

CHAPTER 3

STAGES AND STEPS IN UNDERTAKING SEA

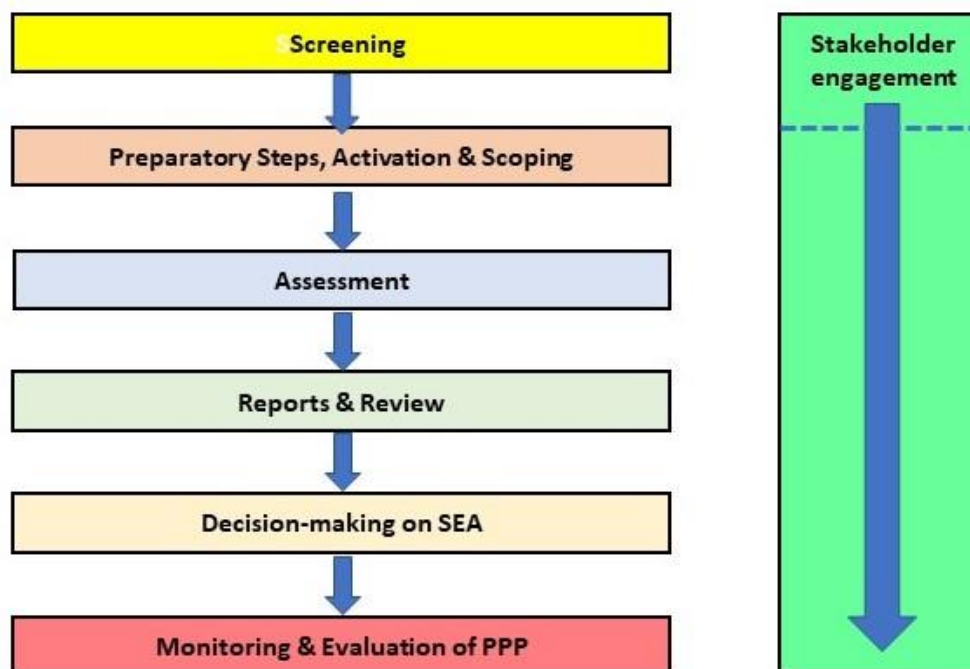
The steps discussed in this chapter are generic to all SEAs and will be applicable to any SEA undertaken for a PPP concerned with the energy transition. They are not repeated in the chapters on renewable energy sub-sectors in Parts B and C. These steps are based on accepted internationally principles for SEA good practice¹

The content of this chapter is of a technical nature and will be particularly useful to SEA practitioners.

3.1 THE SEA PROCESS AT A GLANCE

The main stages and steps in the SEA process will be determined by any national legal or regulatory requirements and may, therefore, differ from country to country. Typical stages are shown in Figure 3.1, summarised in Table 3.1, and described in the following sections.

Figure 3.1: Typical stages in the SEA process



3.2 SCREENING

Applying SEA can be a lengthy and expensive procedure (although rapid, less costly SEAs can sometimes be warranted). So, a SEA should be conducted when it is formally needed by law or regulation, is required by the safeguard policies of a lender/financing organisation (e.g. a multilateral development bank), or where concerns are expressed that there is a clear likelihood that an energy PPP or regional energy development proposal will lead to significant environmental and socio-economic consequences.

¹ OECD DAC (2006)

Table 3.1: Summary of stages in the SEA process

STAGE OF THE SEA
<p>STAGE 1: SCREENING</p> <ul style="list-style-type: none"> • The proponent screens its proposed PPP to determine if it is required by law/regulation to be subjected to an SEA. Depending on national legislative requirements, this may involve determining if the PPP is likely to have significant environmental and social risks or impacts. The proponent may convene an expert group to help with screening and/or seek advice from the competent authority. • The environmental and social safeguard policies/frameworks of a funding organisation (e.g. a MDB) may also trigger the need for a SEA or equivalent – whether or not one is formally required by a country’s law/regulation. • In other circumstance (e.g., where there is no legal mandate/requirement for SEA), it may be apparent and agreed that a proposed PPP or proposed major development activities in a geographical area, would benefit from information/recommendations generated through a SEA undertaken on a voluntary basis. • In any of the above circumstances, where it is determined that an SEA is required, the proponent should proceed to Stage 2. • In cases where the SEA is examining the energy transition, screening should also examine how, when and where renewable energy sources will deployed and replace fossil fuel-based power generation, and examine what considerations are in place to ensure sustainability of doing so and that processes are in place to meet just transition requirements.
<p>STAGE 2: PREPARATORY STEPS, ACTIVATION AND SCOPING</p> <p>Preparatory steps (<i>undertaken by the proponent</i>) (elaborated in Box 3.2):</p> <ul style="list-style-type: none"> • Develop SEA Terms of Reference (refer to Annex 2 for an example). • Establish an in-house management group (one or more people) to oversee the SEA process. • Establish an SEA Steering Committee, and/or an Advisory Committee. • Appoint a team of experts to undertake SEA, and to activate the process. <p>Scoping (<i>some elements may be done in parallel; not all elements will be appropriate for all SEAs</i>):</p> <ul style="list-style-type: none"> • Undertake stakeholder mapping/analysis and prepare a stakeholder engagement plan and communication mechanism; • Undertake stakeholder consultations and a scoping workshop – to explain the SEA (reason and process), identify baseline data and PPPs held by stakeholders and to enable consultees to assist in scoping key issue and identifying environmental and social quality objectives (ESQOs); • Analysis of the country’s relevant laws, policies, regulations, strategies, plans and programs (including their objectives and key themes of relevance to the PPP being assessed); • Review of the country’s institutional framework, mandates and responsibilities; • Analysis of the country’s environmental and social safeguards; • Review of relevant literature on the environmental and social baseline; • Identify key sources of data and information and identify data gaps; • Initiate collection of baseline data and new research/field studies (where required); • Identify key environmental and socio-economic issues that the PPP should take into consideration • Decide on the approach required for the particular SEA and appropriate methods to be used; • Identify international conventions, treaties and protocols to which the country is a signatory; • Based on key themes and issues, develop draft environmental and social quality objectives targets and indicators to provide a framework for assessment and monitoring of the PPP; • Start identifying potential alternatives (to PPP or to possible PPP components); • Identify scenarios under which the PPP might be implemented (scenarios can also be used as alternatives during assessment);

- Initiate an institutional survey of all relevant government agencies and other organisations likely to have a role in implementing the strategic environmental and social management plan (SESMP) (functions, roles and responsibilities, and capacities);
- Establish dedicated SEA prospectus;
- Establish SEA website;
- Preparation of scoping report and circulation/disclosure for stakeholder and public comment;
- Subjection of the scoping report to public comment, and
- Update of scoping report in response to comments.

STAGE 3: ASSESSMENT

Assessment steps will need to be designed according to the context, nature of the PPP and other factors; but would usually involve:

- *Initial assessment of agreed alternatives* to PPP or its components (possibly leading to an *interim SEA report* – circulated to stakeholders for comment). The proponent should select a preferred alternative(s) and provide an explanation of how the findings of the initial assessment of alternatives and consultations were considered in its selection.
- *Deeper assessment of preferred alternative(s)* – more focused and detailed - (leading to *SEA port and SESMP* recommending detailed mitigation measures needed to avoid significant adverse effects).

The assessment should involve:

- Continued analysis of available baseline data, filling of data gaps and collection of critical new data from research/field studies;
- Continued stakeholder engagement;
- Identification of potential environment and social risks and impacts (positive and negative; direct and indirect, cumulative, transboundary). This is best done to compare two situations: (a) *risk situation* when no safeguards are applied and no mitigation measures applied; and (b) *mitigated situation* when safeguard and mitigation measures are fully and effectively applied;
- Identification of whether the ESQOs will be likely to be enhanced or impeded by implementing the PPP under consideration;
- Identification of options for enhancing positive impacts and avoiding/minimizing/mitigating negative impacts;
- Preparation of the framework for the SESMP/SESMP.

STAGE 4: REPORTS AND REVIEW

Draft reports

- Preparation of *inception report* (if required) and *scoping report* (during Stage 3);
- Preparation of *first draft SEA report* (with non-technical executive summary) and *ancillary reports* (e.g., reports on special studies);
- In some circumstances, a stand-alone draft *Strategic Environmental and Social Management Plan* (SESMP) may be warranted, and
- Disclosure of the reports on the SESA website or by other means (print copies of Executive Summary etc.).

Review

- *Administrative and technical review* of first draft reports by the proponent and competent authority may be required to ensure compliance with basic requirements.
- Release of the draft reports to key stakeholders for comment and feedback, and organisation of one or more stakeholder workshops to present and discuss the reports.

Finalisation of SEA report and SESMP

- Preparation of final version of SEA report (and SESMP where required).
- Additional review by the proponent, other institutions and civil society stakeholders may be warranted.

Regulatory review

- In some countries, the competent authority may formally review the final SEA documents. For complex PPPs/SEAs, the competent authority may decide to commission an independent review by external experts or a technical advisory committee or independent commission (e.g., where there are likely to be trans-boundary impacts (*this would require agreement/collaboration with other affected countries. Such SEAs would need to be undertaken in collaboration with appropriate agencies in the other affected country, and the review mechanism agreed to at the outset*)).

STAGE 5: DECISION-MAKING ON SEA

- The proponent will make a decision on the acceptability of the SEA report and SESMP/SESMP prepared by consultants. But the competent authority may be required (depending on national legislation/regulations) to make the final decision on the adequacy/acceptability of the SEA/ and SESMP by issuing an approval (with conditions, if necessary).

STAGE 6: MONITORING AND EVALUATION OF PPP

- The SESMP will set out roles and responsible for monitoring and evaluation of the implementation of the PPP. This is likely to involve a range of ministries and organisations and their agreement to undertake monitoring, evaluation and follow-up will be required;
- The competent authority may have a statutory duty to oversee the monitoring and evaluation process.

Arguably, given the scale and speed of the energy transition, SEA (or SEA-type exercises, and complementary/component processes such as spatial planning) are essential for renewable energy roll out and expansion. Government-led SEA for the energy transition is recommended but must be pragmatic and proportionate. 'Full scale' SEA may be an unrealistic expectation in many emerging market countries, not just because it is a lengthy and expensive procedure, but also because of often limited available capacity and resources. Furthermore, there is a small and narrowing window of opportunity for carrying out such strategic assessments before either development proceeds in earnest in any case (potentially unsustainably), or country climate targets/obligations are missed.

A country's SEA law and/or regulations will indicate whether SEA is required for all types of PPP or for specific categories of PPP. Screening is used to determine whether a proposed PPP (or revision of an existing one) falls into one of these categories. In some countries, the proponent of a PPP (usually a line ministry/department) may be required to undertake some initial analysis to determine if there is potential for a PPP to result in significant environmental and social effects which might trigger a formal requirement for an SEA. Screening should be undertaken by the proponent of a PPP.

Where a country has no regulatory mandate for SEA, an SEA-type exercise may still be extremely beneficial – e.g., in terms of how best to meet obligations, targets or goals under international/national obligations (Paris Agreement, Global Biodiversity Framework, Sustainable Development Goals, etc.) or for increasing lender/developer confidence. The energy transition is global and, potentially, countries without an existing legal requirement for SEA could be the ones where the benefits of SEA are greatest in terms of promoting sustainable development. There is a need for pragmatic and scalable approaches to SEA that can be implemented in countries without legislation for SEA, or where it is still emerging.

Lenders' environmental and social safeguard policies/frameworks will also indicate whether an SEA (or equivalent, e.g., SESA) is required and Lenders will usually engage with the relevant government ministry(ies) about initiating the process, and may provide funding for it.

Where national laws or regulations do not specifically prescribe which PPPs require a SEA, then the criteria listed in Box 3.1 can be used to determine whether a SEA would be beneficial. A screening form is provided in Annex 3, based on these criteria. It can be used to document the result of the screening procedure and includes a record of the decision on whether an SEA should or should not be carried out.

Box 3.1: Screening criteria

1. Characteristics of the PPP itself:

- Degree to which the PPP sets a framework for projects and other activities, either with regard to the location, nature, size and operating conditions or by allocating resources.
- Degree to which the PPP influences other policies, plans and programmes including those in a hierarchy.
- Relevance of the PPP for the integration of environmental and socio-economic considerations (and their relationship with economic concerns and drivers), with a view to promoting sustainable development.
- Environmental and social concerns relevant to the PPP.
- Relevance of the PPP for the implementation of national legislation on the natural or human environment (for example, PPPs linked to waste management or water protection) or social conditions.
- Extent to which the proposed PPP is likely to be politically or publicly acceptable or contentious.
- The PPP is unprecedented.

