparing plans and SEA ERs with EIA in mind.** SEA practitioners should undertake their assessments and write their reports with lower-tier plan and project assessments in mind, and provide clearer guidance and specific mitigation and data acquisition/monitoring recommendations that are relevant at lower tiers. This is not an issue only for local plans and projects; national-level plans and their SEAs also need to set a clear framework for downstream plans and projects. At the moment, the SEA mitigation for high-level plans arguably often leaves issues to be sorted out in lower-tier plans, with little direction as to how this might happen in the light of the outcomes of the SEA/AA.

  Writing plans and SEA ERs with EIA in mind would include, for example:
  - stating the level of detail of the plan, and specifying the types of projects and how they will "flow" from the plan;
  - "telling the story" of alternatives so that this can be taken forward and implemented/replicated at the lower-tier plan or project level;
  - providing specific mitigation measures for incorporation into the plan to inform project design, which is particularly important to address cumulative impacts, such as climate change, habitat fragmentation or gradual urbanisation of an area (e.g. through energy efficiency standards, habitat buffers and ecological stepping stones), that might not otherwise be addressed at the lower-tier plan or project level;
  - putting forward recommendations to address data collection needs (and thus address data gaps identified at SEA level) at the lower-tier plan or project level and at the operational phase;
  - recommending further assessment of issues at the project level (e.g. for project types X and Y in areas A and B, it should be demonstrated that environmental sensitivities C, D and E are not affected); environmental sensitivity mapping may be helpful in identifying such issues;
  - considering whether data collection, mitigation measures and further assessment should apply only to EIA projects or to all/specified projects in the plan area.

  SEA authors should also challenge planners to write more focused and implementable plans, with projects in mind.
- **Preparing EIARs with SEA in mind.** EIA practitioners should ensure that projects and associated EIARs align with higher-tier SEAs by checking that all key issues are addressed, data gaps are filled, proposed alternatives are in line with strategic choices and relevant SEA mitigation

10 Amending legislation would be more difficult than providing new guidance or circulars, but would probably be more effective in ensuring that tiering is carried out in practice.

measures are integrated into the EIA process and documentation:

- EIARs should describe the main requirements of relevant plans and their SEAs with respect to the type, location and alternatives to the proposed project, whether/how the project achieves these requirements, and where it goes counter to the requirements, why and what is being done about that.
- The scope of EIAs should align with any screening and scoping in/out of issues in higher-tier SEAs, or explain why this is not appropriate for the project in question.
- EIAs should "inherit" the list of mitigation measures from the relevant SEA(s), and show how the project achieves these measures, or explain why they are not appropriate for the project in question.
- EIARs should include project-specific monitoring requirements resulting from SEA so that the EIA effectively addresses data gaps and strategic uncertainties for a robust assessment.
- It should be ensured that EIAR data are made available online, as well as including a link to the EIAR in the EIA Portal, where required.

- **Screening and/or scoping out EIA where appropriate.** Where the same agency carries out both the plan-making/SEA and project development/EIA, the agency may be able to identify circumstances in which EIA is not needed for Annex II projects (e.g. if all projects are under X metres in height, adhere to energy efficiency level Y, are car-free), although this is limited by the existing legislative system of EIA project thresholds. The SEA may also be able to identify circumstances in which the scope of the EIA can be restricted (e.g. projects in area Y do not need to consider flood risk or agricultural soil quality). This will help to reduce the time and cost of carrying out EIAs. This will require more work at the plan/SEA level to ensure that no negative impacts occur at the lower level, through the setting up of robust mitigation measures ("front-loading the assessment"). It will also be critical to document the basis for not requiring EIA or restricting the scope of EIA. Where different organisations prepare the plan and propose the project, screening out of EIA and scoping out of impacts could still be actively considered, but may require more safeguards. In such a case, the benefits of more robust screening/scoping will accrue at the EIA level and the costs at the SEA level; it also removes an element of control from the planning authority's development management team.
- **Using monitoring to link the SEA and EIA.** Strategic monitoring indicators can be brought down to the project level, where economically and practically feasible, to follow up on progress in the implementation of mitigation measures, fill data gaps and identify unforeseen adverse effects. For example, as part of a planning permission or licensing consent, a project could be required to monitor an indicator that is relevant for ensuring water or biodiversity protection for which a lack of suitable information exists to inform planning decisions. The monitoring information can accumulate back-up to work with and inform the strategic-level indicator. Monitoring can also facilitate carrying down to the lower-tier assessment those issues that the EIA might not otherwise consider (e.g. cumulative impacts, carbon emissions, habitat fragmentation). SEA monitoring results should be made publicly available at appropriate frequencies within the lifetime of the plan.[11]
- **Setting up a GIS-based SEA and EIA reporting system.** GIS can help to facilitate the upwards and downwards flows of data between assessments by centralising data in a single interface. Recording the zoning of lands on a GIS map and presenting for each zone the attached "conditions" and/or mitigation measures resulting from SEA, and the location of planning applications/licences and their EIAs, would significantly facilitate SEA–EIA links. The Irish EIA Portal (https://www.gov.ie/en/publication/9f9e7-eia-portal/) already partly does this by recording the location of EIA projects on a GIS map and providing links to their planning applications and related documentation. EPA Maps (https://gis.epa.ie/EPAMaps) also already shows licence applications, and the applications and associated

11 This is already required for land-use plans under Article 13J of the Planning and Development Regulations 2001 as amended. See http://www.irishstatutebook.ie/eli/2001/si/600/made/en/print (accessed 5 July 2021).

