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NEWSLETTER

On

Environmental Impact Assessment (EIA)

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Articles should be sent to
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EDITORIAL

Environmental Impact Assessment (EIA) is the process to take the preventive measure to secure the healthy environment against unauthorized and unrestricted industrial development, by which a healthy-synchronization is achieved between the economical and environmental development. Thus, EIA is an important process to achieving the Sustainable Development Goals (SDGs). The EIA process is formulated by laws and is published notification for their proper implementation, however, the several violations of EIA occurred in India. Thus, the awareness among the people, governmental and non-governmental organization are essential to know the proper EIA process, rules and regulation, to protect the environment from unhealthy developmental program.

In this newsletter described that EIA is a tool used to assess the significant effects of a developmental proposal on the environment. EIA is a formalised procedure for examination, analysis and assessment of planned activities with a view to ensuring environmentally sound and sustainable development.

This newsletter also highlights on the Environmental Impact Assessment concepts, goals, steps, benefit, impact, management etc.

Prof. Kausik Mondal

IN THIS ISSUE:

An Overview of Environmental Impact Assessment (EIA)

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Abstract

Environmental Impact Assessment (**EIA**) is a tool used to assess the significant effects of a developmental project on the environment. EIA is a formalised procedure for examination, analysis and assessment of planned activities with a view to ensuring environmentally sound and sustainable development. EIA represents a systematic process to examine the environmental consequences of the development actions. The emphasis of an EIA is to protect nature with sustainable development.

1. Introduction:

In the present era, the industrialization has supported the economic development which influence the population, and changes the land use pattern, and obviously it stresses on the basic life supporting systems while pushing the environmental impacts closer to the threshold and/or tolerance limit. As per Sustainable Development Goal (SDG), health of the environment should not be overlooked. Thus, the environmental sustainability is becoming a noteworthy determining issue in unavoidable industrial expansion and developmental processes. Globally, in the last few decades, the rate of the environment quality is deteriorating gradually. Thus, the strategical efforts are essential to improve economy, with the protecting the environment by imposing laws and regulation along the private-public participation as well research and development.

An Environmental Impact Assessment (EIA) is a systematic procedure used to assess the beneficial or harmful impacts of a developmental project on various aspects of human welfare and environment, and also to find out alternatives management options (fig.1). In India the 1st EIA notification promulgated in 1994 by the then Ministry of Environment and Forests. The EIA notification was released on 14th September 2006 under the Environmental Protection Act, 1986 [EIA notification, 2006]. An EIA is prior to assess the impact of the proposed project on the environment in a sustainable way for project approval alongwith environmental audit and Environmental clearance.

Thus, EIA is the process to take the preventive measure to secure the healthy environment against unauthorized, and unrestricted industrial development, by which a healthy-synchronizationis achieved between the economical and environmental development. An EIA is an important process to achieving the SDG. The EIA process is formulated by laws and is published notification for their proper implementation, however, the several violations of EIA occurred in India. Thus, the awareness among the people, governmental and non-governmental organization are essential to know the proper EIA process, rules and regulation, to protect the environment from unhealthy developmental program.

The present articles attempts to review the concept, goals, process, benefits of an EIA, environmental management plans (EMP), environmental audit, environmental clearance.

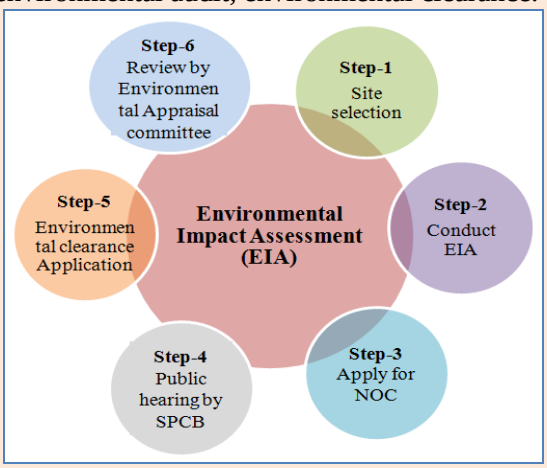

Fig.1: Flow chart of EIA process

2. Concept of Environmental Impact Assessment

An EIA encompasses the following basic features:

- EIA is one of the most potentially valuable tools for environmental management and decision making.
- It is an ideal anticipatory mechanism which assess the quantitative values for environmental parameters indicating the quality of the environment before, during and after the proposed developmental project.
- As a planning tool, EIA process has both an information gathering and decision-making component which provides the decision maker with an object for approving a proposed developmental activity.

