

Topic 8—EIA reporting

Objectives

To understand the purpose of preparing and submitting an EIA report.

To consider the relationship of the report to decision-making and how the information contained in an EIA report can be made more effective for this purpose.

Relevance

The EIA report or impact statement is a keystone document. It assembles the information that assists:

- the proponent in managing the impacts of the proposal;
 - the responsible authority in decision-making and condition setting; and
 - the public in understanding the likely impacts of the proposal.
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Timing

Two hours (not including training activity). However this assumes that participants have already read the sample EIA reports which should have been handed out at registration.

Important note to trainers

You should design your presentation with the needs and background of participants in mind, and concentrate on those sections most relevant to your audience. The session presentation timings are indicative only.

Time taken for the training activities can vary enormously depending on the depth of treatment, the existing skills and knowledge of participants and the size of the group.



Information checklist

Obtain or develop the following materials, as appropriate:

- copies of locally produced EIA reports;
- copies of EIA reports from other jurisdictions covering types of proposals that would be of interest to the course participants;
- any local guidelines or requirements for EIA reports;
- procedures for the review of EIA reports (see Topic 9 – *Review of EIA quality*);
- contact names and telephone numbers of people, agencies, organisations and environmental information/data resource centres able to provide assistance in reporting; and
- other resources that may be available, such as courses in specific analytical or methodological techniques, videos, journal articles, computer programs, lists of speakers, and case studies.

Session outline

Welcome participants to the session by introducing yourself and getting them to introduce themselves. Check that they have received copies of sample EIA reports at registration and have read these. Outline the overall coverage of the session, its objectives and why these are important in the EIA process.

The EIA report or impact statement is a primary document for decision-making. It organises the information obtained and synthesises the results of the studies and consultations undertaken. A full yet concise account should be given of the likely environmental impacts of a proposal, the recommended measures for mitigating and managing them and the significance of any residual effects.

The audience for an EIA report includes the authorising and implementing agencies, other interested parties and the affected public. Because of its importance as a communications tool, the EIA report needs to be well organised and clearly written. An effective report will be written both in plain language for non-experts but also to appropriate technical standards.

Introduce the session by exploring with participants the various terms that may be used to describe an EIA report, and indicate local practice in this regard. Discuss who has responsibility for report preparation.



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A number of different names are used for the report that is prepared on the findings of the EIA process. The generic term '*EIA report*' is used here. Other terms commonly used for the same document include environmental impact statement (EIS) and environmental statement (ES). Further variations may be introduced by the terminology used in different countries. Despite the different names, EIA reports have the same basic purpose, approach and structure.

Usually, the proponent is responsible for the preparation of the EIA report. The information contained in the report should meet the terms of reference established at the scoping stage of the EIA process (see Topic 5 - *Scoping*). The terms of reference set out the information that is to be submitted to the decision-making body or responsible authority.

Introduce the purpose of the EIA report and the features that will make it successful.

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The purpose of the EIA report is to provide a coherent statement of the potential impacts of a proposal and the measures that can be taken to reduce and remedy them. It contains essential information for:

- the proponent to implement the proposal in an environmentally and socially responsible way;
- the responsible authority to make an informed decision on the proposal, including the terms and conditions that must be attached to an approval or authorisation; and
- the public to understand the proposal and its likely impacts on people and the environment.



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A successful EIA report that meets these aims will be:

- *actionable* – a document that can be applied by the proponent to achieve environmentally sound planning and design;
- *decision-relevant* – a document that organises and presents the information necessary for project authorisation and, if applicable, permitting and licensing; and
- *user-friendly* – a document that communicates the technical issues to all parties in a clear and comprehensible way.

Introduce the typical elements of an EIA report, indicating those that are common to many countries even though the particular requirements may differ.

In many countries, the information to be included in an EIA report is specified in legislation, procedure or guidance. Alternatively, the format may be established by custom or reference to the World Bank's sample outline of an EIA report. Typically, the content of an EIA report will be prepared in accordance with specific terms of reference established during the scoping process. It may also include additional issues and other matters that have emerged as a result of EIA studies and need to be taken into account in decision-making.