2. Characteristics of the effects and of the area likely to be affected:

- Probability, magnitude, duration, spatial extent (geographical area and size of the population likely to be affected), frequency, uncertainty and reversibility of the effects.
- There are inherent uncertainties and the level of confidence in predicting the effects of the proposed PPP is low.
- There are important information gaps, making it difficult to predict impacts.
- Cumulative nature of the effects, and whether they are likely to be significant (both additive and synergistic effects);
- There are likely to be trans-boundary effects (i.e., the PPP is likely to affect other administrative units, regions or countries).
- Risks to the environment, social conditions or human health (e.g., due to accidents), safety and/or the integrity of social or ecological systems are considered to be high.
- Social and/or ecological systems have low resilience and high vulnerability to disturbance or impact (e.g., poor communities, vulnerable groups or sensitive ecosystems).
- Value and vulnerability of the area likely to be affected due to:
 - Having unique, special, or highly valued natural elements (e.g., threatened biodiversity, critical or sensitive habitats);
 - Protected areas (e.g., nature reserves, heritage sites, Ramsar sites) or areas of recognized local, district, national, or international importance for conservation and biodiversity importance;
 - Areas of unique, special or highly valued cultural or spiritual elements;
 - Existing levels of environmental quality are close to defined limits of acceptable change (i.e., there is a definite risk that limits of acceptable change will be exceeded); or environmental quality standards have been exceeded; or
 - Areas subject to intensive land-use and rapid change.
 - Vulnerable groups that could be affected
- Effects on areas or landscapes that have a recognized national or international protection status.

- The PPP is likely to result in major changes in actions, behaviours, or decisions by individuals, businesses, NGOs, or government that could lead to:
 - Induced development of infrastructure or other changes in urban or rural land use;
 - Loss or degradation of natural habitat or of areas important for nature conservation;
 - Adverse impacts to biodiversity or provision of ecosystem services;
 - Major changes in the pattern of settlement, land occupation, and/or demographics in an area;
 - Major changes in the development or use of technology that could have negative implications for worker, community and individual health and/or safety;
 - Introduction of alien and potentially invasive organisms;
 - Changes in society's consumption of energy and in particular fossil fuels, and therefore, in emissions of pollutants, carbon dioxide and other greenhouse gases;
 - Changes in the rate of society's consumption of and/or demand on natural resources, including water and materials; or
 - Transport, storage, processing of hazardous and non-hazardous waste materials.

3.3 PREPARATORY STEPS AND SCOPING

3.3.1 Understanding and clarifying terms of reference

Unfortunately, in many cases, terms of reference for SEAs remain poorly constructed. It is, therefore, critical that when a proponent seeks to commission consultants (usually through a bidding process), that the prospective/applicant consultants review and fully understand the terms of reference and, if necessary, raise points for clarification with the client.

Because bidding involves competition and the client will normally share all points of clarification with other candidates, the consultant may wish to 'protect' any methodological suggestions they might have and suggest meeting instead with the client, if appointed, to discuss these in detail. In such circumstances, if appointed, the consultants should meet with the client at the earliest opportunity to raise their concerns and suggest appropriate modification to the orientation of the SEA and/or the terms of reference. If the suggested changes make sense and are likely to improve achieving the desired outcomes, a client will normally be happy to change the terms of reference to improve them.

3.3.2 Preparatory tasks

As soon as a decision is made to conduct a SEA, preparatory tasks can be initiated by the proponent of the PPP and the SEA team, even before the official start of the scoping process – although many of them will be completed during scoping. Box 3.2 lists a range of preparatory tasks that can be initiated at this stage.

Box 3.2: Preparatory tasks in SEA

Tasks for the proponent

- Determine whether other institutions (including donors) have carried out or intend to carry out an SEA relevant to the PPP in question and, in such circumstances, seek to engage in a joint process.
- Determine who will engage/fund the consultant team (the lead government agency or development cooperation agency?)
- Develop SEA **Terms of Reference** (refer to Annex 2 for an example) - based on the basic principles of SEA (see section 1.3).
- Appoint team of experts (**consultant team**) to undertake SEA. It is likely that, where national skills and expertise in SEA are limited or lacking, that proponents will need to rely on external (expatriate) consultants to lead the work. But it will be important to include national consultants to ensure the team has access to critical local knowledge and also to build capacity.

- Establish an ***in-house management group*** – one or more individuals with responsibility for managing the SEA process and any expert consultants engaged to conduct the technical aspects of the SEA. A person should be designated as a point of contact for the SEA;
- Consider establishing a multi-stakeholder ***Steering Committee*** (or an Advisory Committee) for the SEA (to offer leadership, a cross-institutional platform, advice and guidance when needed).

Also:

- Confirm sources of funding (if not from proponent's budget);
- Identify the schedule for SEA start and completion;
- Identify opportunities for integrating the SEA process with the PPP development and decision-making process.
- Undertake initial consultations with key government agencies and institutions likely to be involved in the SEA or implementing a SESMP to explain about the SEA and to build understanding and support.

Tasks for the SEA team (usually consultants) – once appointed:

- Clarify with the proponent a definite and realistic time scale for the SEA (start to completion);
- Clarify any concerns regarding the TOR (even suggesting modifications based on professional experience);
- Agree with the proponent on the required documentation (reports to be prepared).
- Define the mechanisms for consultation and engagement of stakeholders and the participation of both the proponent and SEA consultant in the process.

And start clarifying/identifying:

- What stages of the PPP decision-making process should the various aspects of SEA be aligned with? (Need to map out decision-making process to identify 'windows' of opportunity).
- How to integrate SEA findings/outcomes/conclusions into decision-making at points when options and proposed activities are being developed and evaluated.
- What stakeholders should be involved, when, how, and in what capacity? (a draft participation strategy should be completed during scoping and included in the scoping report). This may require consultations with the government where there are any sensitivities regarding stakeholder engagement.
- Whether other assessment processes apply to the PPP? If so, determine the best way to deal with any overlaps between the assessment systems.
- Whether the SEA should be (a) impacts-led (i.e. like EIA, start from an existing baseline and make predictions about how implementing the PPP will change this baseline); or (b) objectives-led (predict whether the strategic action will help to fulfil a range of environmental and social quality objectives), or (ideally) both?
- Whether the SEA report should be topic-based or task-based? (a suggested list of issues to be covered in an SEA report is provided in Annex 4).
- Likely data requirements and potential sources.
- Goals, objectives and decision criteria (e.g., for selecting the preferred alternative to the PPP or components of it) and who should be involved (other agencies, stakeholders, etc.) (this continues during scoping).
- The timing of the EIA regarding stakeholder consultations, disclosure of results and specifying dates for receipt of deliverables.

3.3.3 Issues for scoping

A scoping process should confirm the focus and establish the content of a SEA, the scope of the analyses needed, the stakeholders to be involved, the approach and methods to be used and the relevant criteria for assessment. It provides an opportunity to focus the report on the important issues to maximise its usefulness to the authorities, decision-makers and public. It does not preclude changes in the scope of the report if the need for them becomes apparent at a later stage.

The scoping process should be open and iterative, involving key stakeholders, to:

- Review the context of the SEA;
- Identify alternatives (to the PPP or elements of the PPP) to be assessed in the next stage;
- Identify key environmental and socio-economic issues. It is important to focus the assessment on these key issues that really matter and avoid scoping 'bottom trawling' to cover all possible (minor) concerns – addressing 'everything and the kitchen sink' will overload the SEA and lead to legitimate criticism that it is overpowering and impenetrable.
- Identify and confirm the focus and content of the SEA;
- Identify relevant environmental and social quality objectives (ESQOs), targets, indicators, and decision criteria to use during the subsequent stages to select a preferred alternative – helped by stakeholder interviews, review of the policy and legal framework, situation analysis, and the identified critical issues, and
- Identify baseline and other data requirements and initiate collection; and identify any critical information gaps.

A pragmatic view needs to be taken on how much can be achieved during an SEA, given the available time, resources, and existing knowledge about key issues (is sufficient and reliable baseline data available? is there a need for research or supplementary field work – and how will this be carried out?).

Box 3.3 indicates the tasks to be undertaken during scoping.

Box 3.3: Tasks to undertake during scoping

- **Clarify TOR** with the client (PPP proponent) and agree any adjustments required.
- Clarify PPP objectives.
- Meet with the **Steering Committee** (or Advisory Committee) to present the approach to be followed and seek its assistance to support the scoping work.
- Establish a dedicated **SEA website**.
- **Stakeholder analysis** – map primary stakeholders – those who have a direct interest in the PPP and may be affected by it – and what their main concerns about the environmental and/or social issues are likely to be; and secondary stakeholders – those who have an indirect interest.
- Prepare a stakeholder engagement strategy/action plan (SEP) - setting out who should be involved in the SEA (including agencies that have various decision-making mandates within the spatial boundaries of the PPP and the SEA study area), how and when (identifying their roles and responsibilities and practical arrangements) and to conduct preliminary stakeholder mapping (see section 3.3.6);
- Develop and agree the **methods** to be used;
- Identify **key sources of data and information**; determine what data and studies are already available and what the remaining gaps are.
- Initiate **collection of baseline data** and **new research/field studies** (where required), and determine the **minimum information** needed to carry out SEA scoping effectively, and when this needs to be made available during PPP development (*Note: in some circumstances, where critical information is lacking and requires special studies that may need considerable time to undertake (e.g. to gather seasonal data), this may signal a need to consider deferring the SEA or extending the timeframe*] (see section 3.3.8).
- Start **stakeholder consultations** (including **interviews** with key stakeholders - organizations and individuals) and **stakeholder workshops** – to explain the SEA (reason and process), to identify baseline data and PPPs held by consultees, and for consultees to assist in scoping key issues and identifying SEA objectives. Note: stakeholder consultation should be undertaken throughout the duration of the SEA process.

- **Initial literature review** – (published, unpublished, reports by government or others, grey literature, donor documents, etc.) to identify relevant environmental and socio-economic concerns, information/data and trends.
- **Inventory and review of other PPPs** (to include PPPs related to the PPP being assessed – the target PPP, or that might have an influence on the target PPP, or that might be affected by implementing the target PPP) to document aims, objectives and key themes of relevance to the target PPP (see section 3.3.10 and Annex 5).
- Analyse the **legal, regulatory and governance framework** (laws, decrees, directives, regulations, etc.) – and identify **synergies and conflicts** in their objectives (this may signal where policy revision may be required to achieve PPP and sustainable development objectives).
- Initiate a **review of institutions** that are likely to have a role in implementing the strategic environmental management plan (SESMP), covering mandates, roles, responsibilities and capacity to undertake their functions;
- Identify international conventions, treaties and accords to which the country is a signatory;
- Identify key environmental and socio-economic issues that the PPP should take into consideration, and the main ecosystem services that stakeholders depend upon and in what ways; and screen out issues that are less important at this stage.
- Decide what technical studies/consultations are required to assess the impacts; and identify analytical methods to be used and data needs.
- Based on key themes and issues, develop draft environmental and social quality objectives (ESQOs), targets and indicators to provide a framework for assessment and monitoring of the PPP (see section 3.3.4).
- Build on earlier discussion during the preparatory stage to start identifying reasonable alternatives or scenarios (to the PPP or to possible PPP components). These should be realistic, practicable, and relevant, and should include the ‘status quo’ or ‘do nothing’ option (see section 3.3.7).
- Determine Limits of Acceptable Change (LAC) (see section 3.3.5).
- Clarify the decision-making process for the PPP.
- Identify the relationship between the SEA being undertaken and other SEAs and project EIAs.
- Determine the assessment methodologies to be used (see Annex 6 for an overview of selected analytical and decision-making tools for SEA).
- Preparation of a draft scoping report and circulation/disclosure for stakeholder/public comment.
- Convene a scoping workshop to obtain stakeholder feedback.
- Preparation of final scoping report – updated in response to comments.

3.3.3.1 Identifying and reviewing other PPPs

As indicated in Box 3.3, one of the critical steps in scoping is to identify and review other PPPs that may be relevant to the assessment of the PPP which the SEA focuses on – particularly their aims, objectives, and key themes. The results of this may be presented in a tabular format. Annex 5 provides an example of such a review conducted for the Preliminary SEA of Bhutan’s Road Sector Management Plan (2016). [Note to reviewers: this Bhutan example is there as a place holder. Please suggest (preferably provide) an example relevant to the energy transition]

3.3.4 Setting SEA environmental and social quality objectives (ESQOs)

As discussed in Chapter 1 (section 1.4), an SEA can be impacts-led or objectives-led. A decision needs to be reached which approach is appropriate, or both. Where the SEA involves an objectives-led approach, Environmental and social² quality objectives (ESQOs) should be developed to help to focus the SEA and ensure important issues are not left out in the process. They can provide a framework for the assessment of the PPP and its alternatives, particularly when an objectives-led

² Social objectives may also include health, cultural, aesthetic and other values; and may include economic objectives.

approach is preferred³ or when an impacts-based approach is likely to be problematic (e.g., when there are inadequacies in the availability of baseline data (see section 1.3). In an objectives-led SEA, the assessment determines whether implementation of the PPP will enhance or impede achieving the agreed to environmental and social quality objectives. Consideration of the broad environment and socio-economic categories helps to balance the impact analysis so that issues are not consistently ignored. It may be useful to not only identify objectives but also sub-objectives to assist in the subsequent assessment.

The following processes will help in the development of ESQOs.

