Environmental Impact Assessment Review Training Workshop
St. Vincent and the Grenadines
7-9 June 2011

TRAINING MANUAL
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OVERVIEW

This manual has been prepared for use in the Environmental Impact Assessment (EIA) Review Workshop sponsored by the Global Environment Facility-funded Integrating Watershed & Coastal Areas Management in Caribbean Small Island Developing States (GEF-IWCAM) Project. The GEF-IWCAM is a regional project which is being co-executed by The Caribbean Environmental Health Institute (CEHI) and the Secretariat to the Cartagena Convention (UNEP-CAR/RCU). GEF-IWCAM is co-implemented by the United Nations Development Programme and the United Nations Environment Programme.

The workshop is intended for participants from the 13 participating countries, namely Antigua and Barbuda, Bahamas, Barbados, Cuba, Dominica, Dominican Republic, Grenada, Haiti, Jamaica, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, and Trinidad and Tobago.

OBJECTIVES

By the end of this workshop participants will be able to:

• understand the EIA process and its role in decision making;
• evaluate EIA in their home country and make recommendations for improvement;
• scope projects and prepare clear, comprehensive Terms of Reference; and
• prepare review templates and undertake the review of EIA reports.

METHOD

This workshop is being delivered through a blended approach of face to face and online teaching. All the teaching materials have been presented in a course management system on the GEF-IWCAM website. This means that participants can access the information at their convenience and discuss the topics among themselves outside of the workshop sessions.

At the same time, the material will be presented and activities undertaken in the three day workshop, convened 7 – 9 June 2011 in St. Vincent and the Grenadines.
WHAT IS ENVIRONMENTAL IMPACT ASSESSMENT?

EIA is a critical mechanism by which environmental and social concerns can be mainstreamed into the development planning process. Some useful definitions of EIA are:

**Definitions**

“Environmental Impact Assessment – EIA is a systematic process that examines the environmental consequences of development actions, in advance.” (Glasson et al. 1999)

“EIA is a way to identify and predict the impact of legislative proposals, policies, programmes, projects and operational procedures on the environment and on man’s health and well being.” (Munn 1979)

“The term environmental assessment describes a technique and a process by which information about the environmental effects of a project is collected, both by the developer and from other sources, and taken into account by the planning authority in forming their judgements on whether the development should go ahead.” (Department of Environment 1989)

The term **ENVIRONMENT** in Environmental Impact Assessment is holistic, referring to biophysical and ecological impacts, e.g. impacts on air and water quality, flora and fauna, noise levels, climate and hydrological systems, as well as social, health and economic aspects, e.g. land use, user conflicts, employment and risk factors.

**The Goal of EIA**

Environmental Impact Assessment Process in planning promotes sustainable development by ensuring that development proposals do not undermine critical resource and ecological functions or the well being, lifestyle and livelihoods of the communities and people who depend on them. Its fundamental goal is therefore to:

*maximise environmental benefits, and minimise or eradicate impacts, during the construction, operation and decommissioning phases of development.* (UNEP 2002)

EIA serves many purposes:

- For the decision-maker it informs the setting of environmental terms and conditions for approving proposals.
- For the developer it provides information that can improve the design of the proposal and ensure that resources are used appropriately and efficiently.
- For the residents it ensures that possible negative impacts are considered and that appropriate measures for mitigating them are identified.

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**EIA takes place BEFORE a decision is made to approve or deny an application.**

**EIA is a process.**

**EIA is systematic, holistic and multi-disciplinary.**

**EIA is a decision making tool.**
**Brief history of EIA**

In the US one of the primary catalysts for the start of Impact Assessments was the National Policy Act (NEPA) of 1969 because of the Santa Barbara oil spill, which had a direct impact on very affluent households. This policy required that an Environmental Impact Statement be prepared and that a systematic and interdisciplinary approach be utilised to ensure the integrated use of natural and social sciences and the design arts in the planning and decision making which may have an impact on the social environment.

In New Zealand the impetus for their Impact Assessment came from a controversy over the raising of Lake Manapouri for electricity generation in the late 1960s. In Canada the importance of the social part of environmental impacts in project appraisal was highlighted by a 1974-78 inquiry regarding the Mackenzie Valley gas and oil pipeline through Canada. It was decided that inquiries be made regarding the pipeline's social impacts on native peoples.

Across the so called "third world" countries the negative impacts which internationally funded projects were having on local populations led to loud outracies. An in-depth analysis was done on a number of the World Bank projects and the problems were irrefutable. However it was not until 1986 that detailed procedures for the EIA in development assistance projects were issued by the OECD. This was followed by the World Bank's directive on EIA in 1989. As a result, Impact Assessment became a requirement of the planning process for major projects being funded by international lending agencies.

In the Caribbean environmental assessments are generally undertaken as part of the physical development planning process, and the Town and Country Planning Acts that govern this process were established during the 1970s. More recently, in the 1990s, some countries in the region, e.g. Guyana, have developed specific EIA legislation.

**Other Related Studies**

The EIA is one planning tool. Sometimes it needs to be augmented by a risk assessment:

**Risk Assessment:** where the probability and consequences of unlikely or accidental events are examined. For example, computer modelling to determine the consequences of a category 5 hurricane on a nuclear power plant.

As highlighted in the definitions, EIA is done **before approval** is given and the construction commences or operations begin. Thus, any environmental evaluation which takes place once a facility is already operational is an environmental audit:

**Environmental Audits:** an assessment of the extent to which an existing facility is observing practices to minimize harm to the environment.

When the EIA is completed, an environmental management system can be established and implemented to ensure that the required conditions are met.
**Environmental Management System:** a management tool that allows an organisation to identify and control the environmental impact of its activities, products or services, and to improve its environmental performance continually, and to implement a systematic approach to setting environmental objectives and targets, to achieving these and to demonstrating that they have been achieved.

Environmental impact assessments are employed in the development planning process to determine whether specific projects – usually infrastructural like roads, tourism resorts, and agricultural laboratories - should be constructed. However, it is also possible to assess broader development strategies, policies and plans, which usually set the framework for the more specific projects. The assessment of these higher order policies is done by using strategic environmental assessment:

**Strategic Environmental Assessment (SEA):** focuses on the potential environmental changes that could be caused by developmental strategies, policies and plans. It is applied at the broader policy level, compared to EIA which applies to specific project proposals. For example – SEA would be used in analysing alternate energy policy decisions such as the proportion of renewable versus non-renewable power sources that would be pursued by a country. Alternately, EIA would address the potential impacts of building a new power plant.

**Benefits from Conducting EIAs:**

Numerous benefits accrue from conducting EIA.

....Because EIA requires a thorough examination of the proposal – its inputs and outputs;

....Because EIA requires a complete analysis of the physical, ecological, legislative, social and economic context into which the project will be implemented;

....Because EIA requires the consideration of alternatives – e.g. locations, processes, technologies and schedules;

EIA can result in improved project design which means that:

- Facilities would be located in environmentally optimum locations
- Improved technology would result in lower waste outputs
- There would be compliance with environmental and social standards
- There is increased transparency leading to public acceptance of the project

Ultimately, EIA lowers costs:

- The cost of impairing human health;
- The cost of losing valuable natural resources; and
- The penalties and fines for remedial treatment and compensation as a result of damages to the environment and to human health and safety.
Proposal

Screening

EIA required

Initial Environmental Examination

Scoping (Comparison of alternatives – including the no project option)

Baseline studies/Impact identification and analysis

Identification of mitigation measures

Report preparation and submission

Report Review

More information required

Project Approved

Application for permits

Project NOT Approved

Reassess and resubmit

Public Participation

Project commences with implementation of conditions

Monitoring

Work continues based on compliance

Work ceases for non-compliance or for impacts that exceed expected range

Figure 1: The EIA Process
THE EIA PROCESS

The EIA process commences with the presentation of a project proposal to the relevant public sector agency for planning approval. This triggers the first step in the process – Screening.

Screening

Screening identifies the projects that require an EIA and excludes the ones that do not. It can be undertaken in either of two ways:

- **prescriptive or standardised approach** – proposals subject to or exempt from EIA are defined or listed in legislation and regulations; and
- **discretionary or customised approach** – proposals are screened on an individual or case-by-case base, using indicative guidance. (UNEP 2002)

In the prescriptive approach, there will be a list that indicates what types of projects require EIAs. This is an inclusionary list. An exclusionary list indicates projects that do not require EIAs. Two examples are provided in Appendix 1 for your information. One is the Caribbean Development Bank’s list and the other is contained in the European Guidance on Screening.

