

# Module I

## OVERVIEW OF EIA

# WHAT IS AN EIA?

- The EIA is one of the most commonly used environmental management tools to integrate environmental concerns effectively in the development process. The EIA is applied to new projects and the expansion aspects of existing projects.
- An EIA is a study of the effects of a proposed action on the environment. In this regard the environment includes all relevant aspects of the natural and human resources. The EIA evaluates the expected effects on human health, the natural environment and on property. The study therefore requires a multi-disciplinary approach. It should be done very early at the feasibility stage of a project.

- The EIA compares various alternatives by which the project could be realized and seeks to identify the one which represents the best combination of economic and environmental costs and benefits. Alternatives include location as well as methods, process technology and construction methods.
- The EIA attempts to weigh environmental effects on a common basis with economic costs and benefits and finally it is a decision-making tool. The EIA is a procedure used to examine the environmental consequences, both beneficial and adverse, of a proposed development project and to ensure that these effects are taken into account in project design. EIA should be viewed as an integral part of the project planning process.

## CORE VALUE OF EIA

- Integrity: the EIA should be fair, objective, unbiased and balanced
- Utility: the EIA process should provide balanced, credible information for decision making
- Sustainability: the EIA process should result in environmental safe guard

EIA is used according to two principal functions:

- As a ***planning tool*** to minimize the adverse impacts caused by a developing activity; emphasis is on the methodologies and techniques for identifying, predicting and evaluating the environmental impacts of a proposed project or program. Increasingly, EIA is also viewed as a key mechanism for involving public in the planning process through stakeholder analysis.
- As a ***decision making instrument*** to decide upon the acceptability of a project based on its environmental costs.

## BENEFITS:

- Avoiding mistakes that can be expensive and damaging in ecological, social and economic terms.
- Avoiding conflicts and increasing project acceptance.
- Integrating short-term needs with long-term goals.
- Addressing transboundary issues.
- Improving project design and reducing capital and operating costs.
- Improving institutional co-ordination.
- Considering alternative projects and designs.
- Improving accountability and transparency in planning and decision making

## APPLICATIONS OF EIA

There are different aims of EIA that will influence the choice of method and the scope of the study. The aim is dependent on who is the user as well as on the use of the result. Some of the aims may be regarded as more or less formal like:

- **Project development:** The use of EIA in project development may be regarded as a way of avoiding environmental impacts by using EIA at as early stage as possible in the development. This is also a way of avoiding costs due to these impacts. This may be used for different projects e g construction or reconstruction of industrial plants, construction of roads, and construction of municipal waste or water purification plants. The users are to be found in the decision makers in the company and the performer is usually the project team or consultants.

- **Development control** (licenses, permits etc): Here the EIA is a tool for authorities to prevent adverse environmental impact from the kind of projects mentioned above. This kind of EIA has been introduced in national legislation. The performer may be the authority but also it may be the task of the performing company. Also here consultants may be used for the work.
- **Plan development:** This EIA is a tool for authorities in planning of resource or land use, infrastructure like roads, railways etc. This EIA often is called Strategic Environmental Assessment (SEA). The authority may be performer if the competence is available, else consultants are used.
- **Policy development:** Another use of SEA is in policy development are the consequences of a policy can be evaluated by a government. As an example a government may evaluate the consequences of promoting a specific type of industry (forest industry or IT.) as a major primary industry. Also here the work may be performed internally or by consultants.

## HISTORY OF EIA

- The first country to give importance to EIA through its National Environmental Protection Act (NEPA) of 1969 was the United States . A large number of countries followed, which were having industries. Canada, Australia, the Netherlands and Japan adopted EIA legislation in 1973, 1974, 1981 and 1984, respectively. In July 1985, the European Community (EC) made EIA mandatory.
- EIA process took off after mid 1980's after world bank adopted EIA for major development projects, in which borrower country had to undertake the EIA under the bank supervision.
- Now EIA is a formal process in more than 100 countries.
- Under the environment protection Act (1986), India notified its first EIA norms in 1994.