- **Clarification of PPP objectives** to assist in derivation of the spatial and temporal scale to be covered in the SEA environmental and socio-economic objectives.
- **Compatibility analysis** to determine if the objectives of the PPP being assessed are in line with the proposed environmental, social, or other objectives, as well as with those in other government PPPs or commitments to international conventions, regional agreements, etc, or with the UN Sustainable Development Goals (SDGs). This may involve careful examination of the policy and legal framework.
- Relations between the proposed PPP's objectives and the relevant ESQOs may be easily presented through simple matrices that may provide the basic description of impacts. An example of a simple compatibility matrix is provided in Annex 7. Various conflicts and synergies may be also easily visualized using, for example, simple symbols or colours that indicate:
 - Absolute conflict/constraint (red),
 - Considerable conflict/constraints (orange),
 - Considerable positive impact or synergy (light green),
 - Full synergy – the proposed objectives resolves an existing environmental or sustainability problem (dark green),
 - Impact is uncertain (blue),
 - Impact is insignificant (no color).
- Conflicts need to be resolved or specific recommendations given on which areas may require resolution to ensure that the objectives are mutually supportive.
- Stakeholder consultation with relevant lead agencies and the public to determine how they will be affected – to ensure that their concerns are included in setting ESQOs. It will also assist in prioritisation of boundaries, issues, or alternatives to consider as well as outcomes. Stakeholder comments may lead to development of other pertinent social and environmental objectives.
- Obtain consensus from stakeholders.

Some examples of ESQOs and indicators are shown in Table 3.2. More are provided in Annex 8.

³ An objectives-led approach to SEA may be preferable when the focus is complex and at a very high level covering multiple PPPs, thus making it difficult to separate impacts likely to arise under different PPPs.

Table 3.2: Some example SEA environmental and socio-economic quality objectives and indicators

SEA topics / key issues	Possible environmental and social quality objectives	Possible Indicators (ways of quantifying the baseline, prediction, monitoring)
Biodiversity, fauna and flora	1. Avoid damage to designated wildlife and ecological sites and protected species	1. Reported levels of damage to designated sites/species
Population and human health	2. Create conditions to improve health and reduce health inequalities	3. Life expectancy 4. Hospital admissions
Water and soil	5. Limit water pollution to levels that do not damage natural systems	6. Quality (biology and chemistry) of rivers, canals and freshwater bodies and of soil
Air	7. Limit air pollution to levels that do not damage natural systems	8. Number of days of air pollution 9. Levels of key air pollutants / by sector and per capita
Climate factors	10. Reduce greenhouse gas emissions	11. Carbon dioxide (CO ₂) emissions
Cultural heritage and landscape	12. Preserve historic buildings, archaeological sites and other culturally important features	13. Percentage of historic buildings and archaeological sites 'at risk'

Indicators are useful to communicate, in a simple way, complex information for decision-making and management. In SEA, indicators help to:

- Describe current levels and trends in environmental and social quality;
- Predict and assess impacts;
- Evaluate progress towards achieving sustainability objectives;
- Relate key strategic issues and Limits of Acceptable Change (LAC) and/or thresholds to the SEA study;
- Enable adaptive and corrective management during PPP implementation;
- Establish criteria for an ongoing monitoring framework.

3.3.5 Limits of acceptable change

Scoping should also determine Limits of Acceptable Change (LAC) or thresholds to inform the evaluation of the potential significant environmental and social effects of a PPP, and/or to determine appropriate indicators. A key principle of SEA is that it sets the criteria for levels of environmental or social quality and identifies what change is considered acceptable.

LAC can be derived from various sources, such as existing international or national standards, legislation, guidelines, targets for environmental quality in management plans or programmes, and State of the Environment (SoE) reports. If there are no appropriate LAC, they can be developed during the SEA through stakeholder engagement, inputs of specialists, and the findings of the situation assessment. LAC and thresholds may also be identified or clarified during the subsequent detailed-assessment stage.

3.3.6 Stakeholder identification and participation

SEA is a participatory process that allows lead agencies, civil society, the private sector, and other relevant stakeholders (to be identified through stakeholder analysis - see section 3.7.5.2) that will affect or be affected by the proposed PPP (or PPP being revised) to contribute to its development/revision and make inputs to strategic decision-making (see also section 1.9).

Stakeholders should be involved throughout all stages of the SEA process. Even during screening, there can be some limited / specific stakeholder engagement (e.g. with statutory environmental agencies).

Relevant regional and/or country representatives should also be included when trans-boundary impacts are anticipated.

3.3.6.1 Minimum requirements for participation

At an absolute minimum, the PPP proponent must meet with the main stakeholders to inform them about the PPP and the SEA being undertaken and to solicit their views about it. Understanding the decision-making authority of different stakeholders, and how they interact with each other and the environment and socio-economic conditions, is essential for good analysis and process management.

PPPs concerned with the energy transition are likely to affect all inhabitants in a country. But in many low and middle income countries where public consultation is a rather new concept/practice, it is almost impossible to give all inhabitants the opportunity to be engaged in the process. Therefore, the option that CSOs represent the voice of the people is a reasonable and acceptable approach. In any case, there should be discussions between the proponent and the SEA consultant as to how consultation will be undertaken, to whom should consultation take place (identification of SEA stakeholders), what preparations will be needed before, during and after consultation and how the results of consultation should be disclosed.

3.3.6.2 Stakeholder analysis, participation strategy and communication plan

A *stakeholder mapping analysis* should be undertaken to identify stakeholders, to determine their potential interest and influence and as a basis for preparing a draft *participation strategy (action plan) and communication plan*. We use a number of terms in this chapter – should we stick with *stakeholder engagement plan* – this is the most common form.

The methods adopted to engage stakeholders will need to be determined according to their purpose. Box 3.4 provides a typology of various types of possible participation (with increasing involvement) in an SEA process.

Box 3.4: Typology of participation in an SEA process:

1. Participants listening or reading only (e.g., receiving information from the SEA team, a government PR campaign or open database).
2. Participants listening and giving information (e.g., through public meetings, media activities, "hot-lines").
3. Participants being consulted (e.g., through workshops, focus groups and meetings held to discuss the SEA and PPP).
4. Participation in analysis and agenda-setting (e.g., through multistakeholder groups, round tables).
5. Participation in reaching consensus on the main PPP elements (e.g. through national/regional round tables, multi-stakeholder committees, and conflict mediation).
6. Participants involved in decision-making on the PPP or its components.

At each level, participation may be narrow (few actors); or broad (covering all major groups as well as government).

At each level, participation may be narrow (few actors) or broad (covering all major stakeholder groups as well as government).

Source: Adapted from: Bass, Dalal-Clayton and Pretty (1995)

Stakeholder scoping meetings should help to determine and agree the scope or focus of the SEA and help improve (as needed) the draft participation/engagement strategy developed during the preparatory stage to ensure that it is appropriate and workable/acceptable. Active public engagement and stakeholder involvement should take place from the scoping stage onwards, including during the review of the draft SEA and SESMP reports and even during PPP monitoring (Table 3.1). A variety of meeting methods should be considered to ensure that all stakeholders are reached and involved including “town hall” meetings, workshops, focus groups, key informant interviews (one-on-one or small groups), surveys, social media etc.

Generally, SEAs draw the attention of ‘public representatives’ rather than individuals. If the public has limited experience with being engaged at the strategic level, it is critical to include an *education component* in the public engagement process – to inform stakeholders what SEA is about and its objectives and to raise awareness of the ways in which they can make their views known and contribute. It is important to identify and engage those stakeholders who may be the most exposed to environmental degradation and adverse social change as a result of the PPP. In general, environmental, and social pressures tend to affect the poor and vulnerable populations more significantly. Women, men and youth, and indigenous peoples’ groups should be included in this public-engagement process to draw on all relevant knowledge and ensure their meaningful inclusion. Culturally sensitive consultation norms should be taken into account (e.g., language, representation, world views etc.).

As mentioned above, the SEA process relies on effective and sustained public engagement. PPP decisions are embedded in the political domain and involve political dynamics – including the engagement of the stakeholders who are likely to be most affected or who are most vulnerable. One challenge is to ensure that public engagement is meaningful, transparent, and continuous and not just a case of providing stakeholders with detailed, comprehensive information. The engagement process must provide an *opportunity to influence decisions* over the life of the SEA process.

Stakeholders are comprised of many interest groups, often with conflicting objectives, e.g., gender differences - with different rights and responsibilities, educated and uneducated people, young people and elders, indigenous groups, different economic and cultural groups. The role of the public consultation in SEA should be to provide a mechanism for identifying and trying to *solve differing views in a constructive and meaningful way*.

Stakeholder groups identified as most affected by a given PPP may be politically and/or socially marginalized and may have little or no experience in providing input to decision-making. Public consultation processes will have to identify the best way to ensure that the socially marginalized groups (e.g., the poor, minority ethnic groups, itinerant/migrant groups, other vulnerable groups) can participate effectively and can have their viewpoints given proper consideration. This may involve reaching out to stakeholders who do not have access to the internet, lack access to public libraries, speak a different language, are illiterate; have cultural differences, or other characteristics that need to be considered when planning for their engagement. In some cases, special means of engagement may be required e.g women of the SEA team meeting with a women’s group or use of an indigenous led facilitator when meeting with indigenous groups.

Authorities which, because of their environmental and social responsibilities, are likely to be concerned by the effects of implementing the PPP must be consulted on the scope and level of detail of the information to be included in the SEA Report.

Depending on the nature of the political institutions and their internal functions, there will be a need to integrate the SEA process with the public engagement process as a whole and to adopt other approaches where needed. Of note, public engagement needs to be sustained, structured, and coordinated with all phases of the PPP formulation and implementation – emphasizing equally the

positive contributions and harmful effects. More problematic issues should involve more extensive consultation.

3.3.7 Identifying alternatives to a PPP or elements of a PPP and scenarios

A key principle of SEA is to consider alternatives to a PPP, or elements of a PPP. This provides an means to identify and explore different ways (different options, choices, or courses of action) to deliver a PPP's objectives while addressing environmental and socio-economic issues.⁴ The timely consideration of alternatives in SEA and the planning process provides an opportunity to identify and explore ways of accommodating the future development needs of an area or sector, taking into account the intrinsic environmental and socio-economic conditions⁵. Alternatives should be realistic, reasonable, viable and implementable alternatives that promote environmental and socio-economic benefits while fulfilling a PPP's objectives.

Identifying alternatives is likely to be easier where the SEA is focused on a specific PPP (e.g., for hydropower, solar or wind generation). However, where the SEA is at a broader or more generic level (e.g., for the wide range of energy options likely to be considered for the energy transition), considering PPP-specific alternatives is likely to be impossible. In such circumstances, it may be preferred to assess the impacts of implementing transition changes under different scenarios (see below).

As already indicated in Section 3.3.1, a key requirement in scoping is to start identifying alternatives to the PPP (or elements of the PPP) to be assessed during the SEA. Considering such alternatives during PPP development is the most effective way to "shape" the outcome of a development process.

SEA has the most influence during this PPP development stage because a comparative evaluation of the need or demand and an impact evaluation of a broad range of alternatives can be conducted before any irrevocable decisions are made. Such early consideration of alternatives can reduce the need for remedial measures at later stages in the development planning process - particularly when alternatives become increasingly constrained when moving 'downstream' in that process, ultimately reaching the project level.

A range of sources can trigger how to identify alternatives. These include:

- Analysis of strategic policy or action objectives, the policy context, environmental and social quality objectives, and existing and predicted environmental, social or sustainability problems;
- Consideration of hierarchy alternatives (Box 3.5), and
- Suggestions raised by key stakeholders and by planners or contained in previous SEAs or other assessments.

The alternatives assessed in the SEA could represent different ways of delivering each target.

The early (initial) consideration and assessment of alternatives can reduce the need for remedial measures at later stages in the development-planning process, given that alternatives become increasingly constrained as planning moves from policy- to plan- to programme-level, ultimately arriving at the project-level. This concept is usually referred to as the hierarchy of alternatives, illustrated in Box 3.5.

⁴ González et al. (2015)

⁵ Gonzalez *et al.* (2015)

Box 3.5: Hierarchy of alternatives

Need or demand: is it necessary? (often relevant to policy-level)

- Are the developments envisaged in the PPP necessary?
- Can the need be met without implementing the PPP and without any new developments or infrastructure, etc.?
- Can the developments envisaged in the PPP be avoided?
- Are there any realistic opportunities for managing development demand, e.g., through regulatory, economic or administrative tools or other measures that promote behavioural changes?

Mode or process: how should it be done? (often relevant to plan-level)

- Are there technologies, methods or processes that can meet the need with less environmental damage or social change than 'obvious' or traditional methods?
- Has best-available technology been considered?

Location and Timing: where should it go?(often relevant to programme-level)

- What alternative locations could be considered?
- Timing and implementation (when and what-to-do in detail? (usually considered by project-level EIA):
- When and in what sequence should development be carried out?
- What details matter and what requirements should be formulated to ensure effective implementation?

Alternatives are formulated bearing in mind the situation assessment and the analysis of opportunities and constraints. Generally, expert judgment, authority requirements and key stakeholder inputs are combined to formulate and agree reasonable alternatives.

The Steering Committee (or Advisory Committee) should confirm which alternatives should be initially assessed by the SEA, and subsequently determine which is/are the preferred alternative(s) for deeper assessment.