In the customized approach, criteria are used to determine on a case by case basis whether a project requires an EIA. Examples of criteria are:

- assimilative capacity of the natural environment
- environmental sensitivity, e.g. wetlands, coastal and mountain zones
- environmental standards and objectives
- adjacent to protected or designated areas
- within landscapes of special heritage value
- existing land use(s) and commitments
- abundance and quality of natural resources (UNEP 2002)

The European criteria are contained in the European Guidance on Screening Document.

Sometimes the project is not on the list and the application of the criteria would be insufficient to make a decision. This applies in cases where for example, there is brand new technology for which there is insufficient information to make a decision, or where there is a serious concern
that the project might impact on a previously untouched natural area such as a mountain range.

In this case the authority can request an Initial Environmental Assessment (IEE). An IEE is a relatively low-cost analysis that makes use of information already available. For example, key issues can be identified by a rapid scoping exercise, based on consultation with local residents and agencies. It would involve a site visit to survey the current situation and obtain baseline information, using simple methods like a checklist or matrix to identify potential impacts. If the IEE determines that a full EIA is required, then the findings are used as a scoping document to prepare the Terms of Reference for the full EIA. If it determines that no other study is required then it is used to set conditions for the approval of the project. Therefore an IEE is a preliminary EIA study sometimes referred to as a scoping study that mirrors all the steps in an EIA i.e.

- describes the proposal and the environmental setting;
- considers alternatives to improve the environmental benefits;
- addresses the concerns of the local community;
- identifies the potential environmental effects;
- identifies measures to mitigate adverse impacts; and
- describes, as necessary, environmental monitoring and management plans. (UNEP 2002)

PLEASE NOTE! An EIA differs from an IEE/scoping study in that the IEE is a rapid assessment, based primarily on secondary data sources, whereas the EIA is based on full and extended field work and the collection of primary data.

The screening process can have four outcomes:

1. The project does not require an EIA.
2. The project requires a limited EIA.
3. The project requires a comprehensive EIA.
4. The project requires an IEE to determine whether an EIA is needed.

If the project requires an EIA then the second step in the process is triggered - Scoping.

Activity:

What do you think are some of the weaknesses inherent in both of the approaches - prescriptive or customary - to screening?
Scoping

Scoping is the part of the process that determines what is to be covered in the EIA. It considers every aspect of the project under consideration - the location, the phases, the project inputs and outputs. It takes into account every component of the legislative, physical, ecological, social and economic context in which the project will be situated.

Scoping is done by either the agency mandated to lead the development planning process or by the developer’s consultant who will be undertaking the EIA. For example, in Trinidad and Tobago, it is done by the Environmental Management Authority (EMA); by contrast, in Barbados, it is done by the agency contracted by the developer to conduct the EIA.

Scoping can be achieved by using a collaborative approach, involving the developer, the consultants, the relevant public sector agencies and key members of the community that would be affected by the proposal. Sometimes when this is done it is called a “charrette” and it is used typically by architects to obtain information to facilitate design. The advantage of each group playing a part in the scoping activity is clear.

The developer and the design team know the most about the proposal.

The EIA consultants or experts understand the EIA process and are knowledgeable about the types of impacts various projects have in different contexts.

The mandated authority/public sector agencies are aware of the legal requirements for development and the environmental and social standards that must be upheld.

The community residents have local knowledge of the area to be developed and are best placed to express their social needs.

Scoping is usually completed through the use of a checklist that will comprise all the possible concerns that should be addressed in any project. The list is used systematically to highlight key issues and problem areas based on their potential significance and likely importance for decision-making on the proposal. The checklist allows these to be referenced with the regulatory requirements that should be in place and against which the impact would be assessed. An example of a checklist has been provided in Appendix 2.

Activity

You have been provided with a project description. Use the checklist contained in the European Commission Guidance on Scoping, to scope the project. Both documents are located in Appendix 2.
By identifying the issues to be addressed in the EIA, the scoping process determines the experts required to conduct the EIA. Once the scoping is completed, it results in the preparation of the Terms of Reference for conducting the EIA.

Screening determines the need for an EIA
Scoping determines what will be covered in the EIA
Terms of Reference are instructions on what is to be done to complete the EIA and prepare the report.
Alternatives

It is good practice during the scoping process to consider alternatives to the proposal. Alternatives can include:

- Locations for situating the proposal
- The processes to be employed in the project – e.g. taking water from the national source vs. building a desalination plant;
- Variations in schedules – considering alternate times of day to conduct blasting at a quarry site.
- Size – the construction of one seven-storey hotel resort on the coast vs. three two-storey structures.
- Demand for utilities – the use of renewable energy vs. non-renewable energy

A list of the types of alternatives that can be considered during the preparation of an EIA is contained in the European Commissions Guidance on Scoping document.

Some alternatives that could be considered when scoping a proposal pertaining to transportation include:

- Constructing a new highway at the location of the problem.
- Constructing a new highway or widening an existing route at another location to divert traffic away from the problem area.
- Widening existing highways.
- Providing HOV (high occupancy vehicle) lanes.
- Providing increased bus service.
- Constructing or extending commuter rail systems.
- Improving traffic signal timing.
- Switching to natural gas vehicles to limit air pollutants.
- Encouraging major employers to offer incentives for carpool employees.
- Recommending that proposed major traffic generators such as shopping centres, major employers or housing developments be located in alternative geographic areas or sites.
- Recommending that local planning officials control potential future traffic problems through rezoning. (Bowers Marriott 1997)

A critical alternative to consider is the “no project” option. What would be the likely trends if the project did not take place? What would happen to the natural and social environments and to the economy?

Considering the alternatives during the scoping process, focuses the Terms of Reference on the aspects of the study that are likely to lead to a more efficient project with less impacts.

Once the scoping is completed, the Terms of Reference will be prepared.
Terms of Reference

Simply put, the Terms of Reference or ToR, are instructions about what is to be done in the EIA and for the preparation of the report. If the ToR is unclear or incomplete, then the EIA report will also be inadequate. Moreover, the ToR is the basis for the review of the report, since it details exactly what was requested of the developer. Therefore, knowing how to prepare good ToR is critical. ToR should contain the following:

Table 1: Contents of the Terms of Reference

<table>
<thead>
<tr>
<th>Topic</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>The purpose and application of the Terms of Reference.</td>
<td>Why is the ToR being prepared and how will it be used?</td>
</tr>
<tr>
<td>Statement of the need for and objectives of the proposal.</td>
<td>Justification for the proposal, why it should be considered.</td>
</tr>
<tr>
<td>Project background and description.</td>
<td>Details about the nature of the project.</td>
</tr>
<tr>
<td>Study area or impact zone(s)</td>
<td>Information about the affected environment and community.</td>
</tr>
<tr>
<td>Applicable policy and institutional considerations.</td>
<td>A description of all the laws that govern the various aspects of the specific proposal.</td>
</tr>
<tr>
<td>Provisions for public involvement.</td>
<td>Details on who is to be involved, how they are to be informed, at what stages of the EIA and how often.</td>
</tr>
<tr>
<td>Alternatives to be examined.</td>
<td>Locations, processes, scheduling etc.</td>
</tr>
<tr>
<td>The impacts and issues to be studied.</td>
<td>Based on the issues identified in the scoping.</td>
</tr>
<tr>
<td>The studies to be carried out.</td>
<td>The approach, time and space boundaries.</td>
</tr>
<tr>
<td>The requirements for mitigation and monitoring.</td>
<td>Details about how negative impacts will be dealt with, how the implementation will be monitored, the frequency of monitoring and by whom.</td>
</tr>
<tr>
<td>The information and data to be included in the EIA report.</td>
<td>For example, the need for a non-technical summary.</td>
</tr>
<tr>
<td>The means for making changes to the ToR if necessary.</td>
<td>For example, if the study unearths additional areas that require investigation.</td>
</tr>
</tbody>
</table>
An example of a ToR has been provided.
Baseline studies

The impact identification and analysis stage of the EIA commences with the establishment of a baseline. In short, there must be some point of reference against which the impacts of the project will be assessed.

