Strategic Environmental Assessment: Institutional Arrangements, Practical Experience and Future Directions

Barry Sadler
Institute of Environmental Assessment

International Workshop on Strategic Environmental Assessment
Organised by the Japan Environment Agency
Tokyo, November 26-27, 1998

Introduction

An increasing number of countries and international organisations now undertake some form of strategic environmental assessment (SEA). These processes vary widely as to their provision, requirements, scope of application and procedures. Recently a survey of the status and practice of SEA in OECD countries was undertaken by the Institute of Environmental Assessment (IEA) and the Japan Research Institute (JIR) on behalf of the Japan Environment Agency (Fuller et al, 1998).

This paper provides an overview of the results. It highlights key elements of the institutional frameworks established by national and international agencies, identifies key trends and issues of SEA practice and posits future directions for the development of SEA processes and performance. Additional information on these themes have been drawn from the intergovernmental forum on Policy and Environmental Assessment held in conjunction with the 1998 annual meeting of the International Association for Impact Assessment (Sadler 1998); the international seminar on Strategic Environmental Appraisal held by the UK as part of its presidency of the European Union (Sadler and Brook 1998); work undertaken as part of the Sofia Initiative, Environment for Europe Conference of Ministers (Sadler et al 1998); and a report in progress on SEA tabled at the recent meeting of the OECD Development Assistance Committee Working Party (Dalal-Clayton and Sadler 1998).

Background

The context and background of the development of SEA will be taken as understood. Basic definitions of SEA and statements of rationale for this approach can be found in the rapidly expanding literature on the field. So can a range of perspectives on the nature and scope of SEA processes. Other papers will probably elaborate these points and little purpose will be served by repeating them here.

However, a brief critique of the literature of SEA is worth making for purposes of the opening out discussion. The following points may not be widely shared either by SEA experts or other students of the field:

i) Much of the literature on SEA is promotional and prescriptive and should be treated with caution.
ii) There is considerable re-statement and recycling of premises and ideas about SEA and often an uncritical acceptance of them.

iii) Undue prominence is given to a narrow EIA-based approach to SEA which gives a limited perspective on its potential and on current practice and at worse contains a misguided prescription as to the form the process should take.
iv) Specifically, an EIA-based approach does not necessarily accord with the institutional realities of policy making and planning that are in place in different countries.
v) SEA practice, while still at a formative stage, is evolving more rapidly than is possibly appreciated.
vi) In this respect, much of value and interest in this field can be found outside formal SEA systems in other forms of policy appraisal and plan evaluation.
vii) Key studies and experiences of the application of the larger kit of SEA tools provide the best pointers to options and measures for process development for both informal and formal SEA systems and for EIA based approaches and other forms of appraisal.

Institutional Arrangements

Institutional arrangements for SEA differ more so than is the case with EIA systems applied at the project level. The IEA/JIR survey of SEA in some twenty OECD countries and five multi national agencies provided information on the institutional arrangements for SEA that are in place as well as on basic trends and process developments. The information was gathered through questionnaire analysis and from supporting documentation on law, regulation and procedure. The research design was based upon the international study of EA effectiveness and is designed to extend work undertaken on both EIA systems and on SEA process and practice (Sadler and Verheem 1996,1997).

- **Provision for SEA.** The majority of OECD countries now have some formal provision for SEA. Others do not, but either propose to introduce SEA or may be required to do so in the near future. These notably include member states of the European Union (e.g. Austria, Ireland, Luxembourg and Portugal), if the European Commission's draft directive on SEA comes into force (which is by no means certain at this time). Certain of the accession countries of Central and Eastern Europe (i.e. which have applied for EU membership and which have no provision for SEA) could be expected to follow suit also. In addition, all Member States of the EU and accession countries would need to make adjustments to their current provisions for SEA to implement the requirements of the EC draft directive.

- **Basis in Law, Regulation and Policy.** The type of provision for SEA varies. In some countries there is more than one form of SEA and the basis differs (e.g. Netherlands). Generally the main types of provision for SEA are:

i) in EIA law (e.g. France);
ii) in other planning regulations (e.g. Sweden);
iii) in a separate administrative decree or policy directive (e.g. Canada);
iv) in an equivalent process of policy appraisal and plan of evaluation (e.g. UK).

- **Objectives of SEA.** The objectives of SEA as stated in the laws, regulations or decrees established by countries can be grouped into four main categories:

i) integration of environmental considerations into policy, plan and programme decisions;
ii) provision of information on environmental effects;
iii) improve the effectiveness and efficiency of project EIA;
iv) promote or achieve sustainable development.