- EIA ensures that the potential problems are foreseen and addressed at an early stage in projects planning & design.

3. The Principal Goals of EIA

There is a recognised general principle of EIA assessment with several other processes that relate closely to the review of environmental impacts that may result from a proposed project. The following are well recognized processes:

- To establish that before decisions are taken by the competent authority to undertake some developmental project, the environmental effects of those activities should be accounted aggregately.
- The appropriate procedures should follow in all countries consistent with national laws and decision-making processes.
- To encourage the development of alternate 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.

The general objectives of an EIA are:

(i)Identifying, predicting, and evaluating economic, environmental, and social impacts of development activities,

(ii)Providing information on the environmental consequences for decision making, and

(iii)Promoting environmentally sound and suitable development by identifying appropriate alternatives and mitigation measures.

The prime objectives of EIA are:

(i)Support the goals of environmental protection and sustainable development.,

(ii)Integrate environmental protection and economic decisions at the earliest stages of planning an activity,

(iii)Predict environmental, social, economic and cultural consequences of a proposed activity and to assess plans to mitigate any adverse impacts resulting from the proposed activity, and

(iv)Facilitate the involvement of the various stakeholders like Public, Government etc. in the review of the proposed activities.

4. Steps of EIA

There are two types of EIA such as –

(i) **Rapid EIA**: 'Baseline data generation' is done by monitoring only one season (3 months), excluding the rainy season, and

(ii) **Comprehensive EIA**: 'Baseline data generation' is done by monitoring three seasons (9 months).

The types are selected depending on the nature of the project as well as on the nature of the probable impacts.

EIA represents a systematic process that examines the environmental consequences of any developmental projects, in advance (fig.2). The importance of an EIA is to implement developmental projects with no or very less impact on the nature. The EIA process involves a number of steps, *i.e.*

- **Project screening:** The application of EIA to those projects that may have significant environmental impacts. It is quite likely, however, that screening is done partly by the EIA regulations, operating in a country at the time of assessment.
- **Scoping:** To identify initially the keysignificant environmental issues among a host of possible impacts of a project and all the possible alternatives options.
- **Projects description & alternatives:** To ensure that the proponent has considered other feasible approaches, including alternative project locations, scales, processes, layouts, operating condition and the *no-action* option.
- **Description of the project/development action:** To clarify the purpose and rationale of the project and understand its various characteristics, including the stages of development, location and processes.
- **Description of the environmental baseline:** The establishment of both the present and future state of the environment, in the absence of the project, taking into account the changes resulting from natural events and anthropogenic activities.
- **Identification of key impacts:** This brings together the previous steps with a view to ensuring that all potentially significant environmental impacts (positive & negative) are identified and taken into consideration in EIA process.
- **Impact prediction:** To identify the possible predictable changes in the environment when the project is implemented in comparison with the previous condition.
- **Evaluation & assessment of significance:** To assess the relative significance of the predicted impacts to allow a focus on key adverse impacts. Formal definition of significance is the product of consequence and likelihood.

  ***i.e.* Significance = Consequence x Likelihood**
- **Impact Mitigation:** Implementation of the possible measures to avoid, reduce, remedy or compensate of any significant adverse impacts.

- **Public consultation & participation:** The process to assure the quality, comprehensiveness and effectiveness of the EIA, as well as to ensure that the public's views are adequately taken into consideration in the decision-making process.
- **EIS presentation:** Environmental impact statement (EIS) is a vital step in the EIA process. The quality of EIA .
- **Review process:** This involves a systematic appraisal of the quality of the EIS, as a contribution to the decision-making process.
- **Decision-making:** The final decisions are made by the relevant authority of the EIS (including consultation responses) together with other material considerations as to whether to accept, defer or reject the project.
- **Post-decision monitoring:** The process of outcomes associated with development impacts, after the decision to proceed with the project. It can contribute to effective project management.
- **Auditing:** This follows monitoring and involves comparing actual outcomes with predicted outcomes, and can be used to assess the quality of predictions and the effectiveness of mitigation. It provides a vital step in the EIA learning process.