What is an impact? An impact is the change in an environmental parameter as a result of an activity or intervention (Figure 2). EIA is concerned about the changes that would be caused by the project.

Figure 2: An impact

Source (UNEP 2002)

Since it is to be assessed against the baseline, this means that the EIA experts have to collect the following information on all of the environmental parameters that were identified in the scoping process as likely to be impacted:

- The current condition of the environmental parameter.
- The current and expected trends without the project.
- The effects of other proposals that are now being implemented or are to be implemented. (UNEP 2002)

Each specialist on the EIA team will conduct the relevant studies in his/her discipline to collect the required data. The ToR may stipulate the specific approach preferred for any of the areas to be studied. For example, in Barbados the Coastal Zone Management Unit requires both numerical and computer modelling of any proposed coastal structures.

Activity

What are some of the trends that you would consider as part of the baseline study for the project description provided.
Impact identification

Each discipline has its own specialised methodology for identifying impacts. Most of them will use one or a combination of the following:

- **Checklists**: These are lists of special biophysical, social and economic factors that may be affected by specific types of activities. Sectoral checklists are available for application to particular types of projects and categories of impacts (such as dams or road building).

- **Matrices**: These are grids that are used to identify the interaction between project activities, which are displayed along one axis, and environmental characteristics, which are displayed along the other axis. Using the grid, environment-activity interactions can be noted in the appropriate cells or intersecting points in the grid. ‘Entries’ are made in the cells to highlight impact severity or other features related to the nature of the impact, for instance:
  - ticks or symbols can identify impact type (such as direct, indirect, cumulative) pictorially;
  - numbers or a range of dot sizes can indicate scale; or
  - descriptive comments can be made.

- **Networks**: These recognize that environmental systems comprise a complex web of relationships and so they use that web concept to illustrate the cause-effect relationship of project activities and environmental characteristics. They are particularly useful in identifying and depicting secondary impacts.

- **Geographic information systems**: GIS stores, retrieves, manipulates and displays environmental data in a spatial format. The product is a set of maps or overlays of a given area illustrating different types of information and scales of resolution.

- **Professional judgment** – the use of the expert opinion of specialists who have years of experience working in specific fields.

Examples of checklists, matrices and networks are provided in Appendix 3. Table 2 provides a summary of their strengths and weaknesses.
Table 2: Strengths and weaknesses of impact prediction methods

<table>
<thead>
<tr>
<th>Method</th>
<th>Strengths</th>
<th>Weakness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Checklists</td>
<td>Easy to understand and use</td>
<td>Do not distinguish between direct and indirect impacts</td>
</tr>
<tr>
<td></td>
<td>Good for site selection and priority setting</td>
<td>Do not link action and impact</td>
</tr>
<tr>
<td></td>
<td>Simple ranking and weighing</td>
<td>The process of incorporating values can be controversial</td>
</tr>
<tr>
<td>Matrices</td>
<td>Link action to impact</td>
<td>Do not distinguish between direct and indirect impacts</td>
</tr>
<tr>
<td></td>
<td>Good method for displaying EIA results</td>
<td>Have potential for double counting of impacts</td>
</tr>
<tr>
<td>Networks</td>
<td>Link action to impact</td>
<td>Can become very complex if used beyond simplified version</td>
</tr>
<tr>
<td></td>
<td>Useful in simplified form for checking for second order impacts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Handles direct and indirect impacts</td>
<td></td>
</tr>
<tr>
<td>GIS</td>
<td>Excellent for impact identification and spatial analysis</td>
<td>Heavy reliance on knowledge and data</td>
</tr>
<tr>
<td></td>
<td>Good for experimenting</td>
<td>Often complex and expensive</td>
</tr>
</tbody>
</table>

Source: (UNEP 2002)
Impact analysis

Once the impacts have been identified the next task is to determine the characteristics. This can be demonstrated with a simple example of dust.

The *scoping* process would have highlighted emissions during the construction phase as an issue.

The *baseline studies* would have indicated wind speed and direction; characterised the size of the particles and their composition; and provided information on the communities – both ecological and social – down wind of the project site.

The *impact identification* would have confirmed that the dust particles will affect the downwind communities.

The process of impact analysis will determine the following:

- Nature (positive, negative, direct, indirect, cumulative)
- Magnitude (severe, moderate, low)
- Extent/location (area/volume covered, distribution)
- Timing (construction, operation, decommissioning, immediate, delayed, rate of change)
- Duration (short, medium or long term, intermittent, continuous)
- Reversibility/irreversibility
- Likelihood (probability, uncertainty or confidence in the prediction)
- Significance (does it comply with existing standard or criteria)

In this case it would be predicted that dust during the construction phase would be a short term negative effect that would affect communities within a specified range (based on the wind speed and particle volume and size) severely, and that the likelihood was certain. It would also indicate whether it met or exceeded the existing air quality standard.

The methods of analysis include:

- best estimate’ professional judgment made by specialists, who are familiar with the type of proposal, the geographic region and/or similar cases that are analogous to the situation
- quantitative mathematical models – e.g. air dispersion models to predict emissions and pollution; hydrological models to predict changes in the flow regime of rivers
- experiments and physical models – e.g. a physical model can be used to simulate changes to patterns of sand or sediment deposition resulting from coastal infrastructure works
- case studies – comparisons of case studies of projects in similar environments can inform and assist impact analysis. (UNEP 2002)
Once the impacts have been characterised, their significance has to be determined. This is done by evaluating them against criteria and measures established for that purpose (e.g. as defined in legislation). Standards established in national law or international agreements against which impacts can be assessed include:

- Environmental standards – e.g. emission standards for air quality, water quality or noise.
- Health and safety requirements – local Acts or international standards set by agencies like the Pan-American Health Organisation (PAHO), the International Labour Organisation (ILO), etc.
- Development policies and plans.

Other considerations for assessing significance include:

- Levels of public concern
- Scientific and professional evidence of disruption of ecological functions, or negative impacts on quality of life and livelihoods

Impacts are considered significant if they are extensive over space and time; exceed the accepted standard; are non-compliant with local policies and plans and severely affect ecological and human communities in deleterious ways. From an ecological perspective, significant impacts would manifest in the form of:

- Reduction in species diversity
- Habitat depletion or fragmentation
- Threatened, rare and endangered species
- Impairment of ecological functions e.g.
  - disruption of food chains;
  - decline in species population;

From a social perspective significant impacts would cause problems such as:

- Severe threats to human health and safety
- Decline in important resources required for sustaining livelihoods
- Displacement of people and communities
- Demands on services and infrastructure beyond capacity

When predicting impacts it is necessary to indicate the level of certainty or uncertainty of the prediction. This is important since the information is going to be used to influence decision making. Some examples of uncertainty include:

- scientific uncertainty – limited understanding of an ecosystem (or community) and the processes that govern change;
• *data uncertainty* – restrictions introduced by incomplete or non-comparable information, or by insufficient measurement techniques; and

• *policy uncertainty* – unclear or disputed objectives, standards or guidelines for managing potential hazards and effects.

(UNEP 2002)

The impact will be assessed against the baseline. The baseline is not only the current situation, it must also account for likely trends.
Impact mitigation

Having identified the impacts and determined their significance, the next task is to identify ways of mitigating them. This is the stage where ways are found to avoid, minimise or remedy impacts in order to safeguard the environment and the community affected by the proposal.

Mitigation measures fall into two categories:

- *structural measures*, such as design or location changes, engineering modifications and landscape or site treatment; and
- *non-structural measures*, such as economic incentives, legal, institutional and policy instruments, provision of community services and training and capacity building.

There is a hierarchy that is applied to the design of mitigation measures. First every effort is made to AVOID negative impacts by using preventative measures. Preventative measures include:

- Changing the design of the proposal eliminating the elements that would result in adverse impacts;
- Directing development away from areas that are environmentally sensitive; and

If the impact can not be avoided, then the second level involves MINIMIZING OR REDUCING adverse impacts to ‘as low as practicable’ levels. This usually requires scaling down or relocating the proposal or redesigning elements of the project.

