
Author: Claire Pettit
Position: Senior Technical Advisor – CEAM
Organisation: The Institute of Environmental Management and Assessment
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Environmental Impact Assessment (EIA)

Environmental Impact Assessment (EIA) is a tool that is used to consider the likely significant environmental effects of a proposed development. EIA as an environmental management tool is used around the world in developed and developing nations. Whilst this e-brief focuses on EIA in the UK, the principles of EIA that it identifies are relevant to any EIA in any country. EIA is an iterative process. The key stages in the process include proposal identification, screening, scoping, impact assessment, mitigation, review, decision making and follow up. Good EIA is integrated into the project development process and is not seen as a barrier to development.

What is EIA?

EIA can be defined as “a systematic process to identify, predict and evaluate the environmental effects of proposed actions and projects.”¹ The EIA process is applied prior to major decisions and commitments being made and ideally is integrated into the project design process.

The role of EIA is to inform the decision maker of the significant environmental impacts that are likely to occur if the development proposal is granted consent. The IEMA’s Guidelines for Environmental Impact Assessment identify a number of immediate and long term objectives of EIA.

“Immediate objectives of EIA are to:

- improve the environmental design of the proposal;
- check the environmental acceptability of the proposals compared to the capacity of the site and the receiving environment;
- ensure that resources are used appropriately and efficiently;
- identify appropriate measures for mitigating the potential impacts of the proposal; and
- facilitate informed decision making, including setting the environmental terms and conditions for implementing the proposal.

Long term objectives of EIA are to:

- avoid irreversible changes and serious damage to the environment;
- safeguard valuable resources, natural areas and ecosystem components;
- enhance the social aspects of proposals; and
- protect human health and safety.”²

Background to EIA

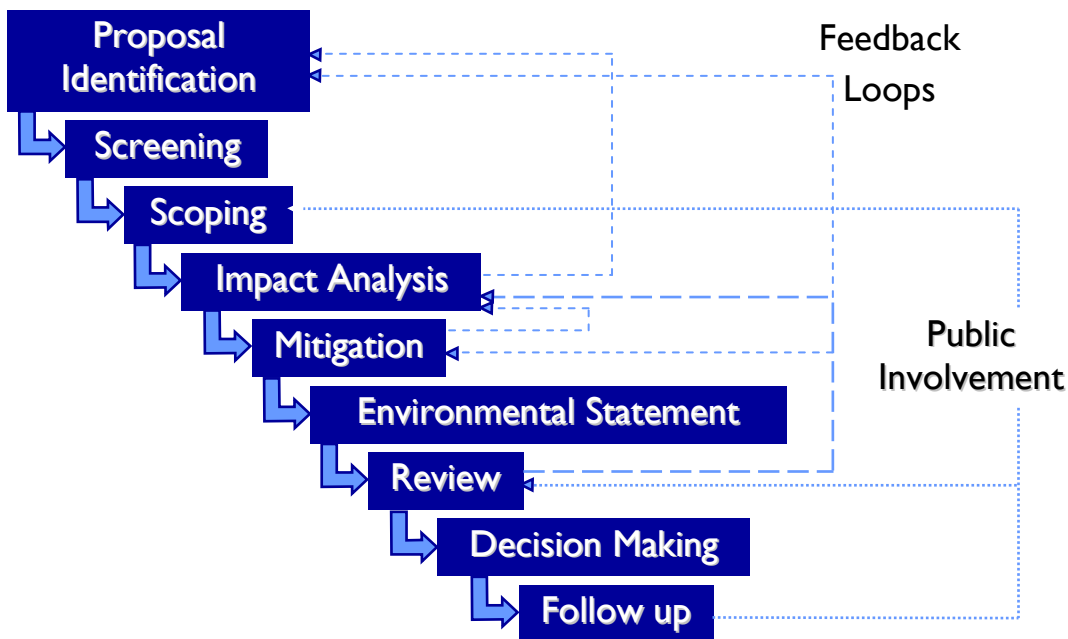
¹ Sadler, B., Fuller, K., et al (2002), *UNEP Environmental Impact Assessment Training Resource Manual*, 2nd Edition, UNEP, Geneva.

² Based upon Sadler & Fuller et al (2002) contained in Fuller, K. et al (2004), *Guidelines for Environmental Impact Assessment*, IEMA, Lincoln

EIA was introduced to address concerns regarding the effects that major development projects were having on the environment. Prior to the introduction of EIA although major development proposals underwent an appraisal process, the appraisal did not consider environmental factors and therefore one of the initial aims of EIA was to redress this balance. EIA was first introduced in the USA in 1969. The benefits associated with the process were quickly recognised and within 20 years EIA had become established world wide as an important environmental decision making tool. EIA was first introduced into the European Union as a directive in 1985. This directive was subsequently amended in 1997.

The EIA Process

The EIA process is an iterative one containing many feedback loops to allow the development proposal to be continually refined. So whilst the process of EIA follows a number of commonly accepted steps, it does not observe a linear pattern. The EIA process is summarised in the figure below.



Proposal Identification

A large number of decisions are made at the project identification and proposal development stage. Decisions are made regarding:

- the location of the development
- the land uses the development will cater for
- the scale, layout and design of the development.

If environmental issues are considered at this point in the development process, impacts can be significantly reduced and in some cases removed altogether. This can benefit the developer by reducing the need for costly mitigation measures at a later stage.

