



COMBO



Impact Mitigation and
Ecological Compensation
Thematic Group

Strategic Planning for the Mitigation Hierarchy

How can the mitigation hierarchy be applied at different scales to improve outcomes?

Development should be planned, and the mitigation hierarchy applied, at the strategic and at the project level. Both are important to ensure the effective assessment and mitigation of significant impacts. The most effective approach is first to undertake Strategic Environmental Assessment (SEA). This involves a broad-scale assessment using integrated spatial planning in a defined region that is ecologically and socially consistent and where targets and thresholds can be set. Subsequent Environmental and Social Impact Assessments (ESIAs) for projects that are aligned with recommendations from the SEA or integrated spatial plan should then be carried out. These project-level assessments involve more detailed information gathering and analysis, and greater engagement with local stakeholders, to refine proposed mitigation measures.

Introduction to SEA and ESIA

Impact assessment can be done at a strategic level to help formulate policies, plans and programmes, known as Strategic Environmental Assessment (SEA). It can also be carried out for individual development projects, through Environmental and Social Impact Assessment (ESIA). Often, both are required to meet policy or legal requirements established by governments and/or financiers.

ESIA at the project level is the most commonly used form of impact assessment. While the adoption of SEA and the development of associated policy has been slow internationally, several countries have integrated spatial planning processes that serve a similar purpose to SEA. SEA and integrated spatial planning incorporate consideration of biodiversity and ecosystem services into development and land use plans, providing a blueprint for directing economic project development to the most suitable areas.

Ideally, government policy should require both SEA, to develop a spatial plan for a region that is aligned with environmental and social goals, and ESIA, to ensure that individual projects align with the plan and do not have significant residual impacts. Both should apply the mitigation hierarchy, with an emphasis on avoiding impacts and with biodiversity offsets being used as a last resort (*see Brief 3: Impact Assessment and the Mitigation Hierarchy*).

Investors who are building a portfolio of projects in a landscape, including development banks, would benefit greatly from preparing a SEA to guide their decisions. When no SEA is available or being undertaken by a suitable public body, a project proponent should consider preparing one itself, at least at a high level, as a first step in the preparation of a project-level proposal and associated ESIA.

SEA

Scope: An area, region, or sector. May account for multiple sectors, development projects and scenarios

Responsible party: Led and funded by government, or an organisation responsible for a sector or region

Impact assessment process: Flexible, iterative approach and process depending on context and needs; proactive (ideally) or reactive (where necessary)

Spatial scale: Municipal or regional

Temporal scale: Medium to long term

Impact types: Direct, indirect, and cumulative impacts

Focus: Achieving and maintaining a chosen environmental state

Perspective and level of detail: Wide perspective, relatively low level of detail of investigation

Stakeholder engagement: Key government stakeholders, research institutions and NGOs at national or regional levels

ESIA

Scope: The proposed project

Responsible party: Undertaken and funded by project proponent, either government or private sector

Impact assessment process: Reactive, undertaken in response to proposed project, well-defined linear process using established protocols

Spatial scale: Local

Temporal scale: Short to medium term

Impact types: Primarily direct and indirect impacts

Focus: Mitigating project impacts

Perspective and level of detail: Narrow perspective, high level of detail

Stakeholder engagement: Government stakeholders at all levels; strong focus on local engagement to identify and take into account local values (local communities, NGOs, community-based organisations)

The role of strategic planning in the ESIA process

1. Proactive alignment with overarching biodiversity targets

ESIA processes are typically undertaken reactively in response to a project proposal on a specific site, and focus on mitigation of that project's impacts. The detailed design of mitigation measures at project level often fails to consider the 'bigger picture'. By contrast, strategic-level processes (SEA) take a proactive approach to achieve and maintain desired environmental quality. SEA can therefore enable the identification of mitigation measures that will best contribute to biodiversity goals at regional, national and/or global level. Integrated spatial plans, for example, may be designed to ensure overarching biodiversity target outcomes are achieved, alongside options for development that would have minimal negative impact.