In the event that the impact cannot be minimized the third level of action is to remedy or COMPENSATE for adverse residual impacts, which are unavoidable and cannot be reduced further. This usually involves:

- rehabilitation of the affected site or environment, for example, by habitat enhancement;
- restoration of the affected site or environment to its previous state or better, as typically required for mine sites and forestry roads;
- replacement of the same resource values at another location, for example, by wetland engineering to provide an equivalent area to that lost to drainage or infill;
- Relocation of community residents to an alternate location of similar or better monetary value and socio-cultural quality;
- Paying residents fees for damages incurred.

Impact mitigation observes the following hierarchy of actions:

#1 Avoid the impact
#2 Minimize the impact
#3 Compensate for the impact
Environmental Management Plan

The ToR can require the consultants to develop an Environmental Management Plan (EMP). The EMP is an environmental management tool used to ensure that undue or reasonably avoidable adverse impacts of the construction, operation and decommissioning of a project are prevented; and that the positive benefits of the projects are enhanced. EMPs are therefore important tools for ensuring that the mitigation measures recommended in the EIA are clearly defined and implemented through all phases of the project life-cycle. The objectives of an EMP should include:

- Ensuring compliance with regulatory authority stipulations and guidelines which may be local, provincial, national and/or international;
- Ensuring that there is sufficient allocation of resources on the project budget so that the scale of EMP-related activities is consistent with the significance of project impacts;
- Verifying environmental performance through information on impacts as they occur;
- Responding to changes in project implementation not considered in the EIA;
- Responding to unforeseen events; and
- Providing feedback for continual improvement in environmental performance. (Lochner, P. 2005)

In order to achieve the above objectives, the generic scope of an EMP should include the following:

- Definition of the environmental management objectives to be realized during the life of a project (i.e. pre-construction, construction, operation and/or decommissioning phases) in order to enhance benefits and minimise adverse environmental impacts.
- Description of the detailed actions needed to achieve these objectives, including how they will be achieved, by whom, by when, with what resources, with what monitoring/verification, and to what target or performance level. Mechanisms must also be provided to address changes in the project implementation, emergencies or unexpected events, and the associated approval processes.
- Clarification of institutional structures, roles, communication and reporting processes required as part of the implementation of the EMP.
- Description of the link between the EMP and associated legislated requirements.
- Description of requirements for record keeping, reporting, review, auditing and updating of the EMP. (Lochner, P. 2005)
EIA Report

The EIA report is the main output from the EIA process. It contains the information that will facilitate a decision about whether the project should be approved and what conditions would have to be set. It will provide the developer and the design team with information that will improve the design and manage the unwanted impacts of the proposal; and it will inform the public of the likely impacts of the project on them and their community.

Although the EIA is a technical process and the outputs will necessarily be complicated, the report must be written to facilitate comprehension by a diversity of readers, some of whom will not have technical training. This makes the first component of the report – the Non-Technical Summary, possibly the most critical part of the report. This summary provides a concise description of the main findings and recommendations focusing on the key information and options for decision making. It should contain:

- a description of 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.

The EIA report will follow the requirements of the ToR. Therefore it should have the following sections and contents:

*The justification for the project*

The report should start with a clear statement regarding the need for the project and how it relates to national 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.

*The Legal and policy framework*

The report must include a discussion of all laws or policies that apply to the project. This will set the basis for determining that the project will be compliant within the national jurisdiction.

*Terms of Reference*

The Terms of Reference for the EIA should be summarized and a full copy should be appended to the report. This allows the reader to check the report against the ToR requirements.
Description of the proposal and its alternatives

There must be a comprehensive description of the proposal and the alternatives, including maps and diagrams displaying the location of the project and its various components. The description must address all project phases - construction, operation and decommissioning. This section of the report should draw attention to the major differences between the alternatives, including the no-action alternative.

Description of the affected environment

The report must contain a description of the biophysical and socio-economic conditions of the environment that will be affected by the project. It is essentially a presentation of the baseline information that was collected and this is the point of reference against which the impacts will be predicted. Information should 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.

Public consultation and inputs

The results of the public consultations must be presented in the report. It should include a description of who was consulted, how they were informed, a full analysis of the perspectives and indicate how these have been addressed in the proposal. Any outstanding issues should also be indicated.

Environmental impacts and their evaluation

One of the most critical sections of the EIA report is the presentation of the potential positive and negative impacts for both the proposal and its alternatives and for each component of the environment identified as important in the terms of reference. All characteristics of the impacts must be covered. Information contained in this section includes:

- prediction of each major impact, its characteristics and likely consequences;
- 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 include the methodologies used in collecting the data and predicting the impacts.

**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. 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.

*Note the environmental management plan can be included in or annexed to the report; in some cases it may be a separate document.*
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;
- EIA study team members and other contributors to the report; and
- terms of reference for the EIA.

Common weaknesses in EIA reports:

The need for a project cannot be justified

Example: An EIA report supports the need for construction of an airport based on the need for economic development. The report fails to address the broader opportunity costs of losing hectares of pristine rainforest.

The objective and alternatives are too narrowly stated

Example: An EIA report on proposed highway development 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 a new power plant in a coastal location but fails to include information on moving materials through congested communities on narrow rural and urban roads in order 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 for a new coastal tourism resort only considers alternatives regarding the design of the hotel. It overlooks environmental considerations, such as loss of ecological functions from the wetland that will be removed.

Key problems affected by the proposal are not described

Example: An EIA report describes the proposed construction of a retirement village but does not indicate how it will meet its potable water requirements since the capacity in the area is already insufficient for the existing community.
Sensitive elements in the affected environment are overlooked

Example: An EIA report for a new highway does not indicate that the proposed alignment will dissect forest 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 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. (UNEP 2002)
The Review

The purpose of the EIA review is to assess the adequacy and quality of the EIA report, and to determine whether the information is sufficient for a final decision to be made regarding the approval of the proposal. This review process is the critical quality control/quality assurance mechanism that is built into the EIA process. It is a formal step to ensure that the information in the report complies with the ToR and is credible and sufficient for decision making purposes. (UNEP 2002)

It is also sometimes the main opportunity for public comment on the report. In this case it is done at a public meeting and there are usually set requirements for notifying the public and making the report accessible. Comments are also requested to be made in writing or are submitted as part of the report of the meeting. It is the final check before project authorization. (UNEP 2002)

Steps in the Review process

1. Assemble a review team.
2. Prepare a structured format for the review process.
3. Conduct a review meeting.
4. Prepare a report.

The Review Team

It is very useful if those who worked on the Terms of Reference also work on the review team, because then there will then be some measure of familiarity with the project.

The team needs to know how it is going to operate; therefore operating procedures and rules should be known in advance. A lead reviewer (agency or agency representative) should be identified to ensure that the process is managed in a timely manner and to take responsibility for putting together the final recommendation.

The Review Team should comprise independent experts who can verify technical accuracy and completeness. They should have no vested interest in promoting the development or withholding approval.

Reviewing is normally done by planners who are familiar with the requirements of the regulations relating to environmental assessment and have at least a basic, non-specialist knowledge and understanding of impact assessment methodologies and current ideas on best practice in EIA.

The team should also reflect the technical expertise required by the development, i.e. agriculture, engineering etc.
Reviewers should not attempt to refute the findings presented in an EIA report or to supplant them with conclusions of their own. Rather, reviewers should be alert to weaknesses, omissions, or even concealment in the report. For example, the omission of certain tasks, or unsuitable and ad hoc methods, or biased and inaccurate supporting data, without references, or the absence of the rationale and justification for conclusions.

(Modak and Biswas 1999)

The Review Checklist

The review is based on the terms of reference and aided by the use of a review checklist or framework. The purpose of the review checklist is to:

- Provide the reviewers with a framework within which to interpret this information.
- Enable reviewers to assess the quality and completeness of the information in a timely manner.
- Enable the reviewers to make an overall judgement of the acceptability of the EIA as a planning document. (Modak and Biswas 1999)

An example of a Review Checklist has been provided in Appendix 4.