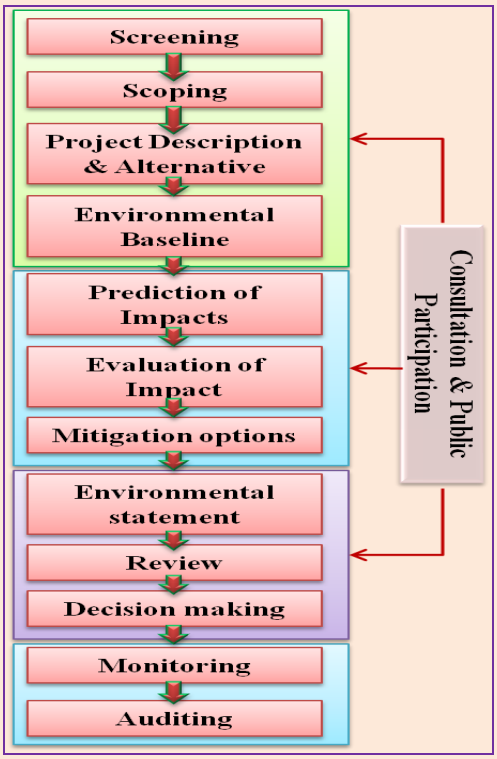

Fig.2: EIA Process

After proper EIA data generation (fig. 3), the data are compiled, integration and prepared the environmental impact status (EIS).

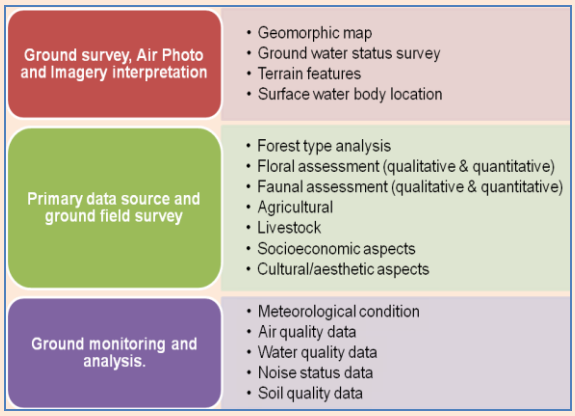

Fig. 3: Process of EIA data generation

5. Benefits of EIA

The governments as well as donor agencies acknowledge the contribution of Environmental Assessment (EA) to improved project design. There was manyweekness in the EA in some past projects lacuna of advance teconolology and less attention to findings at the implementation stage of **Environmental Science Services Administration** (ESSA Technologies 1994), i.e.

- More environmentally sustainable design – modify and improve design.
- Saving in capital and operating cost- efficient resource use.
- Reduce health cost.
- Better compliance with environmental standard.
- Increase project acceptance and enhance social aspects.
- Identify suitable measures for monitoring and managing the impact.
- Provide justification for a proposed project - facilitate decision-making.

The benefits to local communities to take part in environmental assessments include:

- A good local environment (forests, water resources, agricultural potential, recreational potential, aesthetic values, and clean living in urban areas).
- Conservation of biodiversity
- Improved human health.
- Sustainable resource use.
- Less conflicts over natural resource use.
- Increased community skills, knowledge and pride.

6. Impact Evaluation Methodologies

The main EIA techniques used in scoping are baseline studies, checklists, matrices and networkwith local consultation can be made about which impacts are most significant. The steps are, * Checklists, * Matrics, *Networks, *Overlays and Geographical Information

System (GIS), * Battelle Environmental Evaluation System, & * Expert systems

Baseline data generation: It is one of the steps of an EIA process. Background information of various physicochemical, biological as well as socioeconomic parameters is collected in this step. Information is collected for one (for rapid EIA) or three seasons (for comprehensive EIA).

i) **Meteorological data:** These data are collected either by setting up *onsite* '**Micrometeorological station**' (primary data) or availing data from the Indian Meteorological Department (IMD; secondary data). The different parameters are:

a. Temperature (Max, min and mean)
b. Relative humidity
c. Wind flow (speed and direction)
d. Rainfall (pattern and amount)
e. Solar insolation, etc.

ii) **Air quality data:** SO_x, NO_x, PM_{10}, $PM_{2.5}$, CO, HC, etc are analyzed.

iii) **Water quality data:** Normally pH, conductivity, TSS, TDS, BOD, COD, Cl^-, NO_3^-, SO_4^{2-}, PO_4^{3-}, presence of metals, etc are analyzed.

