Strategic Environmental Assessment*

Introduction

Strategic Environmental Assessment (SEA) is a set of analytical and participatory processes for incorporating environmental considerations, at early stages of decision making, into policies, plans, and programs that affect natural resources. SEA evaluates, at the highest strategic level, a project’s environmental impacts in the context of social and economic factors. This extends traditional Environmental Impact Assessments (EIA), which focus solely on physical environmental impacts. SEA fosters and provides critical systematic considerations.

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at the sectoral, regional, and national levels to promote environmental sustainability, smart growth, and pollution prevention. The term “SEA” encompasses a spectrum of analytical processes such as Strategic Environmental and Social Assessment (SESA), Strategic Social Environmental Assessment (SSEA), Country Environmental Analysis (CEA), Combined Strategic Impact Assessment (CSIA), and Cumulative Impact Assessment (CIA).

Description and Application of Strategic Environmental Assessment

Strategic Environmental Assessment is not a “fixed, single and prescriptive approach” (OECD 2006, 17). It refers to a family of approaches that use a variety of tools, such as fiscal incentives, land use plans, and sustainable development policy. The “one size fits all” approach is not applicable to SEA. Effective SEAs adapt to fit the context and conditions of the project. They must incorporate the cumulative environmental impact of multiple simultaneous projects proposed by a development plan.

Developing a successful SEA requires resourceful and proactive behavior to seize opportunities for influencing policy. Incorporating environmental sustainability considerations into a project is an ongoing process. Ideally, this process should start at the earliest phase of project formulation, extend through the implementation phase, and conclude only after full monitoring of the complete project has been achieved, as seen in box 1. To accommodate these developments, it is crucial to maintain an open dialogue through every stage of a project.
The two distinct approaches to an effective SEA are impact-centered and institution-centered. The context of the development goal determines which approach is most appropriate.

**Impact-centered SEA approach.** An impact-centered SEA approach focuses on the physical and human impacts of a proposed development plan. Physical impacts include infrastructure projects and land-use change. Human impacts include promoting economic growth or health and safety. For an impact-centered SEA approach, the decision-making criteria focus on incentive systems and institutions conducive to attract investment, encourage savings or consumption, and promote exports. A critical component of an environmental assessment is to properly analyze the environment to optimally manage growth at a sustainable rate.

**Institution-centered SEA approach.** An institution-centered SEA approach focuses on a project’s managing body. Techniques from environmental economics, policy economics, institutional management, political science, and sociology are appropriate for this form of SEA. An effective institution-centered SEA highlights the proper management techniques to sustainably implement a development project.

**Combined SEA approach.** A comprehensive SEA will include strategy from both the impact-centered SEA approach and the institution-centered SEA approach. Project conditions will determine which methodology is most pertinent. For example, an SEA for a hydroelectric power plant will be developed using an impact-centered approach. It will focus on the environmental impact of the proposed construction.

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**Box 1. Strategic Social Environmental Assessment (SSEA) of the Power Sector in the Nile River Basin**

Uganda and the rest of the Nile Equatorial Lakes (NEL) Region of Eastern Africa have experienced an acute lack of electric power. Additional low-cost power generation and an efficient regional electricity trade are development priorities. The World Bank supported the preparation of a Strategic Social Environmental Assessment (SSEA) of major regional power development options and regional transmission interconnections in the NEL Region. The assessment, which covers Burundi, the eastern region of the Democratic Republic of Congo, Rwanda, Kenya, Tanzania, and Uganda, proposed a power development strategy and an indicative development plan to the year 2020.

Bujagali Falls on the upper Victoria Nile in Uganda has long been considered for hydropower development, and in the SSEA analysis emerged as the highest development priority for Uganda. The SSEA also assisted hydropower development in the NEL region by addressing the risk of drought over the lifetime of the Bujagali project through a detailed analysis of climate change and its potential impacts. The analysis shows that with rising temperatures due to global warming, precipitation and net runoff will both increase, as will the losses due to evaporation and evapotranspiration. Yet, it also finds that climate change may increase runoff for Bujagali and consequently provide a higher potential for power generation. Furthermore, Bujagali Energy Limited (BEL), with IFC’s financial support, developed the 250-megawatt Bujagali Hydropower Project. Building on the SSEA’s results, the project undertook sectoral and cumulative analyses to strengthen the project’s social impact assessment and its Environmental Impact Assessment (EIA).