Review of the Report

Types of questions that may be asked by decision makers while reviewing an EIA report:

- Does the report address the ToR?
- Is the necessary information provided for each major component of the EIA report?
- To what extent are both the beneficial and adverse environmental effects clearly explained?
- How are the risks of adverse consequences evaluated and what are they?
- What (if any) are the impacts on environmentally sensitive areas, endangered species and their habitats, and recreational/aesthetic areas?
- How do the environmental effects change the costs and benefits of the project?
- What adverse effects are unavoidable?
- Is the information correct and technically sound?
- Have the views and concerns of affected and interested parties been taken into account? What public participation and review of project plans or the EIA have occurred?
• What alternatives are considered: no project? Other sites? Other technologies?
• Is the statement of the key findings complete and satisfactory?
• Is the information clearly presented and understandable by decision makers and the public?
• What mitigation measures are proposed, and who is responsible for implementing them?
• What are the parameters to be monitored so that the state of the environment can be studied throughout the project?
• Is the information relevant and sufficient for the purpose of decision making and condition setting? (Modak and Biswas 1999)

The response to the last question is the most significant aspect for review conclusions and will determine whether the EIA report will be accepted as is or with revisions.

**Role of the public:**

Public input is an integral means of reinforcing objectivity and assuring the quality of information presented. Many EIA systems provide an opportunity for public review and comment on the information contained in an EIA report. At a minimum, this requires reasonable time and opportunity for interested parties to comment. More proactive forms of public and stakeholder involvement are preferable, especially when there are significant impacts on a local community or people will be displaced by a proposal. A set period for public review and a formal notification procedure are common. The notification usually indicates where the EIA report is displayed and how comments are to be received. (UNEP 2002)

Typically, public comments are solicited in writing. However, this approach may exclude many people, including those who are directly affected by the proposal. Certain countries make provision for a more extended, open review process, using public hearings and other means to gain the views of interested and affected parties on the EIA report. These are usually applied only to large scale and controversial proposals. In other cases less intensive forms of consultation and comment are appropriate. However, in all cases, it is important that these are tailored to the people who are involved. (UNEP 2002)
**Methods for reviewing adequacy of EIA report**

*General checklists* These can be adapted to review purposes, using compliance with local EIA legislation or guidelines as the starting point.

*Project specific checklists and guidelines* These can be based on a general or sectoral checklist, with further adaptations to suit the requirements of the specific project and its terms of reference.

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**Guyana example**

A developer applies for an environmental permit. He must provide information on the following:

- Site design and size of project
- Possible environmental effects of project
- Duration of project
- Non-technical explanation

The Environment Protection Agency (EPA) reviews and decides if an EIA is required. If EIA is NOT required a notice is published in the paper stating the decision. The public has 60 days to make appeals against the decision. The Environment Assessment Board (EAB) would conduct the public hearing.

If an EIA is required the EPA publishes at the developers’ expense in at least one daily paper a public notice of the development. Public suggestions are considered when the TOR is prepared.

The Consultants undertake extensive scoping and the TOR is prepared.

The EIA is conducted and is submitted and the EPA has to publish a notice in the paper within 3 days of receipt to invite the public to view the report. The public has 60 days to make submissions.

The EPA reviews the report taking the public views into consideration. The Environment Assessment Board (EAB) then reviews the comments of the EPA. The EPA reviews the EABs decision and makes a final decision. The Permit is granted stipulating the conditions.

Notice is published informing the public of the decision. If the project is not approved the developer can appeal to the Environmental Assessment Tribunal within 28 days of the decision.
**EIA review frameworks and packages** A number of these are available. The review package developed by the EIA Centre, University of Manchester is widely referenced and used by non-specialists. It comprises a seven-part rating scale, directions on its use and a collation sheet for recording findings on EIA components, such as baseline information, impact prediction and consideration of alternatives. Other review packages are available and can be adapted for use in cases where guidance and criteria have yet to be established.

**Expert and accredited reviewers** One or more experts can be used to peer review the adequacy of the report. The expert(s) contracted should be independent from those involved in preparing the EIA report or undertaking studies. In some countries, EIA experts are accredited or registered as capable of carrying out a study or review.

**Public hearings** Public hearings on an EIA report give the highest level of quality assurance. They provide affected and interested parties with an opportunity to comment extensively on the information and findings. These benefits are maximized when public hearings are held by an independent EIA panel, commission or other inquiry body. A structured and systematic process can be followed to test the quality of the report and to integrate technical evidence and public comment. (UNEP 2002)

**Final questions**

Notwithstanding any deficiencies which may have been identified in the earlier sections of this structured review, does the Environmental Report contain sufficient data and analysis to allow an informed decision regarding the grant of planning permission?

On the basis of the Impacts which have been identified, as ameliorated by the mitigation measures which have been recommended, does the Review Panel recommend the grant of Planning Permission?

**ACTIVITY**

Using the EIA report and the review checklist provided, assess the quality of the report for decision-making purposes.
Decision Making

When the term ‘decision-making’ is used in EIA it is usually taken to mean the final approval of a proposal. However, there is a chain of decisions taken during the EIA process that culminate in a final approval of the proposal, including:

- screening – to decide if and at what level EIA should be applied;
- scoping – to identify the important issues and prepare terms of reference;
- impact analysis – focusing attention on the consideration and choice of alternatives;
- mitigation – to identify measures to avoid, minimize or compensate for impacts; and
- review – to determine the quality and adequacy of the EIA report as a basis for approval of the proposal.

At each stage, an implicit or explicit decision will be made on whether or not the proposal is acceptable and can be justified environmentally. In practice, this is usually favourable, unless a proposal has a ‘fatal flaw’ or proves highly controversial and unacceptable to a large majority of people.

Figure 3 shows that EIA is part of a larger decision-making process that takes more than the technical inputs into consideration. In effect decision making is a broader political process based on information from a number of different sources and involves making a large number of trade-offs. This means that the information in the EIA report has to be presented in a way that highlights the critical issues that can have an important bearing on the decision-making process.

Figure 3: Decision making process
Decision makers are expected to take account of the information from the EIA process in final approval and condition setting. In many instances an EIA process does not automatically lead to the rejection of a proposal even when there are findings of potentially significant impacts. Indeed, the decision that is made may not be the environmentally optimal choice. The environmental consequences of the proposal must be balanced against economic, social and other considerations. The trade-offs form the crux of decision-making, and, typically, environmental considerations carry less weight than economic factors in the approval of development proposals. However, the results of the EIA process usually have a considerable bearing on establishing terms and conditions for project implementation.

Given the fact that the EIA has to measure up against the other concerns it is critical that the report be presented to clearly indicate the impacts and their mitigation; and more importantly, to bring the feasible alternatives to the attention of the decision maker. In this regard, it is really important to remember that the persons responsible for making decisions may seldom have time to read the entire EIA report. They will likely read the non-technical summary and rely upon the advice of the technical officials in the relevant agencies. This makes the role of the review panel even more critical in providing a clear statement regarding the best use of the EIA report in the decision to be made.

**Outcomes of decision making**

There can be a number of different outcomes from decision-making:

- the proposal can be approved;
- the proposal can be approved with conditions;
- the proposal can be placed on hold pending further investigation;
- the proposal can be returned for revision and resubmission; and
- the proposal can be rejected outright.

**Checks and balances**

There are some critical checks and balances that should be in place to protect the integrity of the EIA process and its role in decision making. First and foremost is the fact that no decision should be taken until the EIA report has been received and considered. Provision is made for this for example, in Trinidad and Tobago, whereby no permits or approvals are to be given until a Certificate of Environmental Clearance (CEC) is received by the developer. This means that if an EIA is required the CEC will not be given until the EIA is completed and a decision made.

A second check in the process is that the findings of the EIA report and review are major determinants of approval and condition setting. Oftentimes, even when the EIA is not
favourable but approval is given, the information in the EIA is used to set conditions for implementation.

A number of the checks and balances apply to the input of the public. These include the fact that public comment on the EIA report is taken into account in decision-making; and that there is a public right of appeal against the decision. Some jurisdictions have provision for the latter in their legislation – e.g. Trinidad and Tobago and Guyana. Most jurisdictions make provision for public comment on the EIA report as well.

