

AN INTRODUCTION TO THE CONCEPT OF ENVIRONMENTAL IMPACT ASSESSMENT IN INDIAN CONTEXT**MANORAMA SINGH**

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ABSTRACT

Environmental Impact Assessment is just an information gathering exercise carried out by the developer and other bodies which enables a Local Planning Authority to understand the environmental effects of a development. The really important thing about environmental assessments is the emphasis on using the best available sources of objective information and in carrying out a systematic and holistic process which should be bias free and allow the local authority and the whole community to properly understand the impact of the proposed development. Environmental assessment should lead to better standards of development and help to propose proper mitigation measures for the problem areas. Environmental impact assessment is meant to be a systematic process which leads to a final product, the Environmental Statement (ES).

Figure :00

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KEY WORDS : Environmental Impact Assessment, Judicial Review, Local planning Authorities, Mitigation**Introduction**

The term '**Environmental Impact Assessment**' (EIA) is used to denote the analysis of the environmental consequences of a plan, policy, program, or project and deciding whether to move forward with the proposed action or not. The Environmental assessments depends upon the rules and regulations of the state regarding environment protection and is subject to judicial review. The purpose of the assessment is to ensure that decision makers consider the environmental impacts of any project in the long term and draw plans to mitigate the adverse effects².

The International Association for Impact Assessment (IAIA) defines an environmental impact assessment as "the process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made^{3,10}. The EIAs require decision makers to account for environmental values in their decisions and to justify those decisions in light of detailed environmental studies and public comments on the potential environmental impacts. Environmental Impact Assessment (EIA) is an important management tool for ensuring optimal use of

natural resources for sustainable development¹.

A beginning in this direction was made in our country with the impact assessment of river valley projects in 1978-79 and the scope has subsequently been enhanced to cover other developmental sectors such as industries, thermal power projects, mining schemes etc⁹. To facilitate collection of environmental data and preparation of management plans, guidelines have been evolved and circulated to the concerned Central and State Government Departments⁴. EIA has now been made mandatory under the Environmental (Protection) Act, 1986 for 29 categories of developmental activities involving investments of Rs. 50 crores and above⁷.

Methods of Impact Assessment

The procedure of an EIA includes:-

1. **Scoping**: identify key issues and concerns of interested parties,
2. **Screening**: decide whether an EIA is required based on information collected-
3. **Identifying and evaluating alternatives**: list alternative sites and techniques and the impacts of each,
4. **Mitigating measures dealing with uncertainty**: review proposed action to prevent or

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minimize the potential adverse effects of the project,

5. **Issuing environmental statements:** report the findings of the EIA.

General and industry specific assessment methods are available including:

- ❑ Industrial products - Product environmental life cycle analysis (LCA) is used for identifying and measuring the impact of industrial products on the environment. These EIAs consider activities related to extraction of raw materials, ancillary materials, equipment; production, use, disposal and ancillary equipment.
- ❑ Genetically modified plants - Specific methods available to perform EIAs of genetically modified organisms include GMP-RAM and INOVA.

EIA methods need measurement data to estimate values of impact indicators. However, many of the environment impacts cannot be quantified, e.g. landscape quality, lifestyle quality and social acceptance. Instead information from similar EIAs, expert judgment and community sentiment are employed. Approximate reasoning methods known as fuzzy logic can be used⁸.

Environmental statement

Once the EIA has been carried out the results are compiled in form of an Environmental Statement which should essentially include the following:

1. A description of the physical characteristics of the whole development and the land-use requirements during the construction and operational phases;
2. A description of the main characteristics of the production processes, for instance, nature and quantity of the materials used;
3. An estimate, by type and quantity, of expected residues and emissions (water, air and soil pollution, noise, vibration, light, heat, radiation, etc.) resulting from the operation of the proposed development.
4. A description of the measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the environment.
5. An indication of any difficulties (technical deficiencies or lack of know-how) encountered by the applicant in compiling the required information.
6. A non-technical summary, of the information provided above.

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Environmental Appraisal Committees

With a view to ensure multi-disciplinary input required for environmental appraisal of development projects, Expert Committees have been constituted for the following sectors:

1. Mining Projects
2. Industrial Projects
3. Thermal Power Projects
4. River Valley, Multipurpose, Irrigation and H.E. Projects
5. Infrastructure Development and Miscellaneous Projects
6. Nuclear Power Projects

Environmental Appraisal Procedure

Once an application has been submitted by a project authority alongwith all the requisite documents specified in the EIA Notification, it is scrutinised by the technical staff of the Ministry prior to placing it before the Environmental Appraisal Committees. The Appraisal Committees evaluate the impact of the project based on the data furnished by the project authorities and if necessary, site visits or on-the-spot assessment of various environmental aspects are also undertaken. Based on such examination, the Committees make recommendations for approval or rejection of the project, which are then processed in the Ministry for approval or rejection.

In case of site specific projects such as Mining, River Valley, Ports and Harbours etc., a two stage clearance procedure has been adopted whereby the project authorities have to obtain site clearance before applying for environmental clearance of their projects. This is to ensure avoiding areas which are ecologically fragile and environmentally sensitive. In case of projects where complete information has been submitted by the project proponents, a decision is taken within 90 days⁶.

Monitoring

After considering all the facets of a project, environmental clearance is accorded subject to implementation of the stipulated environmental safeguards. Monitoring of cleared projects is undertaken by the six regional offices of the Ministry functioning at Shillong, Bhubaneshwar, Chandigarh, Bangalore, Lucknow and Bhopal⁵.

The primary objective of such a procedure

is to ensure adequacy of the suggested safeguards and also to undertake mid-course corrections required, if any. The procedure adopted for monitoring is as follows:

1. Project authorities are required to report every six months on the progress of implementation of the conditions/safeguards stipulated, while according clearance to the project.
2. Field visits of officers and expert teams from the Ministry and/ or its Regional Offices are undertaken to collect and analyse performance data of development projects, so that difficulties encountered are discussed with the proponents with a view to finding solutions.
3. In case of substantial deviations and poor or no response, the matter is taken up with the concerned State Government.
4. Changes in scope of project are identified to check whether review of earlier decision is called for or not.

Conclusion

The legal and procedural background to EIA is complex but members of the public can be surprisingly effective in participating in the process if they ignore the jargon, have a basic understanding

of the process and apply their local knowledge effectively⁹. Two primary considerations are:

- **Scientific** - to examine the accuracy of predictions and explain errors-
- **Management** - to assess the success of mitigation in reducing impacts

Audits can be performed either as a rigorous assessment of the null hypothesis or with a simpler approach comparing what actually occurred against the predictions in the EIA document. After an EIA, the precautionary and polluter pays principles may be applied to decide whether to reject, modify or require strict liability or insurance coverage to a project, based on predicted harms.

The quality of ES can be surprisingly poor with developers often keen to do the least possible to get the application through so it is vital for local people go on asking critical questions of the applicant and local authority planners. In the future EIA is likely to be applied to even more forms of development. New measures will soon ensure the Strategic Environmental Assessment of planning policy and investment programmes. EIA can be made into a useful tool to defend the environmental quality of localities but only if local people feel able to engage with the process effectively.

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