- **Scope of Application.** Some countries apply SEA to policies, plans and programmes (e.g. Netherlands, UK). Others apply SEA only to plans or programmes (the terms often are used interchangeably and mean different things in different countries). The sectors and activities of SEA are specified in some cases (e.g. Netherlands) but not in others (e.g. Canada). In specification and practice, land-use, water, waste, transport and energy are among the main sectors covered.

No country appears to provide a comprehensive coverage of policies, plans and programmes. Only a relatively small number of countries apply SEA at the policy level or to laws and regulations. The Canadian and Danish systems are the longest established in that regard and respectively apply to policies and plans submitted for Cabinet decision and to Bills sent to Parliament.

In most cases, countries report that SEA does not encourage social and economic issues. Several countries do require or expect cumulative effects and global changes and sustainability considerations to be covered as part of SEA. These include Canada, Denmark, Finland, Netherlands and the UK.

- **SEA Process and Procedure.** With one exception, SEA is conducted by the authority responsible for the proposed policy or plan. Typically, the process is self-administered. Ministry of Environment or other equivalent bodies oversee the SEA process in some cases (e.g. Canada) or provide procedural guidance and administrative support (e.g. Denmark). In the Netherlands, the information prepared as part of the SEA process for plans and programmes is subject to independent review by the EIA Commission. However, this body has no designated role or responsibility in overseeing the environmental (E) test of draft legislation. Instead a joint support centre has been set up by the environment and economic ministries to assist with the implementation of the E-test.

Generally, the process followed for SEA includes some form of screening, scoping, impact analysis and public reporting. In many countries, these stages are applied in practice even though they are not specified or required in law or regulation. EIA-based steps in the process are subject to greater modification and generalisation than in policy level SEA processes. The outlines remain, but the procedures are informal and integrated into the policy and planning process itself. In the case of New Zealand, SEA is not a separate or distinguishable process under the Resource Management Act or other policy framework (e.g. Strategic Results Area), rather the principles underpin and are incorporated into the approach to policy and plan preparation.

Trends and Issues of SEA Practice

Basic information on the level of SEA activity is difficult to gather. The responses by countries to the IEA/JRA survey are based on best estimates of the numbers of SEA undertaken, the time taken to complete the process and the cost of doing so. Accurate cost figures, in particular, proved impossible to assemble by experts in most countries and the estimates given must be treated with considerable caution. In sum, the statistics reported here provide only a preliminary indication of trends in SEA practice. However, at the moment they appear to be all that we have. Little information could be found elsewhere to corroborate or otherwise the findings reported here.

The total number of SEAs reported to be undertaken by each country varies from a few to more than five hundred. Annually, the median number of SEAs completed appears to be between 21 and 50. The time taken varies from three months or less to two years, with most SEAs completed within twelve months. With respect to average costs, the figures range from US five thousand to more than US five hundred thousand.

The most complete information on SEA practice comes from the United States. Under NEPA, EISs prepared for programmes and legislation have been filed with the US Environment Protection Agency since 1979. About 130 programmatic EISs have been completed mainly for resource, waste or other sectors in which proposals can be grouped generically, geographically or by stage of technological development. In addition, some 35 legislative EISs also have been completed; for example, in support of wilderness designations and arms treaties. By comparison, since 1970 over 27,000 EISs have been produced in the United States for projects and approximately 50,000 less detailed environmental assessments are prepared annually. These figures and comparisons are quite different from those typically reported in the critical literature.

SEA practice is one thing; its effectiveness is another. One measure of effectiveness is the extent to which the SEA process makes a difference to decision making. An earlier survey of selected case examples indicated that, up to 1996, SEA had a mixed track record in that respect (Sadler and Verheem, 1996). In the IEA/JIR survey, respondents were asked to provide their own rating of whether or not SEA processes resulted in changes to policies, plans or programmes. Most of them consider that it does so only sometimes or occasionally. This evaluation, assuming that it is correct, indicates that continued improvements to SEA practice are necessary.

Lessons of Experience and Ways Forward

As noted earlier, hands on experience provide the best pointers to how SEA process and practice can move forward. This section incorporates conclusions reached at the Christchurch and Lincoln seminars on SEA (cited in the introduction). Key lessons and insights are used to develop basic principles of sound practice on SEA. These are summarised in Box 1. The aspects elaborated below constitute an aide memoir to SEA process design and implementation.

- **Need for a Differentiated Approach**. Experience in a number of countries clearly demonstrates the importance of tailoring SEA to the character of decision making. Policy making processes, for example, are iterative and internalised; in such

cases, more informal, flexible types of appraisal can be appropriate. For plans and programmes, especially ones which initiate concrete projects and activities, structured EIA procedure and methodology are used successfully. There are various strategic decision making configurations and permutations and some degree of customised approach is appropriate.