Other checks and balances pertain to the fact that approvals can be refused or withheld, conditions imposed, or modifications demanded at the final decision stage; and that the decision is made by a body other than the developer. This latter point highlights a conflict of interest situation, when for example the government is both the developer and the regulator. While it is true that the Ministry of Planning is seldom an implementing agency, unlike the Ministry of Housing or Transport and Works, it is all still one administration. Currently, insufficient is being done to deal with such conflicts. One way to address the conflict highlights the final check and balance, i.e. the fact that the reasons for the decision and the conditions attached to it should be published. The requirement for written reasons for the decision is particularly important since it would bring a level of transparency to the situation. For instance, the US Record of Decision must contain (Regulations, Section 1505.2):

- a statement explaining the decision;
- an explanation of alternatives considered and which of these are environmentally preferable;
- the social, economic and environmental factors considered by the agency in making its decision;
- an explanation of the mitigation measures adopted and, if practicable, the mitigation methods that were not adopted, with an explanation of why not; and
- a summary of the monitoring and enforcement programme which must be adopted to ensure that any mitigation measures are implemented

Proposals that are subject to EIA would normally have conditions attached to their implementation as part of the final approval. The conditions that are set may follow the mitigation and impact management measures proposed in the EIA report or vary them, for example by establishing more stringent requirements. In either case, condition setting is based on impact predictions, which have varying levels of reliability. As far as possible, the level of confidence or range of uncertainty that is attached to the information should be specified so decision-makers understand the limitations on condition setting. (UNEP 2002)
Implementation and monitoring

It is general misconception that the EIA process concludes once the decision for project approval has been given. This is very unfortunate, because it means that the actual implementation of the mitigation measures and the monitoring to ensure that the impacts stay within expected limits often does not occur. If the approval has been granted with a set of conditions attached, then it is important to confirm that the developer implements the conditions in a satisfactory manner and that the measures work, i.e. that they maintain the impacts within predicted or permitted limits. If the measures do not work then action has to be taken to manage the unanticipated impacts or other unforeseen changes.

The reality is that many developers do not implement the measures and there is no monitoring to know whether the adverse impacts are occurring, or whether the many environmental and social benefits are being realised.

The main reason given for the lack of monitoring of the implementation of the projects is an absence of resources. Many public sector agencies complain that they do not have staff with the requisite skills and expertise to undertake the necessary tasks. Even when some expertise is available, it is frequently not enough to meet the demand. What then happens is that the developer may begin the process of implementing the necessary measures and submitting reports. However, upon receiving no follow up from these reports, the developer eventually stops undertaking the required tasks. Without appropriate implementation and follow up to decision-making, EIA becomes a paper exercise to secure an approval, rather than a practical exercise to achieve environmental benefits.

More stringent attention needs to be paid to the proposed monitoring programmes that are included in EIA reports. The review panel needs to consider the following when giving the “nod” to the adequacy of the report:

- **What is required?** – Identify the scope and components of the programme, and, if necessary, provide a justification and prioritise follow up actions.

- **Who will carry out the activities?** – Indicate the roles and responsibilities of key agencies and individuals, noting how these will be coordinated and emphasising any research aspects that may have been added subsequent to the project approval, EMP or other core documents.

- **How will the programme be carried out?** – Specify the resources, expertise and arrangements necessary to give effect to EIA follow up and to report the results.

The review panel – which comprises mainly public sector agencies – is aware of the human resource and other shortcomings within the agencies to implement the tasks. They should therefore ensure that what is proposed is feasible. It makes no sense approving a monitoring regime that cannot be implemented.

Some of the factors that should be considered to ensure that monitoring will be undertaken include:
**Surveillance and supervision**

Surveillance of the implementation of EIA terms and conditions should be undertaken by regular or periodic site inspections to check on compliance, observe progress and discuss issues.

**Monitoring**

The agencies have to ensure that appropriate monitoring programmes are designed for the collecting and analysing the data, establishing their linkage to impact management, auditing and other components, and interpretation and reporting of data.

It is the developer’s responsibility to collect the data and report it to the relevant agencies. The Environmental Management Plan should detail all of the monitoring requirements. The regulator’s responsibility is to receive the reports, review them and send comments. If necessary, site visits can be conducted to confirm that the information in the reports is reliable and valid.

**Environmental auditing**

Many industries are now moving towards ISO and other programmes which require them to undergo auditing periodically. This is a practice that needs to become more widespread since it would facilitate a regular examination, documentation and verification that developers are operating within established standards.
Public involvement

In many instances the Planning Acts in the region which govern the process of EIA only require that the document/report be available for public review and that a hearing be held for comments. The assumption is made that by democratically electing public officials they speak accurately on behalf of the public and represent the public interest.

However, the public interest is as diverse and varied as society is pluralistic. Full public involvement in the process has come about because citizens’ groups and NGOs have demanded the opportunity to share in the shaping of important decisions during the planning and policy making processes, through open, systematic public consultation in order to allow the richness of the diversity to be reflected in the policies and plans.

Typical Myths about Participation

Myth 1: A Town Hall meeting is public participation. It is not. Meetings are usually held at nights (when people are tired) and highly technical documents/information is presented.

Myth 2: Democracy means that there is automatic participation. Because you have democratically elected people, they can speak on behalf of you all of the time. What are the mechanisms to permit a diversity of interests to be involved and engaged in the process at any given time? When someone stands up in a meeting, do we really know what interest groups they represent?

Myth 3: The public does not care and there is inertia. If the public appears not to care, perhaps it is because there is no genuine mechanism for their involvement and if decisions have already been taken, and then brought before the public for rubber-stamping, they would rather not be involved at that stage.

What is participation?

Participation allows for the exchange of information about a proposed project, programme, policy or other initiative, and the background issues surrounding the initiative. Through this process, areas of agreement and disagreement can be identified among the interested parties so that they can be taken into account in the final decision. It is an attempt to arrive at the best possible solution that all parties can live with.

Benefits of participation

Public participation is a fundamental principle of the EIA process. Timely, well planned and appropriately implemented public involvement programmes will contribute to the EIA studies and to the successful design, implementation, operation and management of
proposals. Public involvement is a valuable source of information on key impacts, potential mitigation measures and the identification and selection of alternatives. It ensures that the EIA process is open, transparent and robust. Unfortunately not all persons view it this way:

**Myth 1: Public processes are inefficient and slow down things.**

**Myth 2: Things go wrong because politicians look only at short-term economic rewards.**

**Myth 3: All we need is the technical input and once the professionals give their advice, all will be well.**

**Classic arguments against using Public Involvement in EIA:**

- It’s too early; we haven’t got a proposal yet
- It will take too long and cost too much money
- It will stir up opposition and the process will be taken over by activists
- We will only hear from the articulate
- We’ll raise expectations we can’t satisfy
- The local community won’t understand the issues involved

However, there are numerous benefits that have been shown to result from public involvement in EIA:

**The developer**

- Raises the developer’s awareness of the potential impacts of a proposal on the environment and the affected community
- Legitimises proposals and ensures greater acceptance and support
- Improves public trust and confidence
- Assists by obtaining local information/data
- Avoids potentially costly delays later in the process by resolving conflict early

**The decision maker**

- Achieves more informed and accountable decision making
- Provides increased assurance that all issues of legitimate concern have been addressed
- Demonstrates fairness and transparency, avoiding accusations of decisions being made behind closed doors
- Promotes good relations with the proponent and third parties
• Avoids potentially costly delays later in the process by resolving conflict

**Affected communities**

• Provides an opportunity to raise concerns and influence the decision making process
• Provides and opportunity to gain a better understanding and knowledge about environmental impacts and risks that may arise
• Increases awareness of how decision making processes work, who make decisions and on what basis
• Empowers people, providing knowledge that they can influence decision making and creating a greater sense of social responsibility
• Ensures all relevant issues and concerns are dealt with prior to the decision

**When should the public be involved?**

The public can be involved at any stage of the EIA process but it should be commensurate with the significance of the environmental and social impacts.

During screening persons could be consulted if this would allow the authorities to gain a better appreciation of the nature and significance of the likely impacts. This could help to determine whether an EIA is required and at what level. By talking to people early their concerns can be incorporated into the scooping process.

During the scoping there should be some public involvement to ensure that critical issues are identified and that local information about the project area is gathered and that alternative ways of achieving the project objectives are considered.

In the impact analysis and mitigation phases public involvement could be used to avoid biases and inaccuracies in analysis; to identify local values and preferences; to assist in the consideration of mitigation measures and to select the best practicable alternative.

Public meetings and hearings are an essential feature of the EIA process because they allow for public **review** of the EIA report.

In the implementation and follow up phases local representatives could continue to scrutinize the process to ensure that decision conditions are upheld and functioning. It is also good to continue to foster positive public relations during the operations phase.