Scenarios (existing or developed for the SEA) can be used to examine how implementation of the energy transition might unfold different under different potential futures. These scenarios could represent, for example, different rates for the energy transition and replacement by renewables (e.g. high, medium, low) or different time periods (e.g., near-term, medium-term, longer term). Scenarios will be influenced by key drivers of change (see Box 3.7). They can also be considered as alternatives (see Annex 9 on scenario development).

Box 3.6 presents examples of scenarios used for a SESA undertaken for the energy transition in Indonesia.

Box 3.6: Scenarios for the energy transition in Indonesia

In November 2022, the Government of Indonesia (GoI), the Asian Development Bank (ADB) and key development partners signed a Memorandum of Understanding (MOU) towards the retirement of coal fired power plants (CFPPs), a reduction of CO₂ emissions and a transition to renewable power under ADBs' Energy Transition Mechanism (ETM).

A Strategic Environmental and Social Assessment is being prepared to assess the environmental and social risks, impacts and opportunities of the energy transition in Indonesia. To do this, three scenarios were developed:

Scenario 1: Business as Usual considers continued fossil fuel (coal) energy production, no early retirement of CFPPs and increased use of natural gas. In this scenario there is a slight/natural increase in renewable energy generation.

Scenario 2: Moderate Energy Transition demonstrates a slight retirement of CFPPs by 2060 where there is no new growth in fossil fuel usage and renewable energy responds to any new additional energy demand.

Scenario 3: Rapid Energy Transition represents a total retirement of CFPPs by 2060 where a full transition to renewable energy production meets or exceeds future energy demand.

Source: Ciera Group and PT Hatfield Indonesia. 2023.

Where scenarios are used/developed, these should be agreed by the Steering Committee or Advisory Committee.

3.3.8 Identifying baseline information requirements and initiating collection

SEA needs to be based on a thorough understanding of the potentially affected environment and social systems. So, a critical step for the SEA team is to identify and acquire critical baseline information, drawing from all relevant sources. This must involve more than a mere inventory (e.g., listing flora, fauna, landscape, urban environments, ethnological or cultural groups). Particular attention should be paid to important ecological systems and services, their resilience and vulnerability, and significance for human well-being. Existing environmental and social protection measures and /or objectives set out in international, regional, national, and local PPPs should also be reviewed. Scoping will be very important in identifying what issues are important and to focus what data collection is required.

Baseline data should cover the issues listed in Box 3.7.

Box 3.7: Required baseline information

Note: Not all of the listed information will be 'required' in all cases - scoping key issues should be used to focus on what is relevant

Biophysical

- Air quality, with particular focus on the occurrence of pollutants in the air;
- Climate, including future climatic change scenarios for the region and country, and vulnerability to climate change;
- Noise and vibration;
- Topography, soils, geology;
- Risks of natural disasters, particularly earthquakes, landslides and flooding;
- Surface and groundwater resources, quality and quantity and chemical characteristics;
- Ecosystem services, especially wetlands (riverine areas, lakes, etc.) and forest areas, nature conservation and protected ecosystems, and biological corridors;
- Biodiversity (flora and fauna), rare and threatened/endangered species, endemic species and habitats), species of commercial importance, invasive species (terrestrial, aquatic, marine);
- Land use and use of natural resources.

Socio-economic conditions and human health

- Population dynamics;
- Un/employment, poverty, skills, livelihood and education profile;
- Sanitation issues;
- Economic profile of the country, including analysis of key economic drivers (e.g. tourism, hydropower, lifestyle investments, recreation) and associated multipliers and spin-offs;
- Human health profile, especially communicable (e.g. HIV /AIDS, COVID) and non-communicable diseases (e.g. diabetes, cancer prevalence);
- Archaeology and cultural heritage;
- Recreational aspects;
- Social-economic aspects;
- Land use, transportation, infrastructure, agricultural development and tourism.

Physical infrastructure and social facilities and services

- Distribution of current and planned energy infrastructure (including planned renewable energy facilities, transmission lines and grid analysis);
- Distribution of urban centres, types of current and expected future settlement development (e.g., municipal changes/expansion), population dynamics, land and property values, land use and availability;
- Water supply and use (city/towns, other settlements, agriculture, etc.) and likely future scenarios for demand and use;
- Dams (hydropower, storage);
- Transport, traffic, power lines, pipelines and other related infrastructure;
- Industrial infrastructure;
- Current and planned water and waste management and supply infrastructure (including assessment of state of infrastructure); and
- Current and planned schools, hospitals, clinics, recreation, religious, cultural and retail facilities.

Governance and decision-making

- Institutions, structures and decision-making systems relevant to energy management and ETM implementation (e.g., regarding the allocation of permits and associated compliance monitoring for large projects) and for those institutions at a regional or international level that may influence ETM implementation.

3.3.9 Sensitivity mapping

An SEA can be supported by a robust and data-led spatial planning exercise, involving identification of technical, environmental, and social constraints to implementing a PPP. A core component of such planning is sensitivity mapping, or what is also called the identification of “go no-go zones” (see Box 3.8) to identify areas where renewable energy developments should be avoided due to their sensitivity for biodiversity and social receptors. Such mapping can be undertaken relatively rapidly with existing data (desk-based) or can be a more intensive process such as full scale Marine Spatial Planning⁶. Sensitivity maps are a powerful tool for protecting nature and vulnerable communities whilst facilitating the transition to renewable energy to reduce global emissions.

Box 3.8: Sensitivity mapping

Sensitivity mapping provides a visual representation of risks, and assets which may be exposed to them. Multiple environmental sensitivity mapping approaches exist, with methods and uses varying based on stakeholders’ values, drivers of change, data availability, and the technical capacity of the users. Sensitivity mapping is often carried out using geographic information systems (GIS) technology. The amount and/or type of data used to produce a sensitivity map will affect and limit its potential uses. Nevertheless, environmental sensitivity mapping can have a wide variety of applications. These include but are not limited to:

- Helping decision-makers understand where protection of valuable environmental assets is needed, which could aid the development of protected area networks;
- Informing governmental and private sector spatial planning at the project level, targeting activities to the locations where they will have the lowest impact;
- Supporting all stages of impact management, including prevention, mitigation, preparedness, operations, relief, recovery and integration of lessons learned;
- Aiding situational awareness and response strategy development for responders and decision makers during an incident.

Source: [Environmental Sensitivity Mapping definition | Biodiversity A-Z](#)

⁶ See: mspglobal2030.org

During scoping, sensitivity mapping of areas vulnerable to environmental and social pressures should be initiated by evaluating and interpreting the environmental and social baseline information, taking account of drivers of change (Box 3.9). This will help to identify the environmental and socio-economic opportunities and risks/constraints in relation to the proposed PPP. The baseline information also provides a benchmark against which alternatives/scenarios can be evaluated.

Box 3.9: Analysing baseline information and drivers of change

When analysing the current and potential future environmental and socio-economic conditions, it is important to reflect on how drivers of environmental and socio-economic change (such as urbanization, climate change and globalisation) will affect ecosystem functions and services, as well as human well-being and economic development. The sources of risk stemming from the environment and social activity as well as the risks to the environment and socio-economic fabric should be examined. For example, degraded ecosystems may in the long run lead to a lack of clean water or reduced soil fertility which, in turn, will affect human health and livelihoods. The links between livelihoods and specific ecosystem functions should be addressed, e.g., how is food produced and housing constructed, how finite are available resources, how do social power relations influence the use of livelihoods by different gender groups? How does poverty affect access to services, education, employment, and health? Consideration should be given to how PPP implementation as well as disasters may affect ecosystem functions and have an impact on health and livelihoods.

If placed in poorly chosen areas, renewable energy developments can end up have serious consequences for ecosystems or local communities. For example, offshore wind farms can cause considerable harm to fragile marine ecosystems, with seabirds being particularly sensitive. Whilst not replacing site-specific assessments of environmental impacts, sensitivity maps can dramatically reduce conflicts with nature by identifying areas where the negative impacts of offshore wind farms and grid infrastructure will be higher or lower.

Figure 3.2 shows a map depicting pressure and sensitivity in the Chobe Forest Reserve, Botswana (see Annex 18 for further details of the sensitivity mapping process).

Such information allows the selection of locations for development that minimize harm to nature and communities. It can reduce uncertainty, save time and eventually costs for developers. Sensitivity maps can help to speed up existing planning processes, inform and corroborate EIAs for projects once locations are selected for development, and avoid conflicts between stakeholders, which can lead to significant delays.

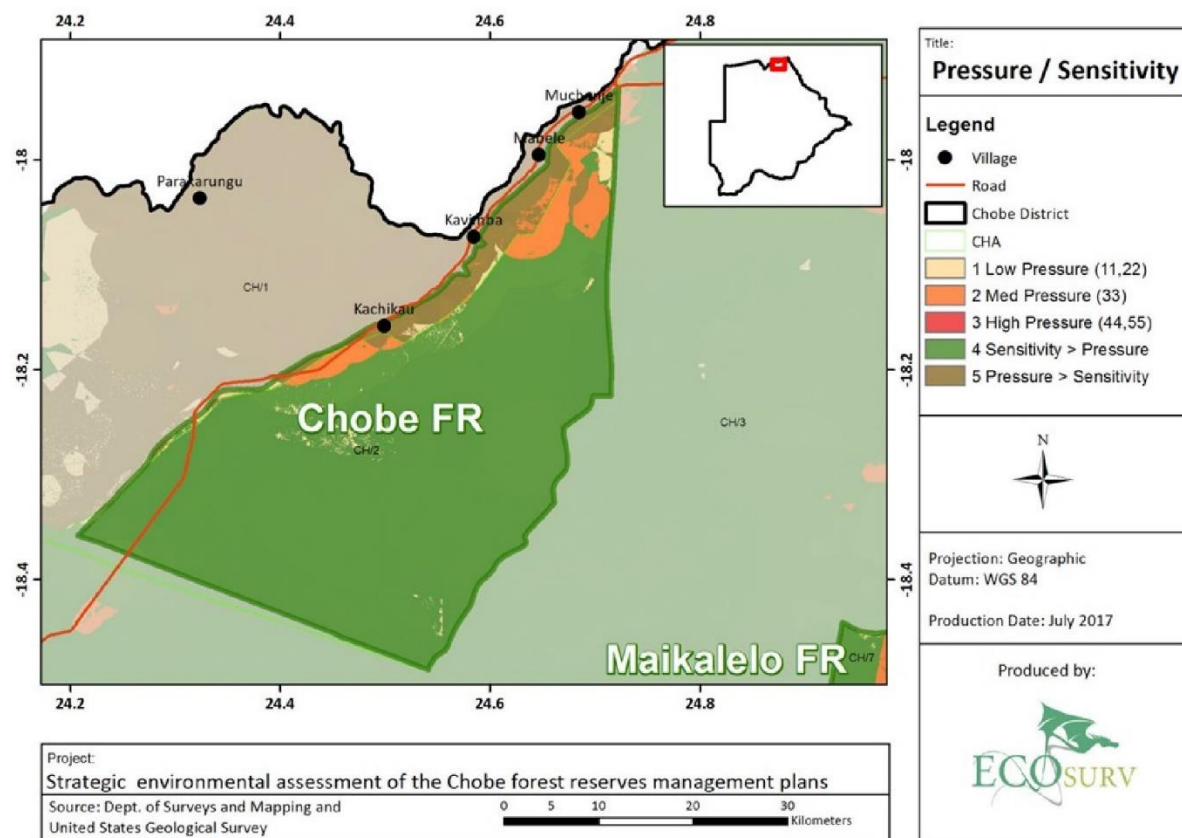
The World Bank, via the Energy Sector Management Assistance Program ([ESMAP](#)), is currently developing guidance for environmental and social sensitivity mapping to support early spatial planning for offshore wind development in emerging market contexts, which is designed to be complementary (or a precursor to) full scale spatial planning processes like marine spatial planning or SEA.

Existing guidance for sensitivity mapping include Birdlife's AVISTEP (Avian Sensitivity Tool for Energy Planning)⁷, and the EU Wildlife Sensitivity Mapping Manual⁸.

⁷ [AviStep- BirdLife International](#)

⁸ [The wildlife sensitivity mapping manual - Publications Office of the EU \(europa.eu\)](#)

Figure 3.2: Map showing pressure and sensitivity in the Chobe Forest Reserve, Botswana
Source: Ecosurv (2018)



Sensitivity mapping and analysis will also enable the SEA team to assess the adequacy and reliability of available information/data and identify whether additional information may be required. In some cases, it may be necessary to commission specialist studies on subjects/themes of particular importance to the PPP/SEA. Where vital information is lacking or inadequate, there may be a need to undertake or commission new research, e.g., where data is required on annual or seasonal trends, or from other jurisdictions (such as adjacent countries in the case of an SEA of a PPP with cross-border implications).

The sensitivity mapping and analysis should be informed by the scoping process and, in turn, help to inform it.

3.3.10 Consistency analysis of PPPs and legal instruments

Box 3.3 indicates the need to make an inventory of and review (a) all relevant PPPs that might be related to the PPP being assessed (the target PPP) or that might have influence on or be affected by the target PPP, and (b) legal and regulatory instruments (laws, decrees, directives, regulations, etc.). Analysis should be undertaken of such PPPs and legal instruments to check their consistency with each other and with the target PPP. This should include identifying synergies, overlaps and antagonisms (particularly in terms of their environmental and social objectives). Such analysis will help:

- To identify where the target PPP and candidate environmental and social quality objectives to be used in the SEA might conflict with other instruments; or where there is potential to generate synergies, enhanced benefits and win-win outcomes;
- To increase the efficiency of the new/ revised target PPP;
- To identify where policy reform or modification of legal instruments might be necessary to ensure alignment to foster progress towards sustainable development.