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An EIA report typically includes many or all of the following headings and items:

- executive or non-technical summary (which may be used as a public communication document);
- statement of the need for, and objectives of, the proposal;
- reference to applicable legislative, regulatory and policy frameworks;
- description of the proposal and how it will be implemented (construction, operation and decommissioning);
- comparison of the proposal and the alternatives to it (including the no action alternative);

- description of the project setting, including the relationship to other proposals, current land-uses and relevant policies and plans for the area;
- description of baseline conditions and trends (biophysical, socio-economic etc), identifying any changes anticipated prior to project implementation;
- review of the public consultation process, the views and concerns expressed by stakeholders and the way these have been taken into account;
- consideration of the main impacts (positive and adverse) that are identified as likely to result from the proposal, their predicted characteristics (e.g. magnitude, occurrence, timing, etc.) proposed mitigation measures, the residual effects and any uncertainties and limitations of data and analysis;
- evaluation of the significance of the residual impacts, preferably for each alternative, with an identification of the best practicable environmental option;
- an environmental management plan that identifies how proposed mitigation and monitoring measures will be translated into specific actions as part of impact management*; and
- appendices containing supporting technical information, description of methods used to collect and analyse data, list of references, etc.

* Note the environmental management plan can be included in or annexed to the report; in some cases it may be a separate document.

Describe the elements of an EIA report in detail. Where possible, show examples of good practice for each one.

Executive or non-technical summary



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The executive summary gives a concise description of the main findings and recommendations. It is not meant to summarise all of the contents of the EIA report. Instead the focus is on the key information and options for decision-making. Except for very large proposals, the executive summary should be kept short, no more than seven pages and preferably less. Often, the executive summary is the only part of the report that decision makers and most people will read. It can be written for distribution to the public as an information brochure.



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An executive summary should describe:

- the proposal and its setting;
- the terms of reference for the EIA;
- the results of public consultation;
- the alternatives considered;

- major impacts and their significance;
- proposed mitigation measures;
- the environmental management plan; and
- any other critical matters that bear on the decision.

Need and objectives of the proposal

A clear statement of the need for and objectives of the proposal should be given. Typically, need is substantiated by reference to relevant policies and plans. Reference also can be made to the demands and issues that the proposal is intended to address, the purpose that will be achieved, and the benefits that are anticipated.

Legal and policy framework

There is usually a brief description of the legal and policy framework that applies to the proposal being assessed. Relevant aspects of EIA procedure can be cited, together with any other requirements or considerations that need to be mentioned. The Terms of Reference for the EIA should be summarised, explaining the reasons for any variation with them. A copy of the complete Terms of Reference should be appended.

Description of the proposal and its alternatives

A description of the proposal and the alternatives indicates the elements and main activities that will take place during project construction, operation and decommissioning. This section of the report draws attention to the major differences between the alternatives, including the no-action alternative. It can also include information on:

- the project setting and the major on-site and off-site features (e.g. access roads, power and water supply, etc.);
- resource use, raw material inputs and emission and waste discharges;
- operational characteristics, processes and products;
- the relationship of the technical, economic, social and environmental features of the proposal; and
- comparison of alternatives and options (such as size, location, technology, layout, energy sources, source of raw materials) within the above context.

The above information is given in only enough detail for impact prediction and mitigation measures to be understood and appreciated. Wherever appropriate, maps, flow diagrams and other visual aids are used to summarise information.



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Description of the affected environment

A concise description is needed of the biophysical and socio-economic conditions of the affected environment. Baseline information should include any changes anticipated before the project begins. Current land use and other proposed development activities within the project area should also be taken into account. This indicates how the proposal relates to current policies and plans and whether or not it is consistent with them.

Baseline information is often covered in too much detail in an EIA report. It should provide only the necessary background and baseline against which to understand impact predictions. Key aspects of the affected environment that need to be included for this purpose include:

- spatial and temporal boundaries;
- biophysical, land use and socio-economic conditions;
- major trends and anticipated future conditions should the proposal not go ahead; and
- environmentally-sensitive areas and valued resources that may need special protection.