In reality however, the involvement tends to be during the scoping stage and moreso in the review stage. This is largely due to the legal and procedural requirements and the fact that the benefits of public involvement are under rated. (UNEP 2002)
Planning for public involvement in EIA

The ToR should include the specifications for the public involvement programme, including the scope, timing, techniques, and resources. The public involvement plan needs to describe the means of notifying and informing the public about the proposal and the EIA process. Specific reference should be made to the ways in which the public will be engaged, how their inputs (knowledge, values, concerns) will be taken into account and the resources (people and money) that will be available to implement the public involvement.

Challenges to Public Involvement

• Poverty – people cannot afford to take time from their income earning tasks
• Remote and rural settings – difficulty in communication
• Illiteracy – can not use print media
• Local cultures and values – absence of a culture of participation, unwillingness to disagree with those in authority
• Languages – creates a communication challenge
• Legal systems – may conflict with traditional systems and cause confusion with rights and responsibilities over resource use and access
• Interest groups – bring conflicting and divergent views and interests
• Confidentiality – maybe important to the proponent and may cause suspicion (UNEP 2002)

Factors that facilitate Public Involvement

On the other hand factors that facilitate effective public participation include:

• Making the process project specific because the circumstances will be different for each project.
• Pre-planning – identify the history of similar projects; socio-economic data; what groups are affected and how do they view the project.
• Resources – you should have the time and access to personnel and other inputs.
• Target groups – know who you are communicating with and what their interests are.
• Effective communication – timely, accurate, simple.
• Techniques – utilize the most effective technique for the situation.
• Responsiveness—make the public understand that their contribution will be valued and attended to. (UNEP 2002)

Tools and techniques
There are numerous consultation approaches and techniques and they must be selected according to the goals and objectives of the consultation process, as well as an understanding of the local situation, i.e., the target audience, the information to be shared or obtained etc.

During the start up of the project the main objective is to inform persons about the project and to raise their interest and willingness to participate. Approaches can include the print and electronic media, open houses, brochures and flyers, or visits to key people. This initial period is one of intensive mobilisation to ensure that all of the stakeholders are made aware of the upcoming activities. When collecting information for the baseline, focus groups and surveys are useful techniques. Review process can utilise workshops and other large group meetings – public hearings, town hall meetings.

How to select a technique?
• What specific assessment objectives can be achieved by the proposed technique?
• What are the key criteria (physical settings, timing, nature of target group) for the successful utilization of the proposed technique?
• What follow up actions and related budgetary, personnel and information resources will be required if you use this technique?
• What local conditions (attitudes, previous experience with public participation) can influence the successful utilization of the technique?
• Degree of interaction required between participants
• The stage of the EIA at which it will be used
• The time available
• The number of participants and their interests
• The complexity and controversy of the issues
• Consideration of cultural norms (religion, gender) (UNEP 2002)

Good public management requires that you:
• Provide sufficient relevant information in a user friendly format for non-experts
• Allow time for review of information and allow time for response
• Provide appropriate means and opportunities for persons to express themselves
• Select venues and time events to encourage maximum attendance and free exchange of views by all
• Respond to all questions, issues and concerns (UNEP 2002)
Rules and Players

The Rules

Rules include the policies, legislation or guidelines that indicate when an EIA is required and how it is to be conducted, reported on and reviewed. Having the correct guidelines and legislative policies promotes the implementation of appropriate procedures that are consistent with national laws in the decision-making process.

EIA takes place within the legal and or policy framework established by individual countries and international agencies. Some international developments in EIA law, policy and institutional arrangements within the past decade that have influenced the practice of EIA in the Caribbean include:

- The Rio declaration calls for use of EIA as an instrument of national decision making
- UN Conventions on Climate Change and Biodiversity cite EIA as an implementing mechanism
- International agencies develop EIA requirements for loans to developing countries

The “rules” governing EIA within the region include:

- The legislative basis of EIA in the respective country
- Regulations of lending agencies such as the Caribbean Development Bank

There are also the UNEP Goals and Principles of EIA (UNEP 1996) which have been utilized by many regional authorities as a blueprint for the development of legislation and regulations. In this document UNEP identifies three clear goals namely:

1. To establish that before decisions are taken by the competent authority or authorities to undertake or to authorise activities that are likely to significantly affect the environment, the environmental effects of those activities should be taken into account.

2. To promote the implementation of appropriate procedures in all countries consistent with national laws and decision making processes, through which the foregoing goal may be realised.

3. To encourage the development of reciprocal procedures for information exchange, notification and consultation between states when proposed activities are likely to have significant transboundary effects on the environment of those states.

And 13 principles i.e.:

**Principle 1**

States (including their competent authorities) should not undertake or authorise activities without prior consideration, at an early stage, of their environmental effects. Where the extent, nature or location of a proposed activity is such that it is likely to significantly affect
the environment, a comprehensive Environmental Impact Assessment should be undertaken in accordance with the following principles.

**Principle 2**

The criteria and procedures for determining whether an activity is likely to significantly affect the environment and is therefore subject to an EIA, should be defined clearly by legislation, regulation, or other means, so that subject activities can be quickly and surely identified, and EIA can be applied as the activity is being planned.

**Principle 3**

In the EIA process the relevant significant environmental issues should be identified and studied. Where appropriate, all efforts should be made to identify these issues at an early stage in the process.

**Principle 4**

An EIA should include, at a minimum:

a. A description of the proposed activity;

b. A description of the potentially affected environment, including specific information necessary for identifying and assessing the environmental effects of the proposed activity;

c. A description of practical alternatives, as appropriate;

d. An assessment of the likely or potential environmental impacts of the proposed activity and alternatives; including the direct, indirect, cumulative, short-term and long-term effects;

e. An identification and description of measures available to mitigate adverse environmental impacts of the proposed activity and alternatives, and an assessment of those measures;

f. An indication of gaps in knowledge and uncertainties which may be encountered in compiling the required information;

g. An indication of whether the environment of any other state or areas beyond national jurisdiction are likely to be affected by the proposed activity or alternatives;

h. A brief, non-technical summary of the information provided under the above headings.

**Principle 5**

The environmental effects in an EIA should be assessed with a degree of detail commensurate with their likely environmental significance.

**Principle 6**

The information provided as part of the EIA should be examined impartially prior to the decision.
**Principle 7**
Before a decision is made on an activity, government agencies, members of the public, experts in relevant disciplines and interest groups should be allowed appropriate opportunity to comment on the EIA.

**Principle 8**
A decision as to whether a proposed activity should be authorised or undertaken should not be taken until an appropriate period has elapsed to consider comments pursuant to principles 7 and 12.

**Principle 9**
The decision on any proposed activity subject an EIA should be in writing, stating the reasons therefor, and should include the provisions, if any, to prevent, reduce or mitigate damage to the environment. This decision should be made available to interested persons and groups.

**Principle 10**
Where it is justified, following a decision on an activity which has been subject to an EIA, the activity and its effects on the environment or the provisions (pursuant to Principle 9) of the decision on this activity should be subject to appropriate supervision.

**Principle 11**
States should endeavour to conclude bilateral, regional or multilateral arrangements, as appropriate, so as to provide, on the basis of reciprocity, notification, exchange of information, and agreed-upon consultation on the potential environmental effects of activities under their control or jurisdiction which are likely to significantly affect other States or areas beyond national jurisdiction.

**Principle 12**
When information provided as part of an EIA indicates that the environment within another State is likely to be significantly affected by a proposed activity, the State in which the activity is planned should, to the extent possible:

a. notify the potentially affected state of the proposed activity;
b. transmit to the potentially affected state any relevant information from the EIA, the transmission of which is not prohibited by national laws or regulations; and
c. when it is agreed between the States concerned, enter into timely consultations.

**Principle 13**
Appropriate measures should be established to ensure implementation of EIA procedures.
Summary of principles

Purposive – EIA should meet its aims of informing decision making and ensuring an appropriate level of environmental protection and human health.

Focused – EIA should concentrate on significant environmental effects, taking into account the issues that matter.

Adaptive – EIA should be adjusted to the realities, issues and circumstances of the proposals under review

Participative – EIA should provide appropriate opportunities to inform and involve the interested and affected publics, and their inputs and concerns should be addressed explicitly

Transparent – EIA should be a clear, easily understood and open process, with early notification procedure, access to documentation and public record of decisions taken and reasons for them.