Analysis can be summarised in a comparative matrix format. Table 3.3 provides an example from Nepal.

3.3.11 Submission and review of scoping report

A *Scoping Report* should be prepared incorporating (as an annex) the terms of reference as finally agreed by the proponent. It should indicate how the scoping was conducted and cover the issues listed in Box 3.3.

The proponent should circulate the draft scoping report to key stakeholders (including the competent authority) for review and make it available for public comments. A workshop may be considered to discuss the scoping report and obtain feedback from participants. The scoping report should also be posted on the SEA website, if developed, to obtain additional feedback. Other forms of social media may also be used.

Annex 10, Section 1, *Scoping (Consolidated Checklist for the Quality Assurance, Review, and Performance Evaluation of a Comprehensive SEA)* can be used to review the scoping process and scoping report. The checklist should be included in the scoping report as annex so that a check can be made by interested parties to determine that the scoping has been conducted thoroughly.

3.4 THE MAIN ASSESSMENT

3.4.1 Introduction

This stage is the heart of the SEA process and involves an assessment of the likely risks and impacts of implementing the PPP and its alternatives; or of implementation of energy transition options under different scenarios. Impacts may be positive or negative, direct, or indirect, cumulative, or transboundary. Various methods (analytical tools) can be used, as described in Annex 6.

The baseline trend and situation analysis (Section 3.3.9) initiated during scoping (see section 3.3.7) should be completed. One of the approaches available for this is trend analysis to examine changes over time - without and with the proposed PPP. See Annex 11 for more details on trend analysis. It provides fictional examples of the assessment of impacts of past and future environmental and social trends as influenced by the actions proposed in a PPP - for terrestrial biodiversity.

Where a SEA is concerned with a single PPP (new or being revised), and where it has been agreed to consider different alternatives to the particular PPP, the main assessment should be undertaken in two main stages:

- **Initial assessment of the alternatives** to the target PPP or its components (leading to **initial SEA report** (if specified as required by the TOR). This report should be circulated to stakeholders for comment and then selection of a preferred alternative(s) should be confirmed by the proponent, taking account of the views of the Steering Committee (or Advisory Committee). The proponent should provide an explanation of how the findings of the initial assessment of alternatives and consultations were considered in deciding on the preferred alternative(s). and
- **Deeper assessment of preferred alternative(s)** – more focused and detailed (leading to an SEA report).

In some circumstance, an SEA may focus on multiple PPPs. In such circumstance, a different approach should be designed, tailored to the specific needs of the SEA. An example is a SEA conducted for the SW Region of Bangladesh for Conserving the Outstanding Universal Value of the Sundarbans (which address 89 separate PPPs across 28 sectors and key themes⁹). In this case, the SEA involved: (a) preliminary assessment of all 89 PPPs (using simple scoring: high, medium, low potential impacts); (b) initial assessment of the impacts of implementing this suite of PPPs under three scenarios (alternatives) – high, medium, and low growth; followed by (c) deeper assessment of

⁹ CEGIS/Integra (2021)

Table 3.3: Comparison laws, policies, plans, and strategies relevant to Nepal's REDD+ strategy

Laws/Policies/Plans	Climate Change Policy, 2011	Forest Act 1993	Hydropower Development Policy, 2001	Water Resource Act 1992	Electricity Act 1992	Leasehold Forestry Policy 2002	Local Self-Governance Act, 1999	Mines and Minerals Act, 1985	National Parks and Wildlife Conservation Act 1973	Public Road Act, 1974	Revised Forestry Sector Policy, 2000	Soil and Watershed Conservation Act 1982	Nepal Biodiversity Strategy, 2002	Water Resources Strategy, 2002
Climate Change Policy, 2011		O	N	N	N	N	N	N	N	N	N	N	O	O
Forest Act 1993			C	C	C	O	C	C	C	C	O	O	O	C
Hydropower Development Policy, 2001				O	O	N	C	N	C	N	C	N	N	O
Water Resource Act 1992					N	N	N	N	C	N	N	N	N	O
Electricity Act, 1992						N	N	N	C	N	C	N	O	O
Leasehold Forestry Policy 2002							C	C	O	C	O	N	O	N
Local Self-Governance Act, 1999								C	C	N	N	N	O	N
Mines and Minerals Act, 1985									C	N	C	C	C	N
National Parks and Wildlife Conservation Act 1973										C	O	O	O	C
Public Road Act, 1974											C	C	N	N
Revised Forestry Sector Policy, 2000												O	O	N
Soil and Watershed Conservation Act 1982													O	C
Nepal Biodiversity Strategy, 2002														N
Water Resources Strategy, 2002														

Source: ICEM/IIED/SchEMS, 2014

Notes:

1. O- Overlaps; C- direct contraction; N- neutral
2. The report provides extensive footnotes detailing the conflicts

the high growth scenario (the government's primary economic development policy) on a key sector basis.

3.4.2 Assessment of a proposed PPP and scenarios/alternatives to a PPP or its components

Where the SEA is concerned with a specific PPP (e.g. for solar power), the initial step should be to assess the likely environmental and socio-economic risks and impacts of the agreed alternatives to the PPP (or its components), including the zero alternative (the 'do nothing' 'business-as-usual' or 'without the PPP' alternative – which implies the continued use of fossil energy systems and all of the impacts associated with these). The complexity of the assessment can be greatly reduced if there is sufficient detail to identify the significant impacts.

The full spectrum of potential effects must be considered, including positive and negative, direct, and indirect, cumulative, and transboundary environmental and social impacts. Such impacts can result from individually minor but collectively significant actions taking place over a period when implementing the PPP (see section 3.4.5. for discussion of cumulative effects). In addition, the impacts should be considered over time and spatial scale (e.g., short-, medium- and long-term). Permanent effects at local, national, regional, or international scales should be identified. The comparative evaluation of alternatives should highlight potential irreversible effects or irreplaceable loss of natural capital, as well as risks to social and ecological systems.

An initial SEA report on the assessment of the alternatives (if an initial report is particularly specified as required in the TOR) should set out the results of the assessment of the alternatives and should be circulated to key stakeholders for review and made available for public comment. Based on the interim SEA report and comments received, agreement should be reached on the preferred alternative(s). This/these should then be subjected to fuller (deeper) assessment in the next stage.

3.4.3 Assessment of the preferred alternative and scenarios

Achieving agreement on a preferred alternative(s) for the PPP or component of the PPP – based on consideration of the environmental and socio-economic impacts associated with the different alternatives, marks a significant interim achievement for the SEA. It demonstrates how an integrated approach' to SEA, as illustrated in Figure 1.2, can achieve a beneficial outcome and influence decision-making concerning the PPP.

The next step is to continue and deepen the level of assessment, now focusing on the agreed preferred alternative. This will lead to the preparation of a *draft SEA report*.

The assessment should involve a more in-depth examination of the full range of potential effects (positive and negative), including, direct, indirect, and cumulative effects, and their nature over time and spatial scale. The impacts of the preferred alternative should also be addressed under different relevant scenarios under which the PPP or suite of energy transition changes would be implemented (see Annex 9) as well as any permanent effects at local, national, regional, or international scales.

3.4.4 Conducting the assessment

There is a wide variety of tools that can be applied for impact assessment. Common tools are listed in Table 3.4. These and others are described in Annexes 6 and 12 (with additional information in Annex 9 on scenario development). The most suitable method depends on the approach adopted (whether impacts-led or objective-led, or both) and the SEA team members' specialized competence in the analytical subject area, professional experience and judgment.

Both the initial assessment of alternatives and the deeper assessment of the preferred alternative(s) should identify those components of the PPP (or its alternatives) which may have significant effects on environmental, social and economic trends and objectives.

The assessments may focus on the overall PPP or on policy components. In some circumstance, assessment may be required for clusters of proposed developments (including projects) that might

arise when a PPP is implemented, or even for an individual activity/mega-project (e.g. if it covers a large area and is likely to have widespread and significant impacts).

The assessment should address:

- The character of the risks/impacts (what exactly causes the risks/impacts or assumptions for the predictions);
- The opportunities and the positive impacts or benefits that may arise from PPP implementation;
- Probability and key uncertainties (Box 3.10). Uncertainties must be properly acknowledged and handled to caveat the SEA conclusions and recommendations, and subsequent decisions;
- Geographic scale - directly and indirectly affected geographic areas that will become of specific concern;
- Frequency, duration, and reversibility, and
- Key concerns associated with the impacts.

If symbols are used to facilitate summary and easy reading of the results of the assessments, they should be accompanied with summary descriptive text, to ensure clarity.

Table 3.4: Common assessment tools available to SEA

Tools for predicting environmental and socio-economic effects/impacts	Tools for analysing and comparing options/alternatives
<ul style="list-style-type: none"> • Carrying capacity analysis • Checklists • Delphi technique • Ecological/environmental footprint analysis • Expert judgement* • Land use partitioning analysis • Mapping transmission channels • Matrices* • Modelling/forecasting* • Network analysis and linkage/flow diagrams* • Participatory assessment • Quality of life assessment • Indicators, multi-metric indices* • Scenario analysis* • Significance thresholds • Social and economic analysis/surveys • Spatial analysis*, e.g. GIS-based analysis (including overlays, capacity/habitat analysis) • SWOT (strengths, weaknesses, opportunities, threats) analysis • Trends analysis/extrapolation 	<ul style="list-style-type: none"> • Compatibility appraisal • Cost-benefit analysis • Least cost analysis • Impact matrices • Multi-criteria analysis • Opinion surveys • Policy impact matrix • Risk analysis/assessment • Modelling • Scenario analysis • Vulnerability analysis

* Tools often used to assess cumulative impacts
 Note: See annexes 6 and 12 for descriptions of methods

Box 3.10: Role of uncertainties in the SEA

Each SEA process is naturally constrained by numerous uncertainties. These may be caused either by the lack of data (e.g., baseline trends in the affected environment, about scales or locations of proposed developments, etc.) or by the built-in limitations in analytical approaches and tools used in the SEA. It is important to ensure that all key uncertainties that inevitably occur in the SEA process are properly understood and acknowledged.

Where SEA is performed ex ante, it is clearly focusing on predictions ahead of implementation - a key source of uncertainty.

A capability to explain uncertainties has always been a sign of an advanced professionalism and solid judgment. Well outlined uncertainties may become an excellent stimulus for both professional and public debate which may in turn provide further inputs into the assessment.

The initial and full SEA reports must therefore document any uncertainties or limitations in the SEA. SEA experts should not be afraid to acknowledge such limitations – on the contrary, a proper acknowledgement of uncertainties increases the quality and credibility of the entire SEA.

Source: MONRE (2008)

If the PPP includes proposals for individual projects that will require EIA, the SEA should provide suggestions on the specific scope and focus of such EIAs (e.g., recommending specific issues that should be assessed).

3.4.5 Direct, indirect, cumulative, and transboundary impacts

Potential positive and negative environmental and socio-economic impacts need to be identified which may fall into different categories, including:

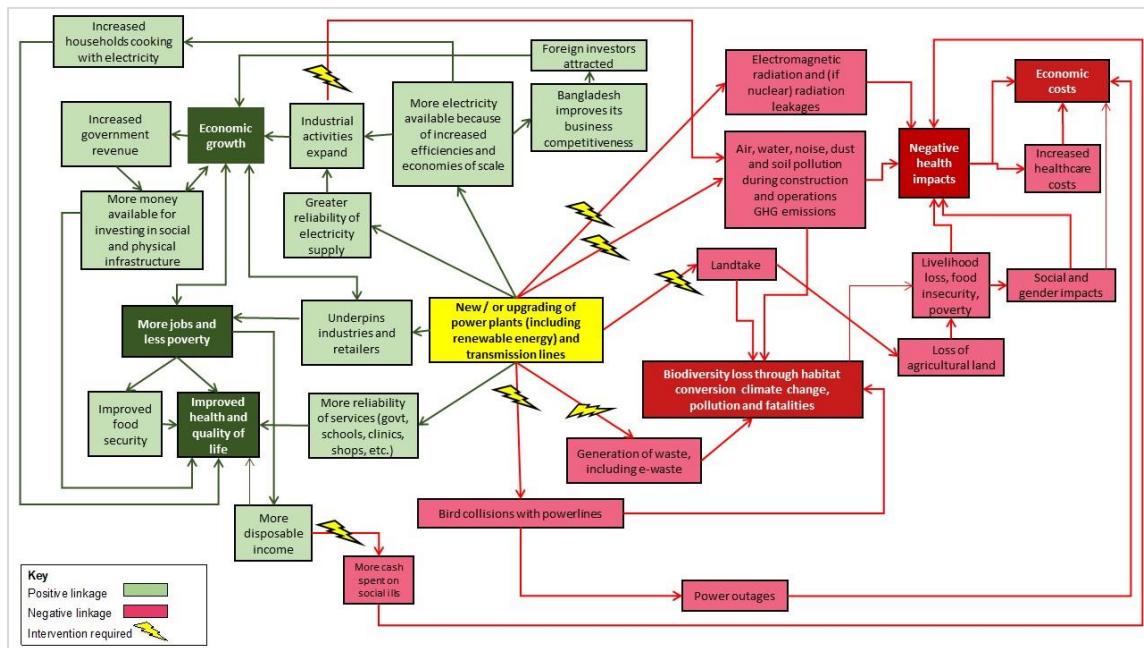
- **Direct impacts** – the direct interaction with an environmental, social, or economic component of activities associated with options within the PPP or its alternatives that initiate and locate specific project activities;
- **Indirect impacts** - those which are not a direct result of activities undertaken when implementing the PPP (usually projects and developments), often produced away from or as a result of a complex impact pathway. Indirect impacts are also known as secondary or even third level impacts;
- **Cumulative impacts** and induced/synergistic impacts, e.g., those arising from large-scale schemes such as infrastructure project development in combination with other multiple projects and activities in a given time and space that lead to snowballing and cumulative impacts on valued ecosystem components, as well as those from implementing other PPPs and major development initiatives.
- **Large-scale impacts** that have regional and global effects. Impacts also may be permanent, temporary, or synergistic.
- **Trans-boundary impacts** – those that occur outside the immediate focal area of the PPP, e.g. in another district or region, or in another country.