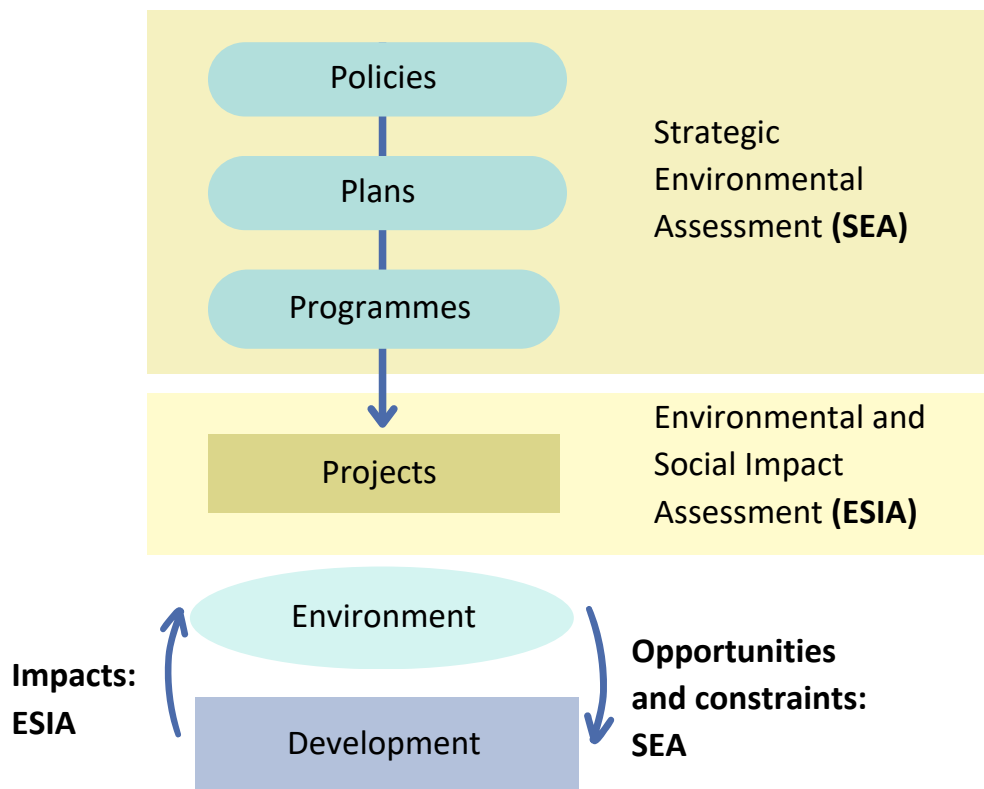


Figure 1. Application of SEA and ESIA

2. Better avoidance of impacts

The narrow focus of project-level impact assessment can mean that potential interactions with important landscape or seascape features and processes can be overlooked. This in turn can lead to insufficient mitigation, especially avoidance measures. SEA can help reduce this risk.

SEA explicitly considers landscape- or seascape-scale ecological features, processes and connectivity, enabling better identification of significant biodiversity impacts. Areas and features that are crucial for conservation and providing ecosystem services can be identified. Developing integrated spatial plans and SEAs is facilitated in jurisdictions having existing spatial biodiversity plans. SEA can incorporate avoidance of impacts on:

- Sites and networks of sites that are considered irreplaceable and essential to conserve (or restore) if jurisdictional biodiversity goals are to be met, for example, because they are not found elsewhere in the landscape.
- Areas that have been identified as priorities for conservation, including Protected Areas, Other Effective Area-based Conservation Measures, Key Biodiversity Areas, Red-Listed ecosystems, habitats of Red-Listed species or populations of species which are of evolutionary significance, World Heritage or Ramsar sites, High Conservation Value or Old Growth forests.
- Ecological corridors, both for migratory or other movement of fauna, and to allow for longer-term adaptation of ecosystems and species to climate change.
- Areas that are important to communities, such as strategic water sources and their catchments, erosion control areas, flood or storm-surge buffering areas, and culturally significant places.

3. Cumulative impacts better identified and addressed

Assessment and mitigation focussed solely on the project level fails to consider the cumulative impacts from multiple developments, sectors, and activities in the landscape. Each individual impact might be too small to be considered significant at the project level, but collectively these impacts add up. Worse still, multiple impacts can interact, meaning that the consequences for biodiversity can be worse than simply the additive effects of multiple impacts. Further, even in countries where ESIA is legally required, there are often activities exempt from ESIA and therefore also from any mitigation of their negative impacts on biodiversity and people. This increases the problem of cumulative impacts.

All of this means that important impacts can remain undetected and/or unaddressed—leading to ‘death by a thousand cuts’. For instance, when multiple ESIA’s and individual authorisations for small amounts of habitat conversion to intensive agriculture occur in a region, a vegetation type of ‘least concern’ can become critically endangered.

Conducting assessments at the strategic level allows for a comprehensive evaluation of the combined impacts of multiple developments and activities in a region, including those not normally subject to site-level assessment. SEA thus enables a more accurate assessment of the significance of impacts on valued biodiversity features and ecosystem services compared to project-level evaluations. Since SEA can set clear parameters or ‘guardrails’ for projects in the affected region, it can ensure that the appropriate level of mitigation for any given project is required in the context of the full, cumulative effects of development and other activities on the landscape or seascape.