Rigorous – EIA should apply the ‘best practicable’ methodologies to address the impacts and issues being investigated

Practical -- EIA should identify measures for impact mitigation that work and can be implemented

Credible – EIA should be carried out with professionalism, rigor, fairness, objectivity, impartiality and balance

Efficient – EIA should impose the minimum cost burden on proponents consistent with meeting process requirements and objectives.

Weaknesses in the Caribbean Rules

There are two types of legal provision for EIA:

- General environmental or resource management law that makes provision for EIA requirements and procedure
- EIA specific law – comprehensive; framework or enabling statute

However, some Caribbean countries do not have any EIA legislation. They rely on their Planning Acts and Ordinances. Unfortunately, these Acts have shortcomings with respect to their ability to truly prescribe for EIAs. For example, at this time there is no formal legal requirement for the application of the EIA to projects in Barbados. The Town and Country Planning Office (TCPO) uses (Section 17.1) of the Town and Country Planning Act (1972) to require EIAs for development projects. This section authorises the Chief Town Planner to require applicants to provide “such information as he thinks fit” for development permits.
If we continue to use the Barbadian case as an example, in an environmental management and planning study that was completed in the late nineties, it was concluded that the following issues and gaps needed to be resolved vis-à-vis the legal and procedural framework of EIA practice:

- There are no government policies that acknowledge the utility of EIA or that require EIA for any class of project, or that incorporate EIA into government decision making process, or that outline any procedural requirements.
- There is no formal triggering mechanism for an EIA. There is a lack of understanding or direction of when or why a project may need an EIA.
- The manner by which the process is initiated, the procedures that are followed and the decision making process are inconsistent and often not transparent.
- Impact assessment studies are often too narrowly focused, frequently driven by the reviewers who commented on the initial application. The issues list then grows as the study progresses. There is no procedure to narrow, or scope the range of issues in advance, or to tailor the process to the specific project.
- There is no clear process by which information is evaluated, and no direction as to who decides whether the information and process are adequate.
- There is no clear demarcation between environmental assessment studies and project engineering/site environmental protection design work.
- There is no clearly set out process for review and approval of an EIA and there is a lack of direction as to who or what body is responsible for decision-making.
- Although conditions of approval are often quite comprehensive, there is no mechanism in place to determine who or what agency is responsible for ensuring that the conditions are met and there is no clear mechanism in place for monitoring and clearance of conditions. (Government of Barbados 1998)

Ideally, EIA requires the following legal, regulatory and institutional arrangements:

- Explicit basis in law and regulations
- Clear statement of objectives and requirements
- Mandatory compliance and enforcement
- Comprehensive scope of application to proposals with potentially significant impacts
- Prescribed process of steps and activities
- Provisions for public consultation and access to information
- Linkage to project authorisation, permitting and condition setting (UNEP 2002)
The players

At a minimum there are five groups involved in the EIA process:

- Regulator
- Developer
- Financer
- Consultant
- Community

The regulator

In the Caribbean the EIA process is usually led by a public sector local/national planning authority. This agency receives the various proposals from developers, and then performs the critical role of deciding which other agencies need to be involved in the process. Some of other departments that are engaged in the process of commenting on proposals, preparing Terms of Reference and Reviewing Reports include: the Ministry of Tourism, the Water Authority, the Ministry of Housing, Ministry of Transport, etc.

However, the Government can also be the developer and the financer. Moreover, the fact that the Government is a major stakeholder makes it a part of the community as well. The fact that any one actor can play multiple roles and therefore have multiple and possibly conflicting responsibilities, is an important point to note. Further examples of multiple roles for one player include:

- the developer and financer are usually the same
- all the actors can be from the community

The developer/financer

The role of the developer/financer is to ensure that the project is sustainable based on the application of best management practice for project design, construction and implementation. In this way they guarantee viability of their investment.

The community

The community or public is a highly heterogeneous group of differing sectors, factions and groups. This makes engaging the public an “exciting challenge”. The community includes long term well-established organisations as well as short term groups specifically formed to support or opposed a project or issue. Then there is the so-called general public; that massive group of individuals from the community at large who are not affiliated with any organised group, and more importantly do not wish to be organised. Of course there are the politicians, public interest groups and the experts.
This diverse range of people is concerned with the social and economic effects of projects whether positive or negative, and to ensure that benefits accrue from the action. The accommodation of their interests by a developer is often viewed as an important step in the “legitimisation” of a project.

The **EIA consultant** makes sure the job is done properly. The **consultant** is often employed by developers, although, occasionally they may be employed by local groups, environmental groups and others to help mount opposition to a proposal. They may also be employed by regulatory bodies to help them in their examination process.

**EIA Management**

The EIA process is a management-intensive process. EIAs often deal with major (and sometimes poorly defined) projects, with many wide-ranging and often controversial impacts. They can involve many participants with very different perspectives on the relative merits and impacts of projects. Therefore, it is important that the EIA process is well managed.

EIA project management is complex and demanding; it requires a combination of specialist and managerial skills and a commitment to the task. The purpose of project management is to plan, organize and coordinate the tasks necessary to carry out each phase of EIA process effectively.

The immediate objective is to produce an EIA report that communicated the necessary information for sound decision making. The ultimate objective is to ensure that EIA process results in environmental benefits expected, through actions to avoid, reduce and offset the adverse impact of the project.

Critical functions of project management include:

- Giving direction and backing to team responsible for carrying out the EIA studies and activities
- Liaising with the project engineer, site manager and other responsible for project design, construction and operation
- Consulting with the responsible authority, regulatory body and other key EIA stakeholders, including public and affected communities
- Being conscious of time and budgetary constraints

EIA teams need strong leadership and support. All members should have a clear understanding of what is to be achieved, what the deadlines are, how money and resources will be allocated, who does what, who reports to whom and how issues will be resolved.

The team project manager obviously has a pivotal role. In addition to personnel and team management skills, the manager should have a broad appreciation of the project type under
consideration, knowledge of the relevant processes and impacts subject to EIA, the ability to identify important issues and preferably a substantial area of expertise.

Some core roles for a project manager include:

• Selecting an appropriate project team;
• Managing specialist inputs;
• Liaising with the people involved in the process;
• Managing change in the internal and external environment of the project;
• Coordinating the contributions of the team in the various documentary outputs.

Attributes that assist with being a good project manager are:

• Good communication skills – to be a good interface with the team the proponent’s staff and contractors, and the various regulatory agencies and the public
• Solid technical competency – sound understanding of the technical aspects and environmental and social impacts of the project
• Problem-solving approach – need to tackle problems and turn them around quickly as deadlines are often tight. Must move expeditiously to meet EIA ToR, fine tuning aspects as the situation requires
• Leadership abilities – must have a clear idea of what is to be done and how, good IPR skills needed to motivate team members allied with integrity and sound judgement
• Flexibility and willingness to learn from others – Manager is likely to be a generalist as opposed to specialist. Needs to know enough about each of the specializations to ask the right questions and test the advice given. Must be flexible, respecting the credential and professional judgements of others and be open to learning from them
• Ability to negotiate and settle disputes – between team members and the proponent
• Proficiency in planning and budgeting – must work within strict time and budgetary constraints; accommodate new information and changing requirements within the EIA process.

The Team:

The EIA process invariably involves an interdisciplinary team. The disciplines on the team must be appropriate to address the content and extent of the issues and impacts that have been identified during the scooping exercise. Teams can range from 2 to 3 to up to 30 members depending on the complexity of the proposal. A small team of three could cover the areas of physical/chemical, biological/ecology and cultural/socio-economic, with a membership that might include, for example, an environmental engineer, an ecologist and a
planner, with at least one member having training or experience in environmental impact assessment and management per se.

The interdisciplinary team consists of people trained in different fields who interact to produce a coordinated EIA report. It is not sufficient, however, for each individual to independently pursue his or her line of inquiry because this would result in a fragmented EIA report replete with contradictory information and recommendations. Thus the task of the project manager is to ensure that there is collaboration among the team members.

Sometimes EIA teams comprise a “core/focal” management team and associated specialists, often reflecting the fact that no one organisation can cover all the inputs needed in the production of an ES for a major project. Factors affecting the selection of team members include:

- Available finances
- Range of impacts to be studied
- Demonstrated expertise and experience
- Local knowledge
- Ability to work with others and contribute to team efforts
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Laws of Barbados. Town and Country Planning Act Chapter 240 Subsidiary Legislation


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