The SSEA provided key regional and sectoral information on the environmental sustainability of the Bujagali project. In reviewing this project, which had not been free of controversy, the World Bank’s inspection panel stressed, among other things, the importance of enhancing the integration of the SEA’s results in the project’s EIA to improve information disclosure, public consultation, and decision making.

and operation of the hydroelectric project and the economic impact of the electricity production. In contrast, an SEA for air pollution policy will be developed using an institution-centered approach. It will focus on the roles of stakeholder groups, such as industry and local residents, and the policy challenges presented when new air pollution regulations are implemented.

**SEA analytic process.** A comprehensive SEA demands a thorough analytic effort. The analytical framework provides decision makers with the information necessary to make informed decisions. This information focuses on the environmental benefits, consequences, and risks associated with a variety of policy and program options. The analytical work includes alternatives and proposals to mitigate potential damages and minimize risks associated with a project. SEA analytical work can be summarized by five steps, which are illustrated in figure 1 and described below.

1) **Identification of Environmental Priorities** This process will provide a compilation of existing key environmental issues in the sector or region that will be affected by the policy. Their interrelationship with economic and social priority issues should be discussed to clarify how environmental priorities are linked to growth and poverty alleviation. A complete compilation will examine preexisting private sector projects and the standards by which they operate.

2) **Stakeholder Analysis** This process will assess who benefits from or is adversely affected by both the current situation and the potential development project. It will analyze the vested interests, power asymmetries, and impediments to collective action of affected stakeholders. A complete and comprehensive analysis of all potential stakeholders is a critical component of an SEA.

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**Figure 1. Analytical Work Schematic**

![Analytical Work Schematic](image-url)
3) **Assessment of Institutional and Capacity Gaps** This process addresses the environmental priorities for the next step. It will include an assessment of the extent to which the proposed policy may aggravate or please the stakeholders. A full assessment will consider potential stakeholder responses.

4) **Policy Recommendations, Institutional Strengthening, and Capacity Building Recommendations.** This process addresses the institutional and capacity gaps identified in step 3. Policy recommendations should be sorted into three categories, short term (1-2 years), medium term (3-5 years), and long term (greater than 5 years). Each recommendation must include monitoring indicators.

5) **Political Economy Assessment of Proposed Adjustments** This process addresses the recommendations from step 4 and analyzes their impact on the political and economic environment. The assessment completes the first cycle in developing an SEA report.

The second and successive cycles of an SEA resemble a quality management cycle. In following up the implementation of the SEA recommendations, environmental priorities should be revisited. If new priorities are detected, a new cycle of assessment and recommendations as depicted in the figure above should follow. In this way an incremental and continuous improvement of the environmental sustainability of policy formation is fostered.

**SEA public participation process** SEA is a mechanism to engage all key stakeholders that will be potentially affected by the proposed policy. There are two main potential development benefits of opening development decision making to all affected parties. First, the voices and interests of weak and vulnerable stakeholders can be heard and influence the decision-making process. Second, public participation creates increased accountability for the policy makers.

Both of these outcomes enhance environmental governance. Furthermore, public participation strengthens democratic institutions by reducing the ability of vested interests to misrepresent their interests as those of the public at large. Figure 2 summarizes the main phases of effective public participation in SEA and the phases are briefly discussed below.

1) **Stakeholder and Political Economy Analysis** This process is detailed above and insures a complete understanding of power differentials and cultural factors that can affect the quality and contribution of public participation.