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Public consultation and inputs

A concise, yet complete, statement of the nature, scope and results of public consultation is an important section of the report. These particulars are sometimes overlooked or aspects are insufficiently described. Depending on the provision made for public consultation, some or all of the following points can be included:

- identification of the interested and affected public;
- the method(s) used to inform and involve stakeholders;
- analysis of the views and concerns expressed;
- how these have been taken into account; and
- outstanding issues and matters that need to be resolved.



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Environmental impacts and their evaluation

This section of the EIA report evaluates the potential positive and adverse impacts for both the proposal and its alternatives and for each component of the environment identified as important in the terms of reference. Impact characteristics are described as predictions of magnitude, severity, occurrence, duration, etc. The significance of residual impacts that cannot be mitigated should be explicitly stated.

Information contained in this section includes:

- prediction of each major impact, its characteristics and likely consequences;



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- consideration of their compliance with environmental standards and policy objectives;
- recommended measures for avoiding, minimising and remedying the impact;
- evaluation of significance of the residual impacts (stating the standards or criteria used); and
- limitations associated with impact prediction and evaluation, as indicated by the assumptions made, gaps in knowledge and uncertainties encountered.

The section can also indicate how environmental data was gathered, the predictive methods used and the criteria used to judge significance. It is helpful to present information in summary form to give readers an overview of the impact characteristics of the proposal and the alternatives to it. One possible way to do this is to display the information in tables (see below) as suggested in Topic 6 – *Impact analysis*. Both direct and indirect impacts, including potential cumulative effects, should be highlighted.

Impact characteristic summary table (prepare for each alternative)

Alternative No.	IMPACT TYPE		
IMPACT CHARACTERISTIC	air quality	health	etc.
nature			
magnitude			
extent/location			
timing			
duration			
reversibility			
likelihood (risk)			
significance			

Comparative evaluation of alternatives and identification of the environmentally preferred option

In this section, the proposal and the alternatives are systematically compared in terms of adverse and beneficial impacts and effectiveness of mitigation measures. As far as possible, the trade-offs should be clarified and a clear basis for choice established. The environmentally preferred option should be identified and reasons given for the selection made.



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A comparative evaluation can be undertaken by reference to:

- adverse and beneficial impacts;
- effectiveness of mitigation measures;
- distribution of benefits and costs, locally and regionally; and
- any other opportunities for community and environmental enhancement.

When used, formal methods of analysing alternatives should be briefly described and their assumptions and limitations noted.

Environmental management plan (EMP) – also called an impact management plan)

This section is the ‘action oriented’ part of the EIA report. It summarises recommended mitigation measures (and any opportunities for environmental enhancement) and describes how they will be implemented. An EMP is primarily about the actions that will be taken to monitor and manage the impacts during project implementation and operation. The plan should contain:

- recommended mitigation measures;
- assignment of responsibilities for plan implementation;
- schedule of the actions to be taken;
- programmes for surveillance and monitoring against agreed targets;
- an impact management strategy to correct larger than predicted changes;
- contingency and emergency response plans, where necessary; and
- reporting, audit and review procedures.

The EMP plan can also contain any institutional strengthening, capacity building and training requirements that are necessary to implement the components of the plans.

Appendices

Appendices contain the information that may be needed for reference or for detailed review by technical experts. Baseline data, technical information and description of methodologies can be included in appendices when they are important to an understanding of the basis of the EIA report but are not suitable for the main text. The technical appendices should be keyed to the organisation of the EIA report. In addition, appendices may contain some or all of the following:

- glossary and explanation of acronyms;
- listings of individuals and agencies consulted during the EIA;
- sources of data and information and a list of all reference material used;



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- EIA study team members and other contributors to the report; and
- terms of reference for the EIA.

Describe some of the common shortcomings encountered in the preparation of EIA reports. Ask the participants to contribute examples from their own experience.