The target PPP is likely to be implemented through a variety of actions and initiatives (often projects), each of which will give rise to a range of impacts. The impacts of an individual project may not be particularly significant or may be confined to a particular area and be capable of management or mitigation. But the impacts from multiple projects and actions, whether of the same kind or different initiatives, can be very considerable and spread across a very wide area. These are their *cumulative effects*. But it is also necessary to consider the impacts of other PPPs, strategies, plans and projects in the area covered or influenced by the PPP. They will also generate their own suites of impacts. When all of those impacts are combined with the impacts of the PPP being assessed, then the overall cumulative impacts can be very large indeed – as depicted in Figure 1.2.

Impacts are not a matter of simple cause-and effect. They are subject to cascading primary, secondary, tertiary, and subsequent level impacts. This generates a complex web of interacting and cumulative linkages which need to be understood by policy makers and decision-takers. Developing a picture of such linkages is a complex process and takes considerable time to brainstorm. Figures 3.3 is an example of linkage diagrams that show how cumulative impacts arise developed for an SEA in Bangladesh¹⁰. Figure 3.4 shows workshop participants constructing a linkage diagram during an SEA of development in Pohnpei State, Federated States of Micronesia. Figure 3.5 is an example of how cumulative impacts are the total impacts of multiple actions on a receptor.

¹⁰ CEGIS/Integra (2021)

Figure 3.3: Linkage diagram for power and energy: new or upgrading of powerplants and transmission lines in Bangladesh (Source: CEGIS/Integra 2021)



Main cumulative impacts

Positive: Economic growth; more jobs and less poverty; and improved health and quality of life;

Negative: Economic costs, negative health impacts, loss of biodiversity through habitat conversion, climate change, pollution and fatalities.

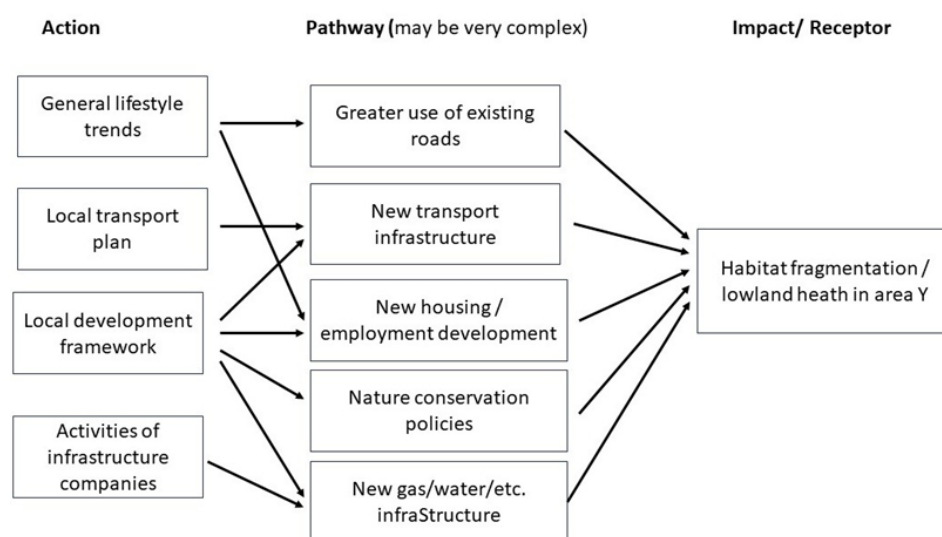
Figure 3.4: Constructing a linkage diagram for SEA of Pohnpei State, Federation of Micronesia, March 2019

Source: B. Dalal-Clayton



Figure 3.5: Example of how a cumulative impact is caused

Source: Therivel (2005)



3.4.6 Evaluating the significance of impacts

The concept of significance is at the core of impact assessment, impact evaluation and decision-making. Deciding whether a PPP is likely to cause significant environmental and/or social effects is central to the practice of EIA. Similarly, in SEA, effects, impacts, trade-offs, and options or alternatives need to be assessed in terms of significance, to determine optimum choices and eliminate unacceptable ones.

There is no single best method for determining the significance of impacts. Various formal methods, using rating (see examples in Table 3.5 and Annex 13), ranking, weighting and/or scaling, future scenario building, and back-casting methodologies can be used to determine significance in particular sectors, and/or to help translate “facts into meaning”. The review of other PPPs and targets, etc., during scoping is key to providing information on significance.

Table 3.5: Example of scale for rating significance of impacts used in Kenya

(Source: NEMA 2012)

Significance	Criteria
High	<ul style="list-style-type: none"> Exceeds or threatens to exceed legal thresholds or standards Exceed or threatens to exceed functional thresholds or LAC for health and safety; may result in irreversible, irretrievable or irreplaceable loss of ecosystem services Norms or Limits of Acceptable Change (LAC) established by society
Medium	<ul style="list-style-type: none"> Controversial LAC; no societal agreement on these limits
Low	<ul style="list-style-type: none"> Preference thresholds for individuals, groups or organizations; not for broader communities or society

Key elements that should be considered in determining significance include the characteristics of the actual effects and the area likely to be affected:

Impact characteristics:

- The probability, duration, frequency and reversibility of the effects (e.g., ecosystem fragmentation);
- The cumulative nature of the effects;
- The trans-boundary nature of the effects;
- The risks to human health or the environment (e.g., due to accidents); and
- The magnitude and spatial extent of the effects (i.e., geographical area and size of the population likely to be affected).

Importance of the affected area due to:

- Its value and vulnerability;
- Special natural characteristics or cultural heritage;
- Exceeded environmental quality standards or limit values; or
- Intensive land use.
- The effects on areas or landscapes, which have a recognized community, district, national or international protection status or value.

In determining the significance of impacts, it is helpful to relate them to the institutional, public or technical recognition given to particular environmental/social attributes or resources (Table 3.6).

Table 3.6: Forms of recognition of environmental or social attributes

Form of recognition	Criteria
Institutional recognition	The importance of an environmental/social attribute or resource is acknowledged in the laws, plans or policy statements of government agencies or private groups
Public recognition	Segments of the public recognize the importance of an environmental/social resource or attribute. Public recognition may take the form of support, conflict or opposition. Public action may be expressed formally (e.g. letters) or informally (e.g. protest action).
Technical recognition	The importance of an environmental/social resource or attribute is based on scientific or technical knowledge or judgment of critical resource characteristics.

Annex 14 provides a checklist of questions that can be applied when determining impacts and their significance.

3.4.7 Identification of measures to enhance opportunities and mitigate adverse impacts

The SEA should propose measures to maximise the positive environmental and social opportunities of the PPP and activities/projects that are likely to arise during its implementation; and propose mitigation measures to avoid, offset or minimise any negative risks. There are no blueprints for this task. SEA experts may use whatever format is suitable to provide commentary on the issues listed below and to explain their recommendations:

- Opportunities for optimizing development objectives or priorities pursued by the PPP;
- Opportunities for optimizing specific proposals/components within the PPP (e.g. alternative development methods; and locations, scale and sequencing/timing of proposed developments);
- Opportunities for optimizing implementation of the PPP such as issues to be addressed in project-level assessments (e.g., preliminary advice on the scope of EIAs for specific projects or prescribing assessment for projects that are vulnerable to extreme climatic change conditions);
- Proposed mitigation or enhancement measures for those environmental or social effects of the PPP that could not be avoided through the changes in the proposed development objectives, priorities or actions, and
- Proposed changes in other relevant PPP (often called 'flanking measures').

Opportunities will generally enhance achievement of the Sustainable Development Goals (SDGs) and other sustainable development objectives. The aim is to develop “win-win” situations where multiple, mutually reinforcing gains can simultaneously:

- Strengthen the economic base and enable economic objectives to be achieved;
- Improve social conditions and provide equitable conditions for all, and
- Protect and improve management of the environment.

Where this is impossible, the trade-offs must be clearly documented to guide decision-makers.

A *mitigation hierarchy* should be followed for identified negative impacts: avoid, minimise, rectify, reduce, restore/rehabilitate, compensate and finally offset for impacts using appropriate measures. Caution should be exercised if the analysis indicates a potential for major, irreversible, negative impacts on the environment or social conditions. Often this may suggest selecting less risky alternatives. For less-threatening situations, standard mitigation measures can be used to minimize adverse impacts to “as low as reasonably practicable” (ALARP level).

The mitigation measures should be summarised in a table and elaborated in the text of the SEA report or in an accompanying Strategic Environmental (and Social) Management Plan (SESMP).

Once mitigation has been considered, the significance of residual adverse impacts can be evaluated. This is an important measure of the environmental and social acceptability of the PPP. It is usually carried out against selected environmental/social quality objectives (ESQOs) and criteria. The energy sector is one with clear environmental and social implications. Residual impacts will require additional mitigation and management in the SESMP.

3.4.8 Restoration

Implementing a PPP will usually involve a range of actions which, often, will take the form of individual projects/developments. Where mitigation measures proposed by a SEA (and subsequent project-level EIAs) are inadequate, ineffective or not undertaken, actions/projects can result in environmental or social harm and degradation (e.g. unnecessary or excessive deforestation, loss of habitats, biodiversity and ecosystem services, soil erosion, pollution, involuntary resettlement etc.). The significance and seriousness of such degradation can be compounded where the impacts are cumulative and extensive. It will usually lead to demand for and need for land and ecosystem restoration (see Box 3.11). This need will also arise at sites of projects that have come to the end of their useful life (e.g., coal mines or retirement of coal fired power plants),

Box 3.11: Land and ecosystem restoration

Land restoration, which may include renaturalisation or rewilding, is the process of ecological restoration of a site to a natural landscape and habitat, safe for humans, wildlife, and plant communities. Ecological destruction, to which land restoration serves as an antidote, is usually the consequence of pollution, deforestation, salination or natural disasters. Land restoration is not the same as land reclamation, where existing ecosystems are altered or destroyed to give way for cultivation or construction. Land restoration can enhance the supply of valuable ecosystem services that benefit people.

Land restoration can include the process of cleaning up and rehabilitating a site that has sustained environmental degradation, such as those by natural cause (e.g. desertification) and those caused by human activity (strip mining), to restore that area back to its natural state as a wildlife home and balanced habitat.

Land restoration is also at the core of the UNCCD’s mission, as actions that protect and revitalize land resources such as soil, water and biodiversity are critical to achieving Land Degradation Neutrality (LDN) by 2030 and constitute a proactive way to build resilience to drought¹¹.

¹¹ [Land management & restoration | UNCCD](#)

The Kunming-Montreal Global Biodiversity Framework was developed under the UN Convention on Biodiversity and was adopted in December 2022¹². It includes four global goals and 23 targets for 2030. Target 2 is to: “*Ensure that by 2030 at least 30 per cent of areas of degraded terrestrial, inland water, and coastal and marine ecosystems are under effective restoration, in order to enhance biodiversity and ecosystem functions and services, ecological integrity and connectivity*”.

The UN Decade on Ecosystem Restoration (2021 – 2030) aims to promote the UN's environmental goals - specifically, to facilitate global cooperation for the restoration of degraded and destroyed ecosystems, along with fostering efforts to combat climate change, safeguard biodiversity, food security, and water supply. While much focus is on promoting restoration activity by national governments, the UN also wishes to promote such efforts from other actors, ranging from the private sector and NGOs to individuals.

Ecosystem restoration promotes the idea that developments should transition from a ‘do no harm’ approach to ‘do more good’. Thus, SEAs should not only identify how the energy transition and renewable energy PPPs can be framed to avoid, minimise and mitigate harm to the environment; but consider how such PPPs can promote opportunities to ‘do more good’, particularly downstream when individual projects are planned, sited and implemented. This could look at measures such as the repurposing of retired coal fired power plants, the reclamation of coal mines and reparations for outstanding environmental and social legacies.