- **Appropriate Provision for SEA.** Formal structured approaches to SEA of concrete plans and programmes are generally laid down in law. More flexible and informal approaches to SEA of policy or law are based on administrative order or Cabinet directive. In either case, a clear basis in law or policy is required and a systematic application is critical. For example, even a comprehensive law, such as NEPA in the US, may not be applied to higher level policies and plans because of lack of political support. On the other hand, where there is no formal provision, a lack of systematic take up of SEA by departments and agencies occurs (e.g. environmental appraisal in the UK).

- **Practical Support and Guidance.** Both are critical to effective implementation of SEA, especially in the introductory phase. The co-operative approaches followed in the Netherlands and Denmark are instructive examples. In the Netherlands, the Joint Support Centre assists officials in applying E-test to draft legislation. In Denmark, SEA guidance contains practical examples of applications to different types of bills and proposals.

- **Informing and Involving the Public.** Public information and consultation is an integral part of EIA of individual projects and of proven value. A number of countries have requirements for public input as part of SEA, notably at the level of land-use and sector plans and programmes. Normally however, policy level proposals are of less immediate concern to the general public and local communities than projects or plans which directly affect them. In these cases, interest is likely to come primarily from statutory consultees and non-government organisations. This places a premium on the responsible authority to ensure that the full range of values and interests likely to be affected by a proposal are represented or reflected in a SEA; e.g. by social impact assessment, preference elicitation methods, consensus building approaches.

- **Changing the Culture of Decision Making.** SEA is a mechanism for changing the ways decisions are made. From this standpoint, SEA is as much about raising awareness and building knowledge as it is about instituting structures and procedures. This process of change needs to be carried forward via:

i) political leadership, ideally beginning at the top;
ii) targets and incentives, to benchmark and assess the take up of good practice;
iii) training in the application of SEA methods and procedures.

- **Linking Ends and Means.** Whatever its scope, SEA is one among a number of policy instruments with the aim of ensuring that environmental considerations are taken into account in decision making. As far as possible, SEA should be applied with reference to and co-ordinated with other comparable instruments, as well as being integrated with the relevant policy and plan making processes. For example, SEA was recognised at the Fourth Ministerial Conference on Environment for Europe as an appropriate tool for integrating biological and landscape diversity objectives

into economic and social sectors. However, this objectives-led approach is noticeably absent from the EC draft directive on SEA.

- **Emphasising Aims and Reinforcing Outcomes.** Concerns with methodology and procedure often dominate discussion on SEA. Unquestionably how this process is carried out influences the results. However, far greater attention needs to be given to whether or not the objectives of SEA are being achieved; e.g. via monitoring and evaluation of the impact of the process on decision making and on protection of the environment. This analysis will present practical difficulties because of the time-scale for implementation of policies and plans and the diffuse nature of their environmental effects. Methods which might be used include: self reviews by agencies; periodic independent audit of government wide practice and outcomes; and empirical research to evaluate and compare selected case studies.

Principles of SEA Process, Design and Practice. No single model or best approach to SEA exists. There is however general measure of agreement on a number of underlying principles for the operation of all types of SEA processes. (See Box 1.) In conclusion, four main lessons can be drawn from these principles on ways to improve or introduce SEA:

i) tailor the approach to the purpose of decision making;
ii) provide practical start up help and assistance;
iii) build an empirical knowledge base systematically; and
iv) learn by doing when applying new methods and procedures.

Box 1 Basic principles of SEA

SEA should be:

- fit-for-purpose – the process should be customised to the characteristics of policy and plan making;
- objectives-led – the process should be undertaken with reference to environmental goals and priorities;
- sustainability-oriented – the process should facilitate identification of development options and proposals that are environmentally sustainable;
- integrated – the process should be related to parallel economic and social appraisals and tiered to project EIA where appropriate;
- transparent – the process should have clear, easily understood information requirements including provision for public reporting;
- cost effective – the process should achieve its objectives within limits of available information, time and issues;
- relevant – the process should focus on the issues that matter;
- practical – the process should provide information that is required for decision making.

Source: Sadler (1998)

Future Directions:
Relating SEA and Sustainable Development

The overriding requirement for the future is to link SEA more directly to sustainable development objectives and imperatives. A first step begins with the election of strong sustainability as a guide to decision making and the application of precautionary principle to maintain natural capital and avoiding environmental damage, especially irreversible change. Annex 1 sets out a framework of tests and criteria for this purpose, incorporating World Bank input and output rules, changes to land use and natural habitat and opportunity costs of development proposals[1].

Strong sustainability means no net loss of natural capital (i.e. keeping resources, stocks and ecological processes more or less at their present aggregate level, valuing them separately from other types of capital). SEA can be used to scope toward strong sustainability by testing development proposals against the criteria in Annex 1 and by specifying requirements for full impact mitigation and compensation. These are described elsewhere (Sadler, 1996). Essentially, all losses of resource and environmental damage must have an equivalent package of ecological gains and benefits, whether like-for-like replacement (e.g. fish habitat) or comparable or compensatory measures (e.g. afforestation to sequester a carbon dioxide emissions).