An EIA report should be complete, easily understood, objective, factual and internally consistent. These objectives are difficult to achieve in a process that involves many contributors working to tight deadlines. Even so, far too many EIA reports fall short of meeting their basic purpose of providing the necessary and relevant information for decision-making and clearly communicating key findings to the public and other interested parties.

Higher standards could be achieved by addressing some of the shortcomings and deficiencies that are commonly found in EIA reports. The following list was compiled primarily from the experience of the Netherlands EIA Commission, which is an independent body responsible for the review of EIA reports.

The need for a project cannot be justified

Example: An EIA report substantiates the need for offshore exploratory drilling in a remote and sensitive Arctic Sound primarily in terms of energy security and economic development. The broader opportunity costs of opening the area to development are overlooked.

The objective and alternatives are too narrowly stated

Example: An EIA report on a proposed by-pass road identifies the objective as relieving traffic congestion, failing to consider broader transport issues and alternatives.

The description of the proposal does not cover the key features

Example: An EIA report describes the proposed construction of an industrial plant but omits information about construction of a pipeline and other facilities to transport and handle raw materials and finished products to and from the plant.

Selection of alternatives does not take into account environmental aspects

Example: The EIA report on a car racing circuit in a coastal dune landscape only considers alternatives meeting motor sport requirements, visitor 'needs' and public safety regulations. It overlooks environmental considerations, such as noise abatement, protection of land surface and dune ecology.

Key problems affected by the proposal are not described

Example: An EIA report describes the proposed construction of a coal-fired power plant using surface water as cooling medium. It does not divulge that



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the surface water body is already used by other industrial activities for this purpose to the limit of its cooling capacity.

Sensitive elements in the affected environment are overlooked

Example: An EIA report for a pipeline project does not indicate that the proposed alignment will dissect certain areas of ecological value.

Environmental target values and standards are not properly taken into account

Example: An EIA report for an extension of an airport describes the impacts up to the standard of 25 per cent of people seriously affected by aircraft noise, whereas the target value aims at 10 per cent of people seriously affected.

Alternatives do not comply with environmental regulations and standards

Example: An EIA report for a sanitary landfill indicates that the soil types in the area are very diverse, ranging from sand and clay to peat. The alternatives do not take into account the large differences in compaction and subsidence of these soil types, with subsequent failure of underlining and drainage systems.

Appropriate mitigating measures are not considered

Example: An EIA report for a sanitary landfill does not describe a system for collecting methane gas produced in the landfill, even though greenhouse gas emissions contribute to climate warming and should be capped at current levels.

The alternative offering the best protection to the environment is not described or insufficiently described

Example: An EIA report for a bridge or seabed tunnel across an estuary does not examine the alternative of a drilled tunnel underneath the estuary, which will have a much lower adverse impact on the environment.

Serious environmental impacts or risks are not described or are incorrectly described

Example: An EIA report for a sanitary landfill in an area with very variable soil conditions does not describe the environmental risks and consequences of a possible failure of the underlying sealing and drainage systems.

Insufficient or outdated prediction models are used

Example: An EIA report on an urban development scheme makes use of a mobility prediction model using national averages, although local data is available and would permit a more precise prediction to be made.

When comparing alternatives, incorrect conclusions are drawn

Example: An EIA report for a regional management plan for the disposal of municipal sewage sludge compares various alternative methods for



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disposal. One alternative involves composting the sludge into a low-grade soil additive. The comparison of the alternatives in the EIA report describes this method as an important form of disposal because it greatly reduces sludge volume. However, no account is taken of the limited potential for use of the product due to the high heavy metal content of the sludge.

Outline some general guidelines that will help to ensure that the effective preparation and production of the report. Ask the participants to add to these guidelines based on their own experience.

Usually, EIA reports are the product of a team of consultants and specialists. Most proposals have a number of different types of potential impacts (biophysical, socio-economic, health, etc) and their analysis requires a range of expertise. An EIA Project Manager or team leader has responsibility for forming an interdisciplinary team and managing its work (see Topic 12 – *EIA project management*).