3.4.9 Assessing trade-offs

SEA is a process that should support the consideration of environmental, social (and economic) concerns in policy-making and planning. This includes indicating where such concerns (the three main pillars of sustainable development) interact, either positively or negatively. This is often achieved by highlighting potential synergies or conflicts (antagonisms) between elements of the PPP or between the assessed PPP and other PPPs.

Synergies provide potential to maximise positive environmental, social, and even economic, benefits and impacts. Conflicts between PPP (or elements of a PPP) have potential to generate negative impacts and an SEA should analyse these to identify where such impacts can be minimised, avoided or mitigation measures put in place. Addressing conflicts will often require planners and decision-makers to make trade-offs. It is the role of SEA to highlight the areas of potential trade-off that would enable positive impacts to be enhanced and negative ones minimised, and to provide appropriate data and analysis. The provisions on trade-offs in existing agency guidelines should be followed.

Consideration of trade-offs is increasingly becoming a standard practice in SEA, and it is an effective measure to help reverse the current ecological deficit¹³, in terms of biodiversity and ecosystem services. SEA can be a catalyst for addressing complex development problems and alternatives under conditions of high uncertainty, where multi-stakeholder groups with diverse and sometimes conflicting objectives could be affected. In addressing sustainability, the goal is to seek ‘win-win’ outcomes from development. In a situation where resources are limited and when two or more conflicting objectives are being pursued, the most common outcome is that society loses in one aspect (e.g., loss of biodiversity) at the expense of another (e.g. socio-economic development). To promote sustainability, it is critical to consider a holistic balance of various forms of capital: financial, natural, human, social and public (i.e. infrastructure which supports production). SEA can play a critical role in identifying where such balance is possible and where trade-offs may be required.

¹² [RECOMMENDATION ADOPTED BY THE WORKING GROUP ON THE POST-2020 GLOBAL BIODIVERSITY FRAMEWORK \(cbd.int\)](#) and [Kunming-Montreal Global Biodiversity Framework \(cbd.int\)](#)

¹³ An ‘ecological deficit’ occurs when the footprint of a population exceeds the biocapacity of the area available to that population. Conversely, an ‘ecological reserve’ exists when the biocapacity of a region exceeds its population's footprint.

A trade-off usually refers to losing one quality or aspect of something in return for gaining another quality or aspect. It implies a decision to be made with full comprehension of both the upside and downside of a particular choice.

Trade-off decisions are generally of two types:

- *Compensation and substitutions.* These can be straight forward where one option can be substituted for another, e.g., to eliminate a natural wetland and replace it with a constructed wetland of comparable ecological value elsewhere in the watershed – provided it provides the same values as a natural one; or an option can be provided to compensate for a particular risk or loss.
- *Net gain and loss calculations.* These are not always done explicitly or openly, and the measurement and comparisons are often difficult and sometimes objectionable, e.g. the jeopardized interests of a local community displaced by a new dam balanced against water supply security for a larger number of downstream rural communities

Loss/gain accounting is quite a different prospect for biodiversity than for social values. In terms of biodiversity, loss/gain accounting is foremost about identifying the required amount of mitigation associated with an option, making sure the preventative stages of the mitigation hierarchy are optimised, and then reviewing the feasibility of achieving net gain via remediation measures. Trade-offs might be a consideration then for offsets (e.g., if net gain cannot be achieved like for like). In this sense, trade-offs **MUST** be acceptable to stakeholders, or the option should not be pursued (the exception might be where it is legally mandated - but stakeholder acceptance is still a key factor).

While trade-offs may not always be acceptable, it is important that a justification is always provided and that the process is as transparent as possible. Significant adverse effects could be justified 'if the alternative is worse'.

Table 3.7 provides a basic working list of rules to guide trade-off deliberations. These rules can be used as a checklist when dealing with trade-offs within SEA.

Table 3.7: General trade-off rules

Source: NEMA (2012)

Rule	Description
Maximum net gains	Seek to attain mutually reinforcing, cumulative and lasting contributions that bring the most positive overall results in sustainability (including ecological, social and economic aspects).
Burden of argument on trade-off proponent	Burden of proof rests on the proponent of the trade-off who has to prove that the trade-off is unavoidable and acceptable.
Avoidance of significant adverse effects	No trade-off that causes significant adverse effects on any sustainability areas (ecological, social, economic) can be justified unless the alternative is worse.
Protection of the future	No displacement of significant adverse effects from the present to the future can be justified unless the alternative is of an even more significant adverse effect.
Open process	Proposed trade-offs must be addressed through open involvement of all stakeholders, particularly those who will be affected by the trade-offs.

A number of tools have been designed specifically for dealing with trade-offs, for example, cost-benefit analysis and consideration of opportunity costs, matrix-based appraisal methodologies, multi-criteria assessment scenario comparisons, or life cycle assessment.

3.4.10 Stakeholder engagement during the main assessment stage

Section 3.3.6 discusses the minimum requirements for stakeholder engagement/participation in the SEA Process and its role during the scoping phase. But stakeholder engagement should be a continuing process throughout all stages of the SEA including during implementation of the Strategic Environmental and Management Plan (SESMP).

Much of the main assessment activities will be expert-led involving analysis of data, prediction of trends/modelling, brainstorming to assess/score potential impacts, etc. The assessment process will be intensive and will need to be undertaken by a small professional team, drawing from international experience and lessons regarding the potential impacts of particular developments and local scientific and contextual knowledge.

But stakeholders have a clear role to review the outcomes of the draft SEA report and draft SESMP, to examine the analyses and recommendations, identify gaps and errors, and challenge assumptions and conclusions.

Equally, once the PPP is approved and is being implemented, stakeholders will have key roles to play in monitoring whether the environmental and social quality objectives - agreed to and used in the SEA, are being met, and whether mitigation plans are being fully and effectively carried out. The SESMP will recommend a monitoring and auditing programme for this purpose. It should also set out the roles and responsibilities of governmental bodies and other stakeholders to implement the SESMP as well as the opportunities for civil society groups to engage in this process (e.g., data gathering, informal reporting of changes, etc.).

3.5 STRATEGIC ENVIRONMENTAL (AND SOCIAL) MANAGEMENT PLAN (SESMP)

For many PPPs, particularly those at a policy level where actions for its implementation are generic, a section on mitigation and monitoring can be included in the SEA providing sufficient information for the proponent to include appropriate measures in the PPP to address these issues.

It is becoming increasingly common for a proponent to require the preparation of a separate Strategic Environmental Management Plan (SESMP).¹⁴ This may be in circumstances where either (i) the SEA results in the identification of numerous significant potential impacts, so it would be beneficial to have a separate SESMP, or (ii) where institutional reform/management planning has a significant role to play during PPP implementation. Prepared as a standalone document, a SESMP is an effective reference document and management tool for assuring that SEA recommendations are implemented.

Where a proponent requires a stand-alone SESMP, it should amplify (but not replace) the text in the SEA. Further details on the role of a SESMP and what it should cover are provided in Annex 15.

Annex 16 provides a list of issues that should be covered by a SESMP.

3.6 REPORTS AND REVIEW

A variety of reports (formal and informal) may be produced during a SEA process (Table 3.8). Some will require circulation to stakeholders (and in some cases to the public) with a request for comments. Some of these will require formal review.

Every effort should be made to make SEA reports accessible to stakeholders and the public, particularly to non-specialists (e.g., non-technical summaries) and in major local language(s). The use of social media is gaining increasing importance to effective disclosure of SEA reports.

¹⁴ A SESMP should address both environmental and social concerns. To emphasise this point, the term Strategic Environmental and Social Management Plan (SESMP) is sometimes used in preference to SESMP. In this guidance, SESMP is used.

Table 3.8: Reports produced during an SEA

Report	SEA stage when report required (Table 3.1)	Requires circulation to stakeholders for information and comment	Must be provided to the public for information and comment	May require formal review	Comment
Inception report	Stage 2				If required by TOR
Scoping report	Stage 2	√	√		Should incorporate stakeholder engagement and communications plan
Special studies and research reports	Stage 2/3				May require to be completed before SEA can proceed to Stage 3. Should be submitted with the SEA report
Initial SEA report	Stage 3	√	√		
Draft SEA report	Stage 4	√	√		
Draft SESMP (when required as stand-alone)	Stage 4	√	√		
Final SEA report	Stage 4	√	√	√	
Final SESMP (when required as stand alone)	Stage 4	√	√	√	
Record of stakeholder events	Stage 4		√		A record of numerous meeting/workshops (participants, comments) may better be presented as a stand-alone report, to reduce undue length of the SEA report
Monitoring reports on PPP implementation – may be subsumed in SESMP (where required) annual reports	Stage 6			√	On-going throughout PPP implementation

Note: In some countries there may be requirements to submit other reports/documentation.

3.6.1 Scoping report

The scoping report should cover the issues listed in Box 3.3 (section 3.3.3).

3.6.2 Initial SEA report

The initial SEA report should present the assessment of the PPP alternatives (section 3.4.5).

3.6.3 Special reports

The scoping process may identify the need for special reports or research where critical information or data is inadequate, unreliable, or not available. Supporting reports should be prepared on any such specialist studies, including on methods used, data acquired and analysed, etc. They may be concerned with, but not limited to, specific subject matter areas such as health issues, biodiversity, ecosystems, land use, protected areas, archaeological and heritage sites, institutional arrangements, skills and capacities, or review of legal instruments.

3.6.4 Draft SEA report

The SEA results need to be reported (e.g., aspects of the technical analysis and the rationale for conclusions and recommendations). A SEA report can at times be very technical, but it must be presented in an understandable format, in the official language used in the country for government business (and in English where international financiers are involved in funding the implementation of the PPP), with a non-technical executive summary also in the main local language(s).

A SEA is usually complex and can run to a considerable length. But is very helpful to minimise unnecessary text by using diagrams, graphics, and summary tables. In addition, a concise, non-technical summary is critical and should adequately summarize and explain the SEA findings to all stakeholders, including local communities. The non-technical executive summary should contain the title of the report and it should summarize:

- Proposed PPP , objectives and SEA methodology
- Consultation process
- Alternatives that were studied and the selected option(s) (preferred alternative(s)),
- the affected area(s),
- Environmental and socio-economic analysis,
- Impacts expected,
- Proposed mitigation and enhancement measures, and
- Proposed monitoring programme.

Because the non-technical executive summary is likely to be the only part of the SEA report that is read by the public (and by other stakeholders), its quality is critically important to obtaining informed stakeholder comments on the Draft SEA Report. This executive summary should also be made available in the dominant local languages.

Annex 4 lists issues that are usually required to be covered in a SEA report. Additional chapters/sections may be added, as required.

The main SEA report should include an annex analysing the main stakeholder perspectives and indicating how they have been addressed (these can be presented in an issue-response table). However, the inclusion of annexes detailing all stakeholder events, all participants, and all comments (many of which may cover essentially similar issues) will considerably lengthen a SEA report and may better be presented as a stand-alone Record of Stakeholder Events.

Key points from all special and supplementary reports should be reflected in the appropriate chapters of the main SEA report.

3.6.5 Draft Strategic Environmental and Social Management Plan (SESMP)

Where a separate Strategic Environmental and Social Management Plan (SESMP) is required by the proponent, it should amplify (but not replace) sections on mitigation and monitoring included in the draft SEA report. This should not be seen as duplication of effort. Both the SEA report and SESMP will serve different functions and should be capable of being used without having to cross-reference each other. The SESMP should be incorporated as an integral part of the PPP even though it may be presented in a stand alone document.

The draft SESMP should set out, in detail:

- Strategies and procedures to implement the SESMP to enhance positive, and prevent, minimise or mitigate adverse, environmental and social impacts associated with the PPP and projects, activities, or regulations that may occur in the future when implementing it.
- The roles and responsibilities of different jurisdictions, authorities, and actors in implementing the SESMP. As far as possible, recommendations should identify responsible parties.
- The practical arrangements for environmental and social monitoring to ensure that:

- Information is recorded and assessed (against environmental and social quality objectives and indicators identified by the SEA and those incorporated in the PPP) on the environmental and social impacts (including cumulative and transboundary impacts) of the PPP and downstream development projects/initiatives that may be implemented – to determine if the objectives and recommendations are being met;
 - Any unforeseen adverse effects are identified in order to be able to undertake appropriate remedial actions;
 - A mechanism is included to signal when steps are required to enhance benefits or to remove or reduce risks and negative impacts. The proposed mechanism should take into account existing national legislation and provisions regarding EIA, and
 - A timeline is presented for monitoring and follow-up actions. Where possible, it may also be useful to present a summary of costs of SEA implementation.
- Procedures and measures to ensure **compliance with relevant safeguards** (national and international where applicable) during implementation of the PPP and downstream projects/initiatives. National regulations should take precedence in the case of a nationally-driven SEA. Where such national safeguards do not exist, then reference can be made to incorporate the requirements of other international standards (e.g. IFC, WHO, multi-lateral development banks).
 - A **stakeholder consultation procedure** for the mechanism to monitor and evaluate the environmental and social dimensions of PPP implementation.
 - **Guidance and recommendations for EIAs** of individual projects that may arise during PPP implementation.