- Collection of sample by **random selection**—this ensures that the **composition of the sample** is **identical (physiochemically** as well as **microbiologically) to that of the water body** from which the sample has been collected
- Some parameter analyses must be performed **on spot** (***on the body of the water itself***): Temperature, DO, etc
- Some parameter analyses must be performed **within minutes** after sample collection: pH, conductivity, taste, color, salinity, turbidity, etc
- Monitoring of microbiological parameters (like coliform load) has to be done **within 12h** of sample collection
- NO_3^-, PO_4^{3-}, SO_4^{2-}, hardness, etc have to be analyzed **within 3 days** of sample collection
- DO is only monitored for surface water bodies and **not for groundwater**

iv) **Soil quality data:** Color, texture, pH, conductivity, water holding capacity, organic carbon, NPK, presence of metals, soil microbes, etc are normally analyzed. Some constructional projects perform **seismological analysis** to determine the soil stability.

v) **Noise quality data:** Equivalent noise level data ($\mathbf{L_{eq}}$) is monitored during **day** (6 am-10 pm) as well **night** (10 pm-6 am). The results are reviewed against the **ambient noise standards** specific for residential, commercial, industrial and silent zones. **Effects of noise** on flora and fauna including human health are estimated.

v) **Ecological studies:** Detailed studies are conducted on—

a. Landscape and terrain features (by studying Topographical sheet)
b. Climate and geology (Secondary data from GSI)
c. Floral study [(i) Terrestrial and (ii) Aquatic] (Secondary data from BSI)
d. Faunal study [(i) Terrestrial and (ii) Aquatic] (Secondary data from ZSI)
e. Forest and wildlife study (Secondary data from the Department of Forest)

vi) **Agriculture:** Mainly secondary data like crop types, production per year, etc are collected from the Department of Agriculture.

vii) **Livestock:**Type, population, utility, etcsecondary data are collected from the Department of Animal Husbandry.

viii) **Land use:** Mainly secondary data are collected from the Department of Planning and Department of Land and Land Reforms. The project area is carefully categorized under:

a) Residential area, b) Water bodies, c) Forest covers, d) Agricultural land, e) Industrial land, f) Communication, and g) Wastelands/ vacant lands

ix) **Socioeconomic information:** Household survey is conducted to generate primary data. Otherwise secondary data can be obtained from the Census study-

a. Population
b. Health status (mortality rate, morbidity rate, epidemics, if any, etc)
c. Income groups
d. Local perception about the proposed project
e. Expectation of people from the proposed project.

7. Environmental Impact Statement (EIS):

An EIA exercise culminates in an environmental impact statement (EIS). The EIS provides final documentation of the various steps in the EIA process. The EIS documentation provides the decision-makers/regulators with valuable information that could ultimately contribute to either the abandonment or substantial modification of a proposed developmentalproject. A typical EIS contains the following three parts:

- **Part 1 – Methods and key issues:** Deals with the statement of methods used and a summary of key issues.

- **Part 2 – Background to the proposed development:** Deals with preliminary studies (i.e., need, planning, alternatives, site selection, etc.), site description/baseline conditions, description of proposed development and construction activities and programmes.
- **Part 3 – Environmental impact assessments on topic areas:** Deals with land use land cover, geology, topography, hydrology,soail, water and air quality, climatic condition, terrestrial and aquatic ecology, noise, transport, socio-economic and interrelationships between effects.

8. Evolution of EIA

8.1 International scenario of EIA

The United States of America (USA) was the first country to assign mandatory status to EIA through its National Environmental Protection Act (NEPA), 1969 following by other countries (table-1). The United Nations Environment Programme (UNEP) in 1980 provided guidance on EIA of the development proposals and supported research on EIA in developing countries (Ahmad and Swamy, 1985). UNEP, in 1987, formulate goals and principles of EIA for the member countries and provided guidance on basic procedures for EIA in 1988. The Organisation for Economic Co-operation and Development (OECD) is an intergovernmental organisation with 38 countries, founded in 1961 to stimulate economic progress and world trade issued recommendations on EIA to its constituent States in 1974 and 1979, and for development aid projects in 1986 (Wood,1995). OECD issued guidelines for good practices in EIA in 1992. The World Conservation Strategy recognised the need to integrate environmental considerations with development in 1980 (IUCN,1980). EIA became an integral part of World Bank policy in 1987 which states that environmental issues must be addressed as part of overall economic policy. In 1989, the World Bank issued the Operational Directive on Environmental Assessment (O.D. 4.00), which was revised and updated in October 1991 (O.D. 4.01). Asian Development Bank in 1990 published guidelines for EIA (ADB, 1990). Importance of EIA was echoed in the Brundtland Report (WCED, 1987), and at United Nations Earth Summit on environment and development held at Rio de Janeiro in 1992 (UNCED, 1992).