The EIA report is a statement of the likely impacts of a proposal and how these can be mitigated and managed. It is a decision document, not a compendium of technical information. As such, the EIA report should be both rigorous and easily understood. It must effectively communicate the findings to the public at large, local people affected by the proposal and interest groups, as well as decision-makers who are the primary users.

As described earlier, the executive summary is particularly important as the only section of the EIA report that will be widely read. The *precis* of significant findings presents the reporting team with the opportunity to describe complex material in a few pages. It is easy to call for, but hard to do. Tables, diagrams and caption materials that capture and compare significance impacts can help. All have their place but none can be effective without the preliminary work of producing a clear and comprehensive EIA report, which is based on rigorous studies, sound data and consistent analysis and interpretation.

Distribution of the report

Usually, EIA reports are available to the public and distributed widely. However, the institutional arrangements for this purpose differ. As a general guide, the EIA report should be accessible to all those who have an interest in, or are affected by, the proposal. Where public consultation has been extensive, it can be useful to lodge the EIA report in public institutions and distribute the summary to all individuals who have registered their names. Other measures may be needed in many developing countries, particularly where proposals directly affect poor and non-literate communities.

Other forms of presentation

Depending upon the circumstances, other forms of presentation of the findings should be considered. These include:

- use of local media, radio and television;
- community report back;
- newsletters, information sheets;
- walk-in and storefront displays; and
- feedback through political representatives, local chiefs or other power structures, as appropriate.

Make brief reference to the fact that a report for a Strategic Environmental Assessment (SEA) could follow similar lines for certain types of plans and programmes, but with greater variation for policies. Also note that in SEA greater emphasis is placed on identifying generic alternatives (see Topic 14 – *Strategic Environmental Assessment*).

Include a training activity to reinforce the topic (if desired).

Conclude by summarising the presentation, emphasising the key aspects of the topic that apply locally.

Reference list

The following references have been quoted directly, adapted or used as a primary source for major parts of this topic.

World Bank (1991) *Environmental Assessment Sourcebook*. Volume 1. World Bank Technical Paper No. 139, World Bank, Washington D.C.

Boyle, J and Mubvami, T. (1995) *Training Manual for Environmental Impact Assessment in Zimbabwe*. Department of Natural Resources Ministry of Environment and Tourism, Zimbabwe

Scholten J (1997) Reviewing EISs/EIA Reports. In *Report of the EIA Process Strengthening Workshop* (pp. 61-90). Environment Protection Agency, Canberra.

Further reading

OECD/DAC (1994) *Towards Coherence in Environmental Assessment: Results of the Project on Coherence of Environmental Assessment for International Bilateral Aid*. 3 Vols. Canadian International Development Agency, Ottawa.

Scott Wilson Ltd. (1996) *Environmental Impact Assessment: Issues, Trends and Practice*. Environment and Economics Unit, UNEP, Nairobi.

Training activities

Training activities will be more instructive if they are framed around a local proposal. Consider inviting prospective course participants to make a presentation if they have expertise in this area of EIA.

Discussion themes

- 8-1 How are EIA reports best structured to make them useful to their target audience? What specific changes to EIA reports are required locally?
 - 8-2 What are the main shortcomings of EIA report writing? How can the style of presentation be improved to correct common deficiencies that have been identified internationally and locally?
 - 8-3 What can be done to improve the quality and readability of EIA reports?
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Speaker themes

- 8-1 Invite a speaker who is experienced in preparing or, preferably, reviewing the quality of EIA reports to discuss the strengths and weaknesses of a range of existing reports.
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Group Activity 8–1: EIA reporting

Title: Writing executive summaries

Aim: To gain an appreciation of how to write concise and relevant summaries of EIA reports.

Group size: Individual exercise

Duration: Half-day. (Reasonably short EIA reports should be handed out well before the activity commences, preferably at registration, so that there is time for them to be read by participants.)