EIARs are available on the EPA website. MyPlan currently centralises land-use zonings, and could be expanded to capture the "conditions" attached to each zone and any other relevant SEA recommendations. Proposals for an SEA Portal will be developed during the current SEA Action Plan. Capturing monitoring indicators at all planning tiers in the Environmental Sensitivity Mapping webtool (www.enviromap.ie) would also help provide more robust evidence of environmental conditions and changes over time. This could be taken further by extracting the issues identified in the EIA, how they were mitigated and any monitoring recommendations, and making these publicly available. This could be carried out as part of the preparation of the EIAR. The same could be done for SEAs and possibly AAs, whereby each land-use zone mapped in a centralised GIS system contains a series of specifications (including requirements for project-level monitoring) derived from the SEA/AA that can be queried by the users. The SEA statement step could be used for this. This would enable data sharing, foster SEA–EIA links, and facilitate an environmental compliance system. In all cases, both SEA ERs and SEA statements should remain permanently available on the same website as the plan in question.

- **Setting up a compliance check system.** Including an objective in the plan that requires checking that all planning/licence applications – not just applications for EIA projects – to be compliant with the plan objectives, strategic environmental protection objectives and SEA mitigation measures would ensure that tiering takes place.
- **Avoiding silo assessment approaches.** This entails open communication and data sharing between people who write plans (and their SEA ERs), and those who implement the plans and propose projects (and prepare their EIARs). This would help to ensure that higher-tier plan-makers consider the framework that they set for development control, identify key issues of concern, and put forward meaningful, focused and effect-specific mitigation measures. It would also help to ensure that project proponents and lower-tier project assessors are aware of how upper-tier plans/programmes and their associated SEAs affect the project/EIA.
- **Training** is an essential part of improving practice. It would help enhance awareness and understanding of the value of tiering, and improve both SEA and EIA processes and their links.

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Abbreviations

AA	Appropriate Assessment
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report (term used in 2014/52/EU EIA Directive)
EIS	Environmental impact statement (term used prior to the 2014/52/EU EIA Directive)
EPA	Environmental Protection Agency
EU	European Union
GIS	Global Information System
HDA	Habitats Directive Assessment
NDP	National Development Plan
NIR	Natura Impact Report
NTS	Non-technical summary
RWMP	Regional Waste Management Plan
SAC	Special Area of Conservation
SDZ	Strategic Development Zone
SEA	Strategic environmental assessment
SEA ER	Strategic environmental assessment environmental report
SIFP	Shannon Integrated Framework Plan
WFD	Water Framework Directive

Glossary

Environmental Impact Assessment (EIA)	Assessment of the environmental effects of those public and private projects which are likely to have significant effects on the environment
Strategic Environmental Assessment (SEA)	Assessment of the effects of certain plans and programmes on the environment
Tiering	Deliberate and organised transfer of information and issues from one level of planning to another, which is supported by environmental assessments

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 raideolaíochta.
- 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 ghiniúint 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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Tiering of Environmental Assessment - The Influence of Strategic Environmental Assessment on Project-level Environmental Impact Assessment

Authors: Ainhoa González Del Campo, Riki Thérivel and Keletso Malepe

Identifying Pressures

Strategic Environmental Assessments (SEAs) aim to identify and mitigate environmental impacts resulting from the implementation of plans and programmes (e.g. county development plans, wind energy strategies) before they are adopted. Environmental Impact Assessments (EIAs) aim to do the same for projects (e.g. residential or windfarm developments) before planning permission is given. In theory, SEAs should set the context for, and inform, EIAs so that environmental considerations trickle down for environmental protection on the ground. EIAs could also provide data for SEAs, enhancing the evidence-base for strategic assessments and decisions. However, in practice, the lack of communication and links between SEA and EIA impede achieving the benefits of tiering.

This research was based on a literature review, interviews with 28 international and Irish experts, and a review of 19 Irish case studies. It found that SEA data are rarely used in EIAs; SEA alternatives are sometimes referred to in EIAs but could set a clearer structure; SEA mitigation measures are generally not written with EIAs in mind; and EIA monitoring does not feedback to SEAs. This reduces the effectiveness and efficiency of both SEAs and EIAs.

Informing Policy

Improving impact assessment tiering involves better communication: writing SEAs with EIAs in mind, and referring to SEAs in EIA Reports. This allows strategic-level alternatives and public concerns to be addressed at the strategic scale, so that these issues do not need to be revisited for each subsequent project. It allows urgent issues such as climate change and biodiversity loss, which require a strategic response, to be better considered in individual projects. It can allow strategic decisions for large-scale development to be made early on – for instance protecting strategic development sites from inappropriate development. SEA may also be able to define the scope of subsequent EIAs, saving time and resources. Although this all involves more work at the SEA stage, it can reduce the workload at the EIA stage, and help to ensure that plans and environmental objectives are better implemented. However, some institutional issues can set a context that restricts tiering, including 'silo assessment' and lack of training.

Developing Solutions

This research has identified a range of good practice approaches to impact assessment tiering, which can be summarised as better communication between SEA and EIA practitioners. Data can be better shared, for instance by using GIS. Planners and SEA practitioners should undertake their SEAs, and write their plans and SEA reports with lower-tier assessments in mind, and provide clearer guidance, mitigation and data acquisition/monitoring recommendations for lower tiers, including projects and their EIAs. EIAs should align with higher-tier SEAs by checking that all key issues are addressed, data gaps are filled, proposed alternatives take into account strategic choices, and relevant SEA mitigation measures are integrated into the EIA process, the project and associated documentation.

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