Table-1: Worldwide EIA implementation

Countries	Years of Implementation of EIA legislation
USA	1969
Canada	1973
Australia	1974
Columbia (Latin American)	1974
Thailand	1975
France	1976
India	1976-77
Philippines	1978
Netherlands	1981
Israel	1981
Pakistan	1983
Japan	1984
Sri Lanka	1984
European Community	1985

8.2 Evolution of EIA in India

The EIA process in India was started in 1976-77 from the river-velly project coined by Planning commission. The Government of India enacted the Environment (Protection) Act on 23rd May 1986. To achieve the objectives of the Act, one of the decisions taken was to make EIA statutory. After following the legal procedure, a notification was issued on 27th January 1994 and subsequently amended on 4th May 1994, 10th April 1997 and 27th January 2000 making environmental impact assessment legislation statutory for 30 activities. Thereafter the Government of India under Environment (Protection) Act 1986 issued a number of notifications, which are related to environmental impact assessment.

The Ministry of Environment & Forest (MoEF), Govt. of India notified the new EIA legislation in September 2006. The notification makes it mandatory for various developmental projects such as mining, thermal power plants, river valley, infrastructure (road, highway, ports, harbours and airports) and industries including very small electroplating or foundry units to get environment clearance.

In 2020, the Government of India proposed a new EIA 2020 draft, which was widely criticized for heavily diluting the EIA.

9. Strategic Environmental Assessment (SEA)

SEA is defined as the formalised, systematic and comprehensive process of evaluating the environmental impacts of a policy, plan or programme (PPP) and its alternatives, including the preparation of a written report on the

findings of that evaluation, and using the findings in publicly accountable decision-making (Therivel, et al., 1992). Strategic Environmental Assessment the process of evaluating environmental impacts at a strategic level, is not necessarily the same as that at a project level. In the process of PPPs are tiered – a policy provides a framework for the establishment of plans, plans provide frameworks for programmes and programmes lead to projects.

10. Environmental Management Plan (EMP)

There are three broad categories of EMPs in the project lifecycle: the construction EMP, the operations EMP and the decommissioning EMP. The objectives of these EMPs are all the same, namely to:

- Identify the possible environmental impacts of the proposed activity; and
- Develop measures to minimize, mitigate and manage these impacts.

The difference between these EMPs is related to the difference in mitigation actions required for the different stages of the project cycle.

10.1 Concept of EMP

- It's an attempt to control human impact on and interaction with the environment in order to preserve natural resources
- Environmental management focuses on the improvement of human welfare for present and future generations.
- Environment management implies not only a mere management of environment but it is essentially the management of various activities with intolerable constraints imposed by the environment itself and with full consideration of ecological factors.
- Administrative functions that develop, implement, and monitor the environmental policy of an organization.
- Thus, it involves environmental planning, conservation of resources, environmental status evaluation and environmental legislation and administration.

10.2 General scheme for Environmental Management

There are 5-steps of environmental management as follows (fig.4):

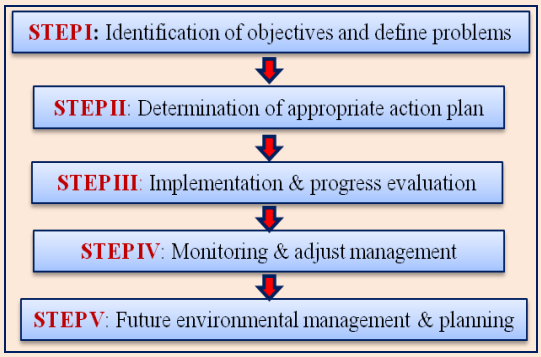

Fig.4: Environmental management Scheme

11. Environmental Audit

Environmental auditing is a management tool designed to provide information of environmental performance to the right people at the right time. An environmental audit is a systematic examination to assess environmental responsibility of management of any project. It aims to identify environmental compliance, verify environmental responsibility and implementation gaps whether they meet stated objectives, along with related corrective actions. The audit examines the potential hazards or risks cause by the company. The environmental policies and procedures, energy use practices, recycling, waste, conservation, and pollution of a company should examine carefully. The environmental audit process includes the following steps:

- ✓ Planning the audit, including activities to be conducted and responsibilities for each activity
- ✓ Review the company's environmental protection policy and the applicable requirements, federal, state, and local requirements.
- ✓ Assessment of the organization, its management, and equipment
- ✓ Gather data and relevant information
- ✓ Evaluate overall performance
- ✓ Identify areas needing improvement
- ✓ Report findings to management

12. Environmental Life Cycle Assessment

Life cycle assessment (LCA) is a technique to assess environmental impacts associated with all the stages of a product's life, which is from raw material extraction through materials processing, manufacture, distribution, and use. The LCA was formalized during early 1990s as it emerged from a conviction that it was important to conduct 'Cradle-to-grave' assessment of products, packages, process and activities (fig.5).

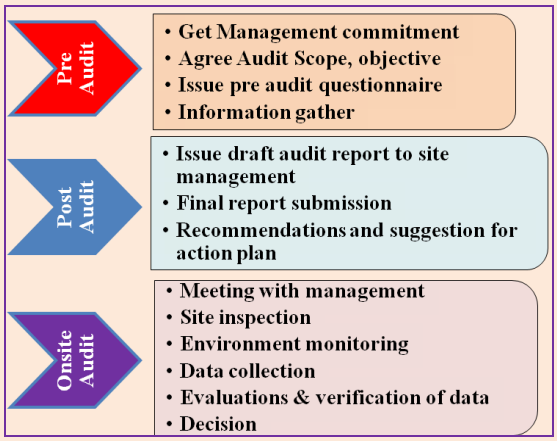

Fig.5: Environmental Audit

13. Resources required for EIA

For quality EIA the following expertise and resources should require.

- Qualified multi-disciplinary staffs,
- Technical guidelines, agreed with the competent authority
- Information about the environment,
- Analysis capabilities,
- Administrative resources,
- Institutional arrangements,
- Review, monitoring & enforcement power

14. Data availability in the subject area

Scattered data related to EIA legislation available from different sources on the following areas:

a) Baseline data of environmental quality (air, water & soil and climate), b) Landuse and land cover pattern, c) Ecological assessment of flora and fauna, d) Economic and social impact of any developmental project, e) Impact prediction, f) Impact evaluation, g) Impact mitigation, h) Environmental management plan, i) Risk analysis, j) Disaster management plan, k) Rehabilitation plan

EIA and EMP case study reports of some large developmental projects sometimes available in different web platform and institutions.

According to the 1994 clearance procedure the MoEF&CC has issued sectoral guidelines and environmental appraisal questionnaires and needed following documents:

- ✓ Filled in application form (as per Schedule II of EIA Notification).
- ✓ A summary of the project/feasibility report (1 copy).
- ✓ EIA (EIS)/EMP report (20 copies).
- ✓ Risk analysis on on-site emergency preparedness plan (20 copies) in case of projects involving hazardous substances.
- ✓ Site clearance from MOEF for site-specific projects mentioned in the EIA notification.
- ✓ Consent to establish from SPCB.
- ✓ NOC from the local authorities (e.g., District Collector).
- ✓ Commitment regarding the availability of water and electricity from the appropriate agencies.
- ✓ Approval of the Chief Controller of Explosives under the Petroleum Act and Rules for layout and storage of hazardous substances and from the Directorate of Industrial Safety and Health under the Factories Act and Rules.
- ✓ Comments/Observations/Recommendations of the Chief Wildlife Warden in case a wildlife habitat/migration path exists within 25 km of project site.
- ✓ Comprehensive summary rehabilitation plan, where displacement of more than 1,000 people is anticipated.
- ✓ Copy of the application forwarded to the state government, in case of diversion of forest land.
- ✓ Copy of the application forwarded to the state government in case the CRZ notification applies.
- ✓ Clearance from the Airport Authority of India, if applicable.
- ✓ Details of the public hearing conducted by SPCB and copies of the advertisements issued for public hearing.
- ✓ Filled-in environmental appraisal questionnaires issued by MOEF, along with the attachments (mentioned in the questionnaire).