2) **Selection of Public Participation Mechanisms** This process addresses potential mechanisms for dialogue. It must include political and cultural constraints affecting a particular society. Mechanisms may include, but are not limited to workshops, focus groups, surveys, and ethnographic field research. Mechanisms are selected to minimize and control for the bias that political and cultural factors may impose on the dialogue. Successful mechanisms will open a
3) **Dialogue Adaptation to the Complexity of Decision Making** This process allows policy makers to interpret and prioritize results from the dialogue discussion to fit the development goals. During this process all stakeholder opinions will be considered as valid and adapted as needed to most appropriately fit the context of the project.

4) **Engage Stakeholders in the Follow-Up and the Implementation** This process keeps the dialogue open between project developers and policy makers, and the stakeholders. After policy and project decisions are made, stakeholders must be informed in a comprehensive manner so they understand the reasoning for the decisions. At this stage stakeholders should voice their opinions on the current policy and project draft.

This four-part public participation process reinforces the SEA dynamic of a continuous adaptation to the sector’s environmental priorities. Furthermore, SEA assesses historical, cultural, institutional and systemic conditions affecting environmental and natural resources management that cannot be addressed at the project level. In this way, SEA helps manage systemic environmental risks. If these conditions are not taken into consideration in the design and implementation of programs, plans, and policies, then society’s welfare will suffer from environmental and natural resource degradation and lowered growth rates.

**Figure 2. Public Participation Schematic**

Narrowly defined, the target audiences for SEA are decision makers at the planning and sectoral ministries; local, regional, and national authorities.
with planning and policy responsibilities; and multilateral development groups. While the priority of these audiences cannot be denied, civil society organizations, policy communities, the private sector, and the media are also audiences of SEA due to their interest in sound environmental management, enhanced governance, and sustainable development. In Box 2 hints for having the buy-in of SEA from this broad audience are provided.

Box 2. Getting the support of stakeholders to the policy-SEA process

- SEA is linked to economic growth, social development and/or poverty alleviation imperatives
- Stakeholders select SEA priorities, validate the institutional analysis and endorse the SEA recommendations
- SEA Action Plan involves stakeholders in following-up and monitoring

<table>
<thead>
<tr>
<th>Public Sector</th>
<th>Civil Society</th>
<th>Private Sector</th>
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<tbody>
<tr>
<td>Sector/sub national authorities led the SEA process</td>
<td>SEA’s objectives, phases, intermediate outputs and expected outcomes are known and agreed in advance</td>
<td>A framework for local/regional sustainable development is facilitated by the SEA involving local communities, the private sector and national and subnational governments</td>
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<tr>
<td>An intersectoral committee to steer the SEA process is effectively (not formally) established</td>
<td>SEA public participation plan is agreed early on in the process</td>
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</table>

Source: Own elaboration based on a review of a number of SEAs undertaken or supported by the World Bank.

SEA at the policy level can be applied by governments as part of their preparation of policy reforms, development strategies, and high level plans and by donors, mainly in coordination with governments, as part of their assistance to developing countries. Key sectors where SEA has been used are among others natural resource management, particularly forests, environmental management, extractive industries, basin management, energy and transport. Its potential for application is, however, broader comprising trade, industrial policy, urban planning, climate change, national level overarching strategies and plans, national policy reforms and budget support programs. Industries and firms may also be interested in policy-SEA as it enhances the legitimacy of sector reforms and strengthens pollution management policies. For instance, critical environmental issues for firms’ competitiveness such as those related with water access and management can be better addressed at the basin than at the project level. Also, information on environmental priorities and policy alternatives discussed in policy-SEA would be a useful input to firms’ strategies or planning.
**Prerequisite Factors for Strategic Environmental Assessment**

Planning or policy competency, implementation capacity, and a tolerant society are the three necessary factors that must be in place to successfully implement an SEA.

**Planning or policy competency.** The critical prerequisite for SEA is that the organization that will undertake the SEA must have the planning or policy competence on the sector or theme that will be subject to the SEA. This organization should have the formal responsibility and powers to implement the SEA and sustainable options that come out of it.