Whilst not a legal requirement in the UK, good practice dictates that at this stage an assessment of reasonable alternatives to the development is undertaken. The advantages and disadvantages of the alternatives should be investigated, not only in environmental terms but also in terms of cost effectiveness, reasonableness and feasibility. The assessment of alternatives will result in the development of a preferred project proposal, which should then be the subject of a screening assessment.

Screening

Screening is undertaken to determine if a development proposal requires an EIA or not. The purpose of screening is to ensure that all development proposals likely to result in significant environmental effects are subject to an EIA. Annex III of 'Council Directive 97/11/EC amending Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment'³ lists a number of selection criteria that should be considered when screening a development proposal for EIA. These criteria include:

- development characteristics
- characteristics of the location
- characteristics of potential effects

Scoping

During the scoping stage the key issues that the EIA will address are identified. Effective scoping will ensure that the EIA focuses on those areas where significant effects are likely, therefore preventing resources being used to address issues where no significant effects are likely. A good scoping process will consist of three key components:

- *consultation* with relevant stakeholders and interested parties to provide them with information on the development proposal and what technically appear to be the key issues and to find out what their key concerns are regarding the location and the development proposal;
- *analysis* of the issues identified during *consultation* to determine which are likely to be significant and therefore must be included within the scope of the EIA; and
- *negotiation* with the decision makers and other interested parties to refine the scope of the EIA.

There are a number of issues that are considered (to varying depths) within the scope of the majority of EIAs. These include:

- landscape and visual
- ecology
- land use
- traffic and transport
- air quality
- noise
- water
- ground conditions
- archaeology
- cultural heritage

Impact Analysis

To enable the likely impacts of a development proposal to be identified and analysed the baseline environmental conditions must first be established. This can be done by utilising existing information or by collecting new information. The most common approach includes both of these techniques.

Impact analysis involves characterising the impact in terms of its likely nature, spatial and temporal distribution, duration, frequency, reversibility and magnitude. Finally a judgement must be made as to whether the impact is likely to be significant or not.

A large number of impact analysis techniques exist, each have their advantages and disadvantages. Impact analysis techniques can be quantitative or qualitative. Quantitative

³ http://europa.eu.int/comm/environment/eia/full-legal-text/9711_consolidated.pdf

techniques tend to involve a prescriptive method being set out and followed whereas qualitative techniques rely less upon a prescribed method instead relying heavily upon professional judgement. The nature of the environmental media being assessed will determine the most appropriate impact analysis technique.

Mitigation

Where impact analysis identifies that a development is likely to give rise to significant environmental impacts, mitigation measures are proposed to avoid, reduce and if possible, remedy them. As mentioned briefly in the section on proposal identification above, mitigation measures can be incorporated into the design of the development. 'End of pipe' mitigation measures can also be incorporated into the development at a later stage.

Environmental Statement

The environmental statement is the vehicle used to communicate the results of the EIA to the decision maker and other stakeholders in the development process. The environmental statement is a legal document and by UK law must include, at least, the following information⁴

- a description of the project comprising information on the site, design and size of the project
- a description of the measures envisaged in order to avoid, reduce and, if possible, remedy significant adverse impacts
- the data required to identify and assess the main effects which the project is likely to have on the environment
- an outline of the main alternatives studied by the developer and an indication of the main reasons for this choice, taking into account the environmental effects
- a non technical summary of the information mentioned in previous bullet points

The environmental statement should objectively document the EIA process and findings giving equal prominence to positive and negative impacts relative to their importance. The ES should be clear and concise. Because non specialists are likely to read the document technical language should be avoided. Any necessary technical information should be provided in appendices.

Review

Quality control is an important stage in any EIA. A review of the quality of the environmental statement is a way of demonstrating that:

- the ES has met all the appropriate legal requirements
- the ES contains sufficient information to allow a decision to be made
- the ES is consistent with current good practice

A review of the ES can be undertaken at the draft stage or after finalisation. The earlier the review takes place the greater the influence it can have over the quality of the ES.

Decision Making

This is the point in the process where the development is either granted planning permission or not. It is necessary at this stage for the environmental statement to be made available to a number of statutory consultees, the public and other stakeholders. When making a decision on the application decision makers are required to consider all relevant environmental information, including the environmental statement and the opinions of statutory consultees, the public and other stakeholders. Environmental information is only one of many material considerations that the decision maker must take into account. The decision maker will also

⁴ As identified in article 5 (3) of the EIA Directive

consider social and economic information, current planning policies and the relevant local development framework/local plan. The final decision will be based upon all of these things.

Follow Up

Follow up is very important in EIA. It is the stage where the mitigation measures proposed within the environmental statement are actually implemented. It is also the stage where any necessary monitoring of impacts is undertaken. A common tool for ensuring that the measures proposed are implemented is a management plan. Management plans demonstrate a clear commitment to monitoring and mitigation measures and illustrate that the developer values the environment and the EIA process.

Conclusion

The above provides a brief outline of what EIA is, its purpose and the EIA process. A more detailed account is given in *The Guidelines for Environmental Impact Assessment* published by the IEMA and available through our [publications shop](#).

EIA is continually developing through:

- amendments to the Directive (see e-briefing on public participation)
- increasing levels of practitioner knowledge and experience
- the production of new guidance
- technological developments
- the integration of further disciplines such as health and socio-economic
- the increasing importance of sustainable development principles
- greater environmental awareness of politicians, planners and the public.