Resources required:

- ❑ An EIA report for each participant, preferably with the executive summary removed and available for inspection later.
- ❑ A handout describing the key elements of an executive summary that would be appropriate for the local process.

Description of activity

- ❑ The participants should have already read the EIA report. They are to produce an executive summary that is not to exceed four pages (about 1500 words).
 - ❑ Participants can compare their summary with the one written for the report and analyse which summary better meets the needs of the decision-makers, the public and the proponent.
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Group Activity 8–2: EIA reporting

Title: Preparing an environmental management plan from an EIA report

Aim: To gain an appreciation of how to assess the adequacy of the report as a basis for impact monitoring and management of a proposal.

Group size: Pairs

Duration: Half-day. (The EIA reports should be handed out well before the activity commences, preferably at registration, so that there is time for them to be read by participants.)

Resources required:

- ❑ An EIA report for each pair of participants.

Description of activity:

- ❑ The participants are to review the EIA report to determine the range of activities and impacts that require management and monitoring.
 - ❑ From this they can attempt to prepare an environmental management plan noting any inadequacies in the EIA report.
 - ❑ Conclude with reporting back by groups to the group as a whole and a discussion summarising the activity.
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Different names for the same document

- Environmental Impact Assessment report (EIA report)
- Environmental Impact Statement (EIS)
- Environmental Statement (ES)
- Environmental Assessment report (EA report)
- Environmental Effects Statement (EES)

(Describe local usage: enter local terminology)



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The EIA report is a statement that assists:

- the proponent to plan and design;
- the responsible authority to decide; and
- the public to understand



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A successful EIA report will be:

- actionable – by the proponent
- decision-relevant – to the responsible authority
- user-friendly – for the public



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Main elements of an EIA report

- executive summary
- need for and aims of the proposal
- description of proposal and alternatives
- description of affected environment and community
- public consultation and views
- main impacts and their mitigation
- evaluation of significant residual impacts
- environmental management plan



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Preparing an executive summary

- target to audience
- keep it short
- make it clear and consistent
- avoid jargon
- summarise key findings





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An executive summary should outline:

- the proposal and its setting;
- terms of reference of the EIA
- results of public consultation
- alternatives considered
- major impacts and their significance
- mitigation and management measures
- any other critical matters



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EIA Report – description of the proposal includes:

- main elements, phases and alternatives
- requirements for materials, water, energy, equipment
- operational processes and products
- summary of technical, economic and environmental features
- comparison of options (e.g. size, location, etc.)



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EIA Report – description of the affected environment includes:

- spatial and temporal boundaries
- baseline conditions – biophysical, land use, socio-economic
- key trends and anticipated conditions
- relationship to other policies, plans and proposals



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EIA Report – results of public consultation includes:

- identification of interested and affected stakeholders
- method(s) used to inform and involve them
- analysis of views and concerns expressed
- how these were taken into account
- issues remaining to be resolved



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EIA Report - evaluating impacts for each alternative

- prediction of each major impact
- proposed mitigation measures
- significance of the residual impact
- limitations, uncertainty and gaps in knowledge
- some mitigating measures not considered



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EIA Report – comparative evaluation of alternatives:

- adverse and beneficial impacts
- effectiveness of mitigation measure
- distribution of benefits and costs
- opportunities for enhancement
- reasons for preferred alternative



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Environmental management plans contain:

- proposed mitigation measures
- schedule for implementation
- surveillance and monitoring programmes
- impact management strategy
- reporting, audit and review procedure
- any institution and capacity building requirements



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Some common shortcomings of EIA reports

- objective of proposal described too narrowly
- description does not cover complete activity
- alternatives do not account for the environment
- key problems not described
- sensitive elements in environment overlooked
- relevant standards and legislation not described



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Some common shortcomings of EIA reports (continued)

- best alternative not described (or insufficiently described)
- serious impacts not mentioned or not correctly described
- outdated or ineffective prediction models used
- impacts not compared with standards or targets
- appropriate mitigation measures not considered
- incorrect conclusions drawn