**Implementation capacity.** Another prerequisite is that the organization should have the capacity to implement the SEA’s recommendations. Usually, these recommendations pertain to widening the scope of their practice beyond their formal (and therefore narrow) responsibilities – taking alternative strategic options into consideration that normally would not be in their scope but in that of others. The organization, therefore, must be able to cooperate with other government organizations that have these responsibilities. When this prerequisite is not fulfilled, the SEA would need to promote inter institutional arrangements like the creation of intersectoral committees to allow cooperation and joint working across more than one organization, as in the SEA for the tourism reform in Mexico and the SEA for the mining sector reform in Sierra Leone (see Table 1).

The challenge here, for which there are no recipes, is to promote joint ownership along with separate sector accountability.

**Tolerant society.** The importance for effective SEA of an open society that can tolerate criticism and opposition to the prevailing policy and planning views cannot be understated. When these conditions are lacking or are significantly constrained, the effectiveness of SEA suffers. Likewise, societies where social or gender discrimination limit the participation of weak and vulnerable groups will also limit the effectiveness of SEA. In these cases SEA practitioners should strive to elicit the views of excluded or discriminated groups in any lawful way possible. Ultimately, SEA is a tool for strengthening governance and state building but, no matter how well implemented, SEA cannot be a substitute for a long-term comprehensive strategy for enhancing governance. The initial governance conditions prevailing in a country are, therefore, critical for effective SEA.

**Advantages and Limitations of Strategic Environmental Assessment**

The use of SEA has numerous advantages:

- Raise attention to key environmental issues
- Assess capacity gaps and institutional effectiveness
- Provide a forum for discussion and information sharing for decision makers and stakeholders
- Assess the interplay of interest groups to keep the status quo or to promote greater environmental sustainability by addressing key environmental issues

The benefits of SEA vary over time and largely stem from the process that it sets in motion. In the short
term, SEA provides key information to assess the environmental risks and opportunities associated with alternative government interventions and the existing capacity to manage them. It also provides a platform of dialogue to consider the environmental implications of these interventions along with mechanisms to reach agreements on priorities and proposed actions. In the medium and long term, as the SEA process becomes engrained in the planning and policy culture, it enhances environmental governance by strengthening environmental constituencies, and promoting institution building, transparency and accountability of decision making.

SEAs also have several of limitations:

- Experience in using SEA is limited compared to EIA and experience in using SEA at the policy level is modest compared to SEA of programs and plans
- Political pressures can reduce the effectiveness of SEAs
- Require an effective system of checks and balances to insure political biases are not introduced

Interaction with Other Tools and Possible Substitutes

SEA is closely related to other environmental, planning, and policy appraisal tools. For environmental assessment or analysis, SEA complements and extends the assessment of the physical environment performed in an EIA. Yet, unlike an EIA, which is tied to a go-or-no-go decision, SEA is an iterative process of assessment and reassessment. Additionally, SEAs address technological, economic, social, and institutional changes, and environmental management systems. SEA borrows the methods for stakeholder and political economy analysis, and for public participation, from poverty and social impact analysis, and from political economy. Other tools with which SEA can interact are land use planning, cost-benefit analysis and life cycle analysis.
Practical Examples of Strategic Environmental Assessment and Lessons Learned

Table 1. Benefits and Methodologies of SEA for Sectoral Policy Reform and Planning