15. Environmental Clearance Procedure in India

As the utility of EIA became clear, there was need to establish project clearance procedure. In 1994 a clearance procedure was issued that followed EIA Notification 1994. There were some constraints in the procedure that include:

- ✓ Burdensome procedure.
- ✓ Disproportionate details sought with applications.
- ✓ Delay in appraisal meetings.
- ✓ Time consuming and requiring undue effort.
- ✓ Reopening of technical issues during various stages of appraisal.
- ✓ Poor quality of EIA studies by consultants.
- ✓ Delays by other concerned agencies.

Due to these reasons the reengineering was done in the EIA process implementation based on project chosen. The MoEF conducted a review on previous EC process which is comprehensive under the Environmental Management Capacity

Building Project in 2001, reformation in investment approvals and implementation procedures was set up by central government.

The revised new EIA legislation notified by MoEF&CC in September 2006. The notification makes it mandatory for various developmental projects. Like the EIA Notification of 1994, the revised legislation has put the onus of clearing projects on the state government depending on the size/capacity of the project.

16. Public participation in EIA process:

Public participation is essential for a successful EIA process.

- **Who?** Comments from people from **all the groups/ parties** who are projected to get affected by the proposed project are required to be considered. Great care should be taken **to avoid excluding anyone**. In the '**scoping**' stage importance can be given on those possible impacts which may have ***local interests***, e.g., threat to an endangered species/ presence of a historical monument/ presence of wildlife habitat/ water scarcity, etc.
- **Why?** Projects of any kind will **serve a society** in one form or other (*products/ electricity/ amusement/ communication*,etc). It is thus useful to determine how far the proposed project will match the **common people's expectation**.
- **When?** There is a tendency in most of the people **to lose interest** in an issue after a given length of time. Thus, public involvement is to be made at the **end** of an EIA study and **over a short period of time**.
- **How?** Public involvement procedure varies country to country. In the US, Canada and in some of the countries of EU public participation has become synonymous to **public hearing**. In India Amendment of the **EIA Notification (2007)** requires that public must be informed and consulted on a proposed development after the completion of the EIA report through a public hearing. The other methods of people participation are formal meeting, informal gathering, etc.

17. The EIA Notification (1994) by the MoEF, Govt. of India:

The primary EIA Notification,1994 (MoEF, EIA Notification S.O.60(E), dt. 27/01/1994) was ***amended*** several times and the last one was made in 2019. Any person who desires to undertake any new project or the expansion or modernization of any existing industry or project listed in **Schedule I** shall submit an application to the Secretary, Ministry of Environment and Forests, New Delhi. The application shall be made in the proforma specified in **Schedule II** and shall be accompanied by an EIA report and EMP report. According to the MoEF&CC Notification, 2007 (**Schedule I**) there are **42 type of projects** requiring EIA.

- ***Environmental Clearance procedure***:

The procedure of Environmental Clearance for the above category of projects has been outlined in the EIA Notification (1994). Environmental Clearance is granted by the **Impact Assessment Agency** of the MoEFCC. **State governments** also have the *power* to give Environmental Clearance in the cases of cogeneration power plants of any capacity, gas/ naphtha-based or coal-based power plants with fluidized bed technology (**up to 500 MW capacities**), conventional coal-based power plants (**up to 250 MW capacities**), etc. The above clearance is given **only when** the project site is located **beyond 25km** of the boundary of *reserve forests*, *biosphere reserves* and *critically polluted areas*.

The EIA Notification (1994) provides **two stage clearance** for some **site-specific projects** (mining, river valley projects, port construction, etc). Site-clearance is given in the **first stage**. After only that EIA is to be conducted and Environmental Clearance is thus given in the **second stage**. This provision for two stage clearance has been made to help project proponents who could not to spend funds on the EIA study, *if the site is not cleared*. Site-clearance is given by the airport authority, port authority, forest department, Ministry of Defence, etc as needed in site-specific projects. Furthermore, the government time to time notifies certain areas in the country as **ecologically sensitive** and developmental activities in these areas are regulated as per the provisions of the notifications.