Thus, the SESMP should act as an over-arching framework and roadmap for addressing the cumulative impacts of projects, development initiatives and activities planned to be implemented under the PPP. Commitments in this regard should be incorporated in the PPP as an integral part – but they may be in less detail than in the SEA, and the PPP will cover much more ground. The aim of the SESMP is to provide a management tool for ensuring that the recommendations in the SEA are followed, to identify the responsible party or agency for doing so and how the environmental and social commitments in the PPP will be effectively realised.

Further information on the role of a SESMP is provided in Annex 15.

3.6.6 Quality assurance / technical review of SEA/SESMP

Designing a SEA to include the steps and practices outlined in the various stage of the process (Table 3.1) will provide a basic level of process quality. However, a specific measure of quality control assurance will be needed, e.g., to ensure the credibility of the assessment in the eyes of stakeholders. These measures will depend on the nature, context, needs and timeframe of the specific PPP. For further guidance, see Annex 10.

The SEA process described in these guidelines sets out the following options for quality control checks.

Administrative review

Administrative review of draft SEA reports and SESMPs should be undertaken by the PPP proponent (Section 2 (Report Presentation) of Annex 10 (Consolidated Checklist for the Quality Assurance, Review, and Performance Evaluation of a Comprehensive SEA) can assist with this step).

3.6.6.1 Scrutiny workshop

A scrutiny workshop may be organised by the proponent with the competent authority to jointly examine the first draft of the SEA report and its recommendations and agree any revisions and amendments.

3.6.6.2 Lead agency and stakeholder review

The PPP proponent should send the draft SEA report (and draft SESMP when a stand-alone document is required) at the same time to relevant sector lead agencies (e.g. Ministries of Energy, Health; Agriculture, and Transportation). Lead agencies and other stakeholders should be allowed sufficient time (generally 30 working days) to review the documents and submit comments.

One or more stakeholder workshops should be organised to discuss the reports. A national workshop should be organised (Figure 3.6). In countries that have disparate and remote regions (e.g., geographically dispersed island nations), a number of regional workshops will be advisable to enable stakeholders to participate. The use of remote consultation techniques (e.g., Microsoft Teams, Zoom, Google Meet, WhatsApp) may be useful where face to face meetings are not possible.

Figure 3.6: National workshop to discuss draft report of SEA of SW Bangladesh and the Sundarbans, February 2021



3.6.6.3 Public review

Where possible, the PPP proponent should ensure that at least two *notices* regarding the draft SEA report (and draft SESMP) are published, each one week apart in newspapers, on the SESA website or via social media with a nationwide circulation, and announced in other local media. The public generally should be allowed 30 working days (from the date of the first advertisement) to submit comments.

The invitation for public comments (notice) should state (a) the nature of the PPP, (b) where the PPP and SEA documents can be found (e.g., on the dedicated SEA website, at particular government offices), and (c) how, by when, and to whom comments should be submitted.

3.6.6.4 Formal technical review

The PPP proponent may be required by some national SEA regulations to submit a specified number of copies (possibly in specified format) of the draft SEA report and draft SESMP, and possibly additional documents (e.g., an Environmental Statement summarising information in the SEA report) to the competent authority for formal review. The PPP proponent may be required to cover various related costs, such as:

- Verification surveys;
- Formal review by the competent authority;
- Coordination of the stakeholder-engagement review process (e.g., coordination of a Technical Advisory Committee) and the public review process;
- Monitoring checks by the competent authority or others of the PPP implementation; and
- Any other required steps or functions as may be determined by the competent authority.

A formal technical review by the competent authority of the final SEA report and final SESMP may also be required in some jurisdictions (see sections 3 -8 of Annex 10).

The competent authority may seek support for such review by the following:

- Commissioning **independent external experts** to conduct a technical review;
- Establishing a **Technical Advisory Committee** (TAC) to undertake the review; or
- Establishing an **Independent Expert Commission** (applicable for trans-national shared resources).
- [Note: where an SEA is likely to have trans-national impacts, it will be necessary to advise the authorities of the concerned country at the outset, agree on how to address such impacts (perhaps with experts from both countries taking part in the SEA), and agree how to jointly review the SEA report. As indicated above, the nomination of experts to the Independent Expert Commission to represent the country on trans-boundary issues will be necessary. The respective notification protocols and procedures would apply].

Before submitting the final SEA report (and final SESMP where required) to the competent authority, the PPP proponent shall ensure quality-assurance of the SEA using the same checklists as the internal and external reviewers will use (see Annex 10). The PPP proponent should endorse the final SEA report (and final SESMP where required).

3.6.6.5 Key questions and criteria for reviewing the SEA report

Note: Reviewing the SEA process (rather than the report), outcomes, or performance is considered in Section 3.7, 'Monitoring and Evaluation'.

The most important outcome of a SEA, and thus measure of success, are the positive changes that are made to the PPP. Key questions related to the comprehensive review of a SEA Report include:

- The changes made to the PPP as a result of the main assessment stage of the SEA (Stage 4);
- The quality of information presented in the SEA report;
- The level of stakeholder participation and response to stakeholder comments;
- The definition of the environmental and social quality objectives (ESQOs);
- The adequacy and quality of the assessment and mitigation of environmental and social impacts; and
- The planned implementation framework, timing, follow-up activities and constraints.

Box 3.12 presents criteria that can be used for internal, informal, or formal review of SEA reports by the proponent, the competent authority, expert committees, or others to check whether a SEA has been conducted properly and whether all required information is included in the SEA Report.

Box 3.12: Review criteria for SEA reports

Addressing key issues

- The purpose and objectives of the PPP and SEA are made clear.
- Links with other related PPP are identified and explained.
- Environmental and social issues that are relevant to the PPP are determined.
- The assessment focuses on significant issues.
- Reasons are given for eliminating issues from further consideration.
- The framework of SEA objectives is appropriate to the PPP and identified environmental and social issues.
- Mechanisms have been provided to allow stakeholder inputs into SEA recommendations and decisions.

Alternatives

- Realistic alternatives of the PPP are considered and the reasons for choosing them are documented.
- Alternatives include 'do minimum' and/or 'business as usual' scenarios wherever relevant.
- The environmental and social effects (both adverse and beneficial) of each alternative are identified and compared.
- Inconsistencies between the alternatives and other relevant PPP are identified and explained.
- Assumptions behind the development of alternatives are provided and reasons are given for selection or elimination of alternatives.

Baseline information

- Relevant aspects of the current state of the environment and social conditions and their likely evolution without the PPP are described.
- Environmental and social characteristics of areas likely to be significantly affected are described, including areas wider than the physical boundary of the PPP area where it is likely to be affected by the PPP.
- Relevant data gaps are identified as are means to address them.

Prediction and evaluation of likely significant environmental and social effects

- Both positive and negative effects are considered, and the duration of effects (short, medium or long-term) is addressed.
- Likely secondary, cumulative, and synergistic effects (positive and negative) are identified where practicable.
- Inter-relationships between effects are considered where practicable.
- The prediction and evaluation of effects makes use of relevant accepted standards, regulations, and thresholds.
- A ranking of significance is provided.

Uncertainties

- Methods used to carry out the SEA are described.
- Deficiencies in background information or methods are explained.

Mitigation

- Measures envisaged preventing, reducing and offsetting any significant adverse effects of implementing the PPP are indicated.
- Issues to be taken into account in project consents are identified.

SEA Report

- Is clear and concise in its layout and presentation.
- Uses simple, clear language and avoids or explains technical terms.
- Uses maps and other illustrations where appropriate.
- Explains the methodology used.
- Explains who was consulted and what methods of consultation were used, and how the consultees' views have been taken into account.
- Identifies sources of information, including expert judgement and matters of opinion.

- Contains a non-technical summary covering the overall approach to the SEA, the objectives of the PPP, the main options considered, and any changes to the plan resulting from the SEA. The summary is provided in local languages as required.
- Technical, procedural and other difficulties encountered are discussed; assumptions and uncertainties are made explicit.
- Clearly identifies how recommendations have been incorporated in the PPP.

Management of the SEA process

- The SEA carried out as an integral part of the PPP-making process.
- Relevant authorities and the public concerned are consulted in ways and at times which give them an early and effective opportunity within appropriate time frames to express their opinions on the draft PPP, SEA Report and SESMP.

Source: Adapted from MONRE (2008).

A system to review, chapter-by-chapter, the content of a SEA Report is presented in Sections 2 to 8 of Annex 10:

- Section 2 of the checklist reviews the *Report Presentation* (i.e., is it complete, adequate, clear, etc.). It can support the Administrative Review of the Draft SEA Report, ensuring that the Draft SEA is of sufficient quality to be sent out to stakeholders for review.
- Sections 3 to 8 of the checklist focus on the review of various chapters of a SEA:
 - Section 3 - PPP Description;
 - Section 4 – Policy, institutional and legal framework and links;
 - Section 5 - Description of the environmental and social baseline;
 - Section 6 – Assessment of impacts, determination of impact significance and evaluation of alternatives;
 - Section 7 - Mitigation and environmental management and monitoring plan;
 - Section 8 - Consultation process.

When reviewing a *SESMP*, it will be necessary to check that the plan covers all the issues listed in Annex 16, and that it is presented in a clear and easy to use manner.

3.7 MONITORING AND EVALUATION OF THE SEA, SESMP AND PPP

Monitoring and evaluation is important to determine whether the outcomes have been achieved and have influenced the PPP (fully or in part), and to ensure quality control of the SEA process itself.

3.7.1 Monitoring and implementation of the SESMP and PPP

The PPP proponent should describe the environmental and social monitoring recommendations made in the SEA report (and amplified in a SESMP where the proponent has required such a standalone plan - the latter should, in any case, be clearly indicated in the PPP as an integral part of the PPP).

The proponent should provide periodic reports (annually or according to such other regularity as might be determined) on implementing the recommendations of the SEA and SESMP. Such reports should be submitted to the competent authority (where this is a formal requirement) and should be made available to the public for review and comment (e.g., including via the dedicated SEA website or the proponent's website).

Information tracking systems can be used to monitor and check progress. Monitoring of cumulative effects may be appropriate for PPPs that will initiate regional-scale change in critical natural assets. Methods and indicators for this purpose need to be developed on a case-by-case basis.

3.7.2 Evaluation of the SEA and PPP

At some point during or after implementation of the PPP, a formal evaluation of the monitoring results should take place as part of the revision or renewal of the PPP. Key questions to help evaluate the performance and the development outcomes of a SEA relate to:

- The accuracy of the assumptions made during the SEA and its influence on the PPP process;
- The implementation process;
- The development goals on accountability;
- The outcome of activities.
- Any required corrective actions or next steps.

Evaluation is important to determine whether the outcomes have been achieved, fully or in part, and to ensure quality control of the SEA process itself. As a minimum, the SEA should be evaluated to determine if the PPP promoted sustainable development and what its effects were on institutional, legal, governance and capacity-building issues that highly influence the implementation process. The proponent should undertake such evaluation in consultation with the competent authority. Consultants may also be engaged to provide an independent evaluation.

3.7.2.1 Role of evaluation

Evaluation should examine whether an intervention has achieved intended outputs and outcomes. The challenge is to define clearly how to measure these achievements in an objective and robust manner. The approach can be kept relatively straightforward if it focuses on elements that can be measured more objectively than others (instead of on elements where it is difficult to determine a cause-effect relationship). Evaluating the influence of an SEA will involve examining plausible cause-effect relationships and making an informed judgment about the extent to which the SEA influenced PPP design, implementation and outcomes.

It may not be necessary to obtain absolute scientific proof, but it is necessary to engage in a reflective process to evaluate and improve on previous decisions. The aim is to learn how to continuously improve the integration of sustainability into decision-making and how to improve the use and efficiency of SEA as tool to support sustainable development. In this context, SEA evaluation can also help to:

- Improve learning on the linkages between PPP formulation, assessment, and practical outcomes;
- Achieve PPP goals by identifying ex-post adaptation requirements for those implementation mechanisms/actions that failed to deliver intended outcomes; and
- Support the accountability of decision-makers and involved stakeholders by making the results of decisions transparent.

A central element of evaluation should be the definition of appropriate indicators that reflect sustainable outcomes of implementing the PPP. Indicators are also essential to quantify the achievement of specific objectives and goals. Appropriate indicators for environmental and social quality objectives (ESQOs) should have been defined during the SEA scoping process and incorporated in the SESMP to enable the necessary data to be collected during the implementation phase. Some aspects of achieving goals and objectives are better evaluated in a qualitative manner: in that situation, a written description of the envisaged objectives can be compared with what was practically achieved.

Evaluation should lead to concrete results, for example:

- Positive recommendations on future actions;
- Ex-post adaptation of implementation measures or even the PPP decision(s) itself (e.g. in the case where serious deviations from previous assumptions endanger the achievement of specific goals); and
- Specific measures to develop capacity, tailored to help overcome implementation gaps.

The most important outcome of a good quality SEA is that it significantly influenced the achievement of positive development results and will have enhanced the effectiveness of the PPP.

A systematic approach to (monitoring and) evaluation can be supported by checklist(s). Sections 9 - 11 of Annex 10 focus on evaluation: section 9 reviews decision making; section 10 provides the IAIA SEA process review checklist; and section 11 is the SEA performance monitoring evaluation checklist.