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Mining policy reform in Sierra Leone</th>
<th>Tourism reform in Mexico</th>
<th>Environmental reform in Colombia</th>
<th>Laot PDR’s Hydropower Development Plan (related to the Nam Theun 2 Project)</th>
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<tbody>
<tr>
<td>Type of SEA</td>
<td>SESA</td>
<td>SEA</td>
<td>CEA</td>
<td>CIA</td>
</tr>
<tr>
<td>Significant contribution (Benefits)</td>
<td>Preparation of technical assistance project, including (i) strengthening of Sierra Leone’s environmental agency and the environmental unit in the Ministry of Mineral Resources, (ii) supporting capacity building of mining communities, and (iii) improving regulations on resettlement, reclamation and EIA. Project preparation and implementation on “Strengthening Community-Level Accountability in Sierra Leone’s Mining Sector.”</td>
<td>Policy for sustainable development for tourism and development of “Mexico clean and beloved” campaign</td>
<td>Improvement of development policy loan program and technical assistance project to (a) improve the effectiveness and efficiency of Colombia’s National Environmental System, and (b) integrate the principles of sustainable development into key sector policies, protecting the most vulnerable groups. Debate that led to passage of Air Pollution Control Bill. Information base as government strengthened governance of regional environmental authorities and the link between national and local priorities.</td>
<td>Lao PDR adoption in 2005 of the “National Policy on Environmental and Social Sustainability for the Hydropower Sector.” Improved resettlement and consultation practices. Creation of the Watershed Management and Protection Authority for NT2. Integrated river basin planning. Guidelines for environmental and social analysis. Understanding of riparian risks of international rivers system of the Mekong. Compliance with WB and ADB safeguard policies.</td>
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<tr>
<td>Environmental priorities</td>
<td>In provincial workshops stakeholders selected SESA priorities by ranking a list of environmental and social issues identified through case studies of mining subsectors and interviews to key informants. National priorities are the provincial priorities that happened to be selected in the four provinces of Sierra Leone.</td>
<td>Government considered environmental quality crucial for strengthening the sector’s competitive advantages. Customer perception surveys showed that environmental quality, after security, was a key determinant in the selection of destinations by tourists.</td>
<td>National environmental priorities evaluated using economic analysis to assess cost of current environmental degradation and through a representative national opinion poll survey. Multiple focus groups and stakeholder workshops were used to validate findings continuously.</td>
<td>CIA evaluated potential transboundary and national significant environmental impacts of three hydropower plants (NT1, NT2 &amp; NT3) in the Mekong river system and the Tonle Sap river system in Cambodia. Strategic issues for the SIA were identified by reviewing literature and finding recurrent themes in field site-visits.</td>
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### Guidance Notes on Tools for Pollution Management

**Scenarios of tourism expansion** were assessed against social and environmental impacts associated with those scenarios.

| **Capacity gap and institutional assessment** | SESA drew lessons from a gap study focused on capacity and inter-institutional coordination within different levels of government and between the government and traditional authorities. Formal and customary rules to access to natural resources were also assessed paying special attention to the situation of poor and vulnerable stakeholders. | Scenarios of tourism expansion were assessed against social and environmental impacts associated with these scenarios. Monitoring and follow-up of indicators developed through the SEA has resulted in continuous improvement of tourism policy over time. | CEA focused on capacity and institutional gaps within different levels of government as well as the sector’s legal and institutional framework and drew lessons from selective case studies. The assessment was complemented by the analysis of civil society organizations to account for the demand side of environmental governance. | SIA updated the evaluation of the sector’s legal and institutional framework and drew lessons from selective case studies. Response capacity to strategic issues and significant impacts was assessed by reviewing published plans and consultation with stakeholders and donor organizations. |
| **Discussion Forum / Policy Dialogue** | SESA engaged a very diverse stakeholder group comprising women and youth to discuss environmental and social issues in the context of the mining reform. A government inter-sectoral committee to steer the SESA process was also established. | For the SEA, a high level mechanism for inter-institutional coordination was established. Later this mechanism has been institutionalized as the inter-sectoral Commission for Tourism. | CEA engaged multiple stakeholders including the planning, environment and several sectoral ministries. A broader set of stakeholders were also consulted including regional authorities, the Congress, NGOs, academics, and private sector. Many of the CEA findings also were published in the media. | SIA engaged government, stakeholders and donors in discussion on institutional and capacity needs for long-term sector growth. CIA engaged stakeholders in discussions on regional impacts and development issues at different spatial and temporal scales. |
| **Political Economy Analysis** | The risk of SESA’s recommendations being reverted or distorted, if adopted, were analyzed in the context of governance weaknesses and power asymmetries among stakeholders. | Not used | Case studies on specific priority issues and institutional assessment included political economy analysis. A historical analysis provided insight into the political economy associated with current institutional set-ups. | Not used |
Sources


References and Resources on Strategic Environmental Assessment