In the longer term, SEA should be incorporated into integrated appraisal of economic, environmental and social options. An interim step toward full cost analysis (FCA) might involve a combination of four approaches (Goodland and Sadler, 1996):

i) sound economic analysis of development proposals at the micro level to ensure that environmental costs are internalised;
ii) environmental accounting at the macro economic level to establish the real of balance sheet of natural capital assets and losses (treating depreciation of resource stocks as environmental depreciation);
iii) restructuring SEA and EIA as processes for sustainability assurance rather than impact minimisation (e.g. along lines proposed by the International study of EA effectiveness); and
iv) taking an explicit “effects-based” approach to environmental regulation and management systems.

Looking further ahead, the construction of scenarios offers a potentially important tool for sustainable development planning and policy making. Whereas forecasts project patterns from the past into the future, scenarios outline alternative options to aid strategic thinking about the likely environmental, social and economic consequences of current and possible future trends and the consequences of making particular policy choices. Different scenarios are often developed for the near future (less than five years), the medium term (ten to fifteen years) and the longer term (twenty-five years or more). The longer the period for which projections are made, the more problematic the task, not least because of the range of possible futures that

[1] The test of land-use conversion is used because such changes are an early indicator of potential of cumulative loss and deterioration. The opportunity cost rule testing incorporates the principle of total economic value, directing attention to alternatives and requirements for analysis of option and intrinsic values.

unfold from multiplying branch points. However, unless we envisage what might possibly happen as a result of continuing to do business as usual, we will be myopic as to the bigger picture issues of sustainable development which are captured by the IPAT relationship (Impact = Population x Affluence x Technology). This is the essence of SEA for the future.

References

Dalal-Clayton B and B Sadler, 1998. The Application of Strategic Environmental Assessment in Developing Countries. Draft Report, International Institute for Environment and Development, London

Fuller K, S Rendall and B Sadler, 1998. The Status and Practice of Strategic and Environmental Assessment. Report to the Japan Environment Agency

Sadler B, 1998. Institution Arrangements for Strategic Environmental Assessment. Paper prepared for Intergovernmental Forum on Environmental Assessment of Policy, Christchurch, New Zealand, April 1998.

Sadler B and C Brooke, 1998. Strategic Environmental Appraisal. Report of the Intergovernmental Seminar, Lincoln 27-29 May 1998. Department of the Environment, Transport and the Regions, London.

Sadler B, J Dusik and S Casey-Lefkowitz. 1998. Overview of Experience with Strategic Environmental Assessment in Central and Eastern Europe in Micklic N. et al. eds. Strategic Environmental Assessment in Transitional Countries, Emerging Practices. The Regional Environmental Centre for Central and Eastern Europe, Szentendre, Hungary pages 5-12.

Sadler B and R Verheem, 1996. Strategic Environmental Assessment Status, Challenges and Future Directions. Ministry of Housing, Spatial Planning and the Environment, Publication number 54, The Hague, Netherlands.

Sadler B and R Verheem, 1996. Country Status Reports on Environmental Impact Assessment. The Status of EIA Systems, Results of an International Survey. The Netherlands Commission for Environmental Impact Assessment, Utrecht.

Annex 1

Environmental Sustainability Tests for SEA of Polict, Plan and Programme Proposals	
Precautionary-Based Principles	**Application to SEA**
For use of Renewables	
• Harvest rates or renewable resource inputs should be within regenerative capacity of the natural system that generates them.	Identify effect on use of renewables (e.g. timber, fish).
For use of Non Renewables	
• Depletion rates of non-renewable resource inputs should be equal to the rate at which renewable substitutes are developed by invention and investment.	Identify effect on non-renewable resources (energy, minerals, raw materials). Also describe effects on energy consumption and mobility.
For Waste and Pollution	
• Waste emissions should be within the assimilative capacity of the environment without unacceptable degradation of its future waste absorptive capacity or other important services.	Identify effect on quantity and quality of waste flows and emissions to soil, air and water. Also describe effects on quality of products and production process, e.g. lifespan and composition of product.
For Conversion from lower to higher intensity of landuse	
• Quantity: No net loss of natural habitat.	Identify the effect on use of space and existing functions (i.e. land use, wildlife corridors).
• Quality: Conservation of biodiversity (ecosystems, populations, gene pools).	
For Clarifying Opportunity Costs	
• Avoid irreversible changes and maintain future options.	Identify effect on option (non-use) values of the environment, including the benefits of maintaining its current state.
Source: Sadler and Verheem, 1998	