4. Better identification of suitable offset sites

Similarly, planning an offset at the project level only could fail to achieve outcomes that align with national or regional biodiversity goals. For example, a project may claim to achieve ‘no net loss’, but the outcome is achieved only relative to a counterfactual scenario of decline caused by other drivers of change in the landscape (see *Brief 2: Aligning Mitigation Outcomes with Biodiversity Goals and Targets*, *Brief 8: Metrics for Quantifying Biodiversity*), thereby making no meaningful contribution to achieving broader biodiversity goals. The siting and design of offsets by individual projects undertaking EISA can also result in small, isolated conservation areas in the landscape which may not be viable in the long term, and difficult to manage effectively.

Strategic planning can help to identify the potential for adequate offsets that collectively counterbalance any permitted impacts and help achieve broader restoration goals within the land- or seascape. It can help to develop coordinated plans for their efficient and effective long-term management, such as through the establishment of aggregated offset areas, which compensate for combined residual impacts from multiple development projects. Strategic planning can also help inform the establishment of aggregated and anticipated offsets where biodiversity gains are “banked” for future use. Employing SEA in coordinated offset planning can ensure larger, consolidated, and connected offset areas that facilitate long-term management.

Aligning strategic and project-level assessments

For effective impact mitigation across scales, strategic and project-level approaches need to align. In contexts where multiple factors are expected to impact biodiversity and ecosystem services, SEA is a valuable first step. The mitigation hierarchy should be applied first at this strategic level before conducting project-level ESIA. An SEA or integrated spatial plan can provide clear rules and limits, along with mitigation measures, for any future projects or land uses within its scope. This includes identifying areas in the landscape suitable for particular activities, and priority areas for impact avoidance, conservation and restoration, to ensure the mitigation hierarchy can be followed. This then sets the framework within which project-level ESIA is done, ensuring that outcomes align with the objectives set at the strategic level.

About COMBO+ and IMEC

From 2016 – 2025 AFD and FFEM financed the **Conservation, Mitigation and Biodiversity Offsets Programme (COMBO+)**, as part of which technical briefs 1 -10 were drafted, in collaboration with the IUCN Thematic Group Impact Mitigation and Ecological Compensation. COMBO has been implemented across six countries in Africa and Asia, together with government, private sector and civil society, to help reconcile economic development and biodiversity conservation through application of the mitigation hierarchy in policy and practice to achieve no net loss or net gain of biodiversity and contribute to national biodiversity targets aligned with the Kunming-Montreal Global Biodiversity Framework. The initiative was led by the Wildlife Conservation Society in partnership with Biotope, BIOFUND, Guinée Ecologie, Myanmar Biodiversity Fund and the University of Queensland.

The **Impact Mitigation and Ecological Compensation (IMEC)** Thematic Group of the IUCN's Commission on Ecosystem Management (CEM) serves as an international community of practice, guiding best practice application of the mitigation hierarchy and improving alignment of impact mitigation and ecological compensation with biodiversity targets.

Useful resources

- Fauna & Flora International. (2021). *Coordinated and collaborative application of the mitigation hierarchy in complex multi-use landscapes in Africa*.
https://www.faunaflora.org/app/uploads/2021/02/FFI_CALM_Guinea_REB_Case_Study_FINAL_ENG.pdf
- International Association for Impact Assessment (IAIA). (2016). *FastTips No. 13: Ecosystem services in SEA for spatial planning*.
https://www.iaia.org/uploads/pdf/Fasttips_13%20Ecosystem%20Services%20SEA%20for%20SP.pdf
- Jones, K. R., von Hase, A., Costa, H. M., et al. (2022). Spatial analysis to inform the mitigation hierarchy. *Conservation Science and Practice*, 4(5).
<https://conbio.onlinelibrary.wiley.com/doi/pdf/10.1111/csp2.12686>
- Organisation for Economic Co-operation and Development (OECD). (2006). *Applying strategic environmental assessment: Good practice guidance for development cooperation*.
<https://www.oecd.org/environment/environment-development/37353858.pdf>
- United Nations Environment Programme (UNEP). (2004). *Environmental impact assessment and strategic environmental assessment: Towards an integrated approach*.
https://wedocs.unep.org/bitstream/handle/20.500.11822/8753/Environmental_impact_assessment.pdf?sequence=3&isAllowed=
- United Nations Environment Programme (UNEP). (2018). *Assessing environmental impacts: A global review of legislation*. <https://europa.eu/capacity4dev/unep/documents/assessing-environmental-impacts-global-review-legislation>





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