The documents required to be submitted for Environmental Clearance are:

1. Project report (1 copy)
2. EIA and EMP reports (20 copies each)
3. Risk Analysis and Disaster Management Plan (20 copies; *in case of projects involving **hazardous substances***)
4. Rehabilitation Plan (*when **displacement of at least 1,000 people** is anticipated*)
5. No Objection Certificate (NOC) from the SPCB and local authorities
6. Clearance from airport authority, port authority, forest department, Ministry of

Defence, etc as needed in **site-specific projects**

7. Availability of water and electricity from the competent authorities
8. Public hearing report
9. Dully filled in Environmental Appraisal Questionnaire

According to the amendment introduced to the **EIA Notifications (2007)**, ***public hearing*** has been made mandatory for Environmental Clearance. The public hearing is organized by the **SPCB**. Prior notice of at least **30days** has to be given before the hearing. Adverisement (*at the cost of project proponent*) has to be given in at least **2 local newspapers** including one in the local vernacular. After the notification, all relevent documents are to be kept **avaialable for public inspection** at a designated place, such as the SPCB office. The project proponent is required to give clarification(s) for any query emerged out at the public hearing. Finally, the public hearing report has to be **attached** to the application for *Environmental Clearance*.

The application for Environmental Clearance, when received by the **Impact Assessment Agency** directly or through the state governments, will be **scrutinized**. Then if needed the case may be referred to the **Expert Committee***. The project proponent will then be called to make a *presentation* and defend their proposal. If felt necessary, the Committee may ask for *additional information* or decide for a **physical site visit**.

*The **Expert Committee** will consist of experts in the following disciplines:

1) Ecosystem Management, 2) Air/Water Pollution Control, 3) Water Resource Management, 4) Flora/Fauna Conservation and Management, 5) Land Use Planning, 6) Social Sciences/Rehabilitation, 7) Project Appraisal, 8) Ecology, 9) Environmental Health, 10) Subject Area Specialists, 11) Representatives of NGOs/Persons concerned with environmental issues.

Finally, evaluating all the documents, reports and queries, the Impact Assessment Agency will give their decision for Environmental Clearance.

- ***Guidelines/ Rules for selection of Industry sites***: The guidelines specified in the EIA Notification (1994) are:

1. At least **25 km away from ecologically or otherwise sensitive areas** (*religious or historical monuments*, *archeological monuments*, *seismic areas*, *biosphere reserves*, *sanctuaries*, *scenic areas*, *national parks*, *international border areas*, etc)
2. At least **500 m away from high tide line (HTL)**
3. At least **500 m away from flood plains of rivers**
4. At least **500 m away from highways** and **railway lines**
5. At the project implementation time if any major settlement (**≥ 3 lakh populations**) is noticed **within 50 km**, the industry should be sited at least **25 km away** from the *projected growth boundary* of that settlement **after a decade**.
6. Industries **cannot be sited within** municipal limits of Municipal Corporations, Municipal Councils and *Nagar Panchayats*
7. Industries **cannot be sited within** a **25 km belt** around the cities having population **≥ 10 lakhs**
8. Industries **cannot be sited within** a **7 km belt** around the periphery of notified **wetlands**

18. Conclusion:

A 360^{o} approach to mitigate different global environmental problems is required on an immediate implementation basis. Industrial revolution onwards human beings have changed the nature in the name of development, which has ultimately resulted a situation that now the existence of human race on the face of the earth is under question. Multidimensional as well as selection of alternate best possible approach is required in cases of every developmental project vis-a-vis industrial activities. The evolution of EIA and its time to time structural improvements have definitely given the thrusts required for global environmental betterment. Further beneficial strategies would make an EIA as the most useful environmental management tool.

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Event	**Date**	**Place & Correspondence**
International Conference on Environment, Agriculture and Biotechnology (ICEABT)	06th Jan 2023	Ooty, India http://academicsconference.com/Conference/26856/ICEABT/
International Conference on Agriculture (ICAG)	26thJan 2023	Goa, India http://asar.org.in/Conference/35230/ICAG/
Global conference on Renewable Energy and Climate Change (GCRECC)	27thJan 2023	Kolkata, India http://arsss.org/Conference/25700/GCRECC/
Global conference on Renewable Energy and Climate Change (GCRECC)	08thFeb 2023	London, United Kingdom http://arsss.org/Conference/29056/GCRECC/
Geosciences and Green Technology	18-19th March, 2023	Dubai, UAE https://unitedresearchforum.com/environmentalscience-conference/

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