Environmental clearance from central government is required for 32 categories of development projects under industrial sectors:

- Mining
- Thermal power plant
- River valley
- Infrastructure(road, highways, ports, harbours, and airports)
- Industries including very small electroplating in foundry units

## EIS(Environmental impact statement)

- EIS is the Environmental impact statement that must supplement the application for planning permission, while the EIA is the procedure that should be carried out by the planning team before that planning permission can be legally granted.
- A number of different names are used for the report that is prepared on the findings of the EIA process. The terms commonly used include environmental impact statement (EIS) and environmental statement (ES). Despite the different names, EIA reports have the same basic purpose, approach and structure.
- Usually, the proponent is responsible for the preparation of the EIA report. The information contained in the report should meet the terms of reference established at the scoping stage of the EIA process .The terms of reference set out the information that is to be submitted to the decision-making body or responsible authority.

- The purpose of the EIS is to provide a coherent statement of the potential impacts of a proposal and the measures that can be taken to reduce and remedy them. It contains essential information for:
  - the proponent to implement the proposal in an environmentally and socially responsible way;
  - the responsible authority to make an informed decision on the proposal, including the terms and conditions that must be attached to an approval or authorization; and
  - the public to understand the proposal and its likely impacts on people and the environment.
- A successful EIS that meets these aims will be:
  - actionable – a document that can be applied by the proponent to achieve environmentally sound planning and design;

- decision-relevant – a document that organizes and presents the information necessary for project authorization and, if applicable, permitting and licensing; and
- user-friendly – a document that communicates the technical issues to all parties in a clear and comprehensible way.

### ***Shortcomings encountered in Preparing EIA Reports***

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

## LEGAL PROVISION OF EIA

- In India, EIA was made mandatory in 1994, under the Environmental Protection Act of 1986 with the following four objectives:
  1. Predict environmental impact of projects;
  2. Find ways and means to reduce adverse impacts;
  3. Shape the projects to suit local environment; and
  4. Present the predictions and options to the decision-makers.
- Till 1994, EIA clearance was the administrative requirement for big projects undertaken by the Government or public sector undertakings.

According to notification the EIA is expected to cover the following matters

- Description of the proposed activities;
- Description of the base environmental and climatic conditions and potential affected environment including specific information necessary to identify and assess the environmental effect of the proposed activities;
- Analysis of the land use and land use change, waste generation, water consumption (and the existing balance), power consumption etc. along with the social and health impacts (in terms of number of people displayed etc.);
- Description of the practical activities as appropriate;

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- An assessment of the likely or potential environmental impacts of the proposed activity (like air pollution, noise generation) and the alternatives, including the direct or indirect, cumulative, short-term and long-term effects;
  - A risk assessment report and disaster management plan to mitigate adverse environmental impacts of proposed activity and assessment of those measures;
  - An indication of the likely area to be affected by the proposed activity or its alternatives; and
  - A detailed environmental feasibility report of all the information provided.

## CAPABILITIES OF EIA

- An EIA is capable of establishing baseline data (concerning social, physical and biological parameters) before starting any development activity
- An EIA enables the government and public at large to evaluate the benefits of the project versus the environmental degradation or modification
- An EIA also enforces regular monitoring to ensure that the project is not damaging the environment beyond repair
- An EIA is capable of informing the public at large regarding any development activity in an environmentally sensitive area thereby causing public outcry enabling the government to terminate any project with vested interests that damages the livelihood of people (tribes sustaining on the environment).
- An EIA guides the project proponent to study the environment and propose the needed modifications to mitigate the adverse effects of any development activity.

## LIMITATIONS OF EIA

- EIA should be undertaken at the project level but it is undertaken at the policy and planning level
- Range of project alternatives in the project EIA is small
- There is no defined criteria to determine what type of projects undergo an EIA thereby requiring unnecessary expenditure and delay
- Lack of comprehensive environment information base, limitation of time, manpower and financial resources
- More research and development of improved methodologies is required to overcome limitations related to uncertainties in data
- EIA reports are extremely academic, bureaucratic and lengthy containing too many tables of collected data without data analysis, interpretation and environmental implications

- In actual practice, EIA ends immediately after project clearance and no follow-up action is taken
- It does not incorporate strategies of preventing environmental intervention.
- Project EIAs are limited to the projects direct impacts and this leads to ignoring wide range of impacts including:
  - Cumulative impacts
  - Global impacts
  - Indirect, secondary or induced impacts
  - Synergistic impacts
- Finally, the issue of resource conservation, waste minimization, by-product recovery, and improvement of efficiency of equipment need to be pursued as the explicit goal of EIA.