

## **EXPERT LECTURE:**

# **“Environmental Impact Assessment: What, why and how?”**

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# Review: Definition of EIA



Environmental  
Impact Assessment is

**A formal process for identifying:**

- likely effects of activities or projects on the ENVIRONMENT, and on human health and welfare.
- means and measures to mitigate & monitor these impacts



**Environment is broadly interpreted: physical, biological, and social.**

**In EIA, the term “impacts” is used instead of “effects of activities.”**

**What is an impact?**

# What is an impact?

The impact of an activity is a deviation (a change) from the baseline situation that is caused by the project / activity.

Mitigation

$$A + X = Y \xrightarrow{\hspace{1cm}} Z$$



To measure an impact, you must know what the baseline situation is.

The baseline situation is the existing environmental situation or condition in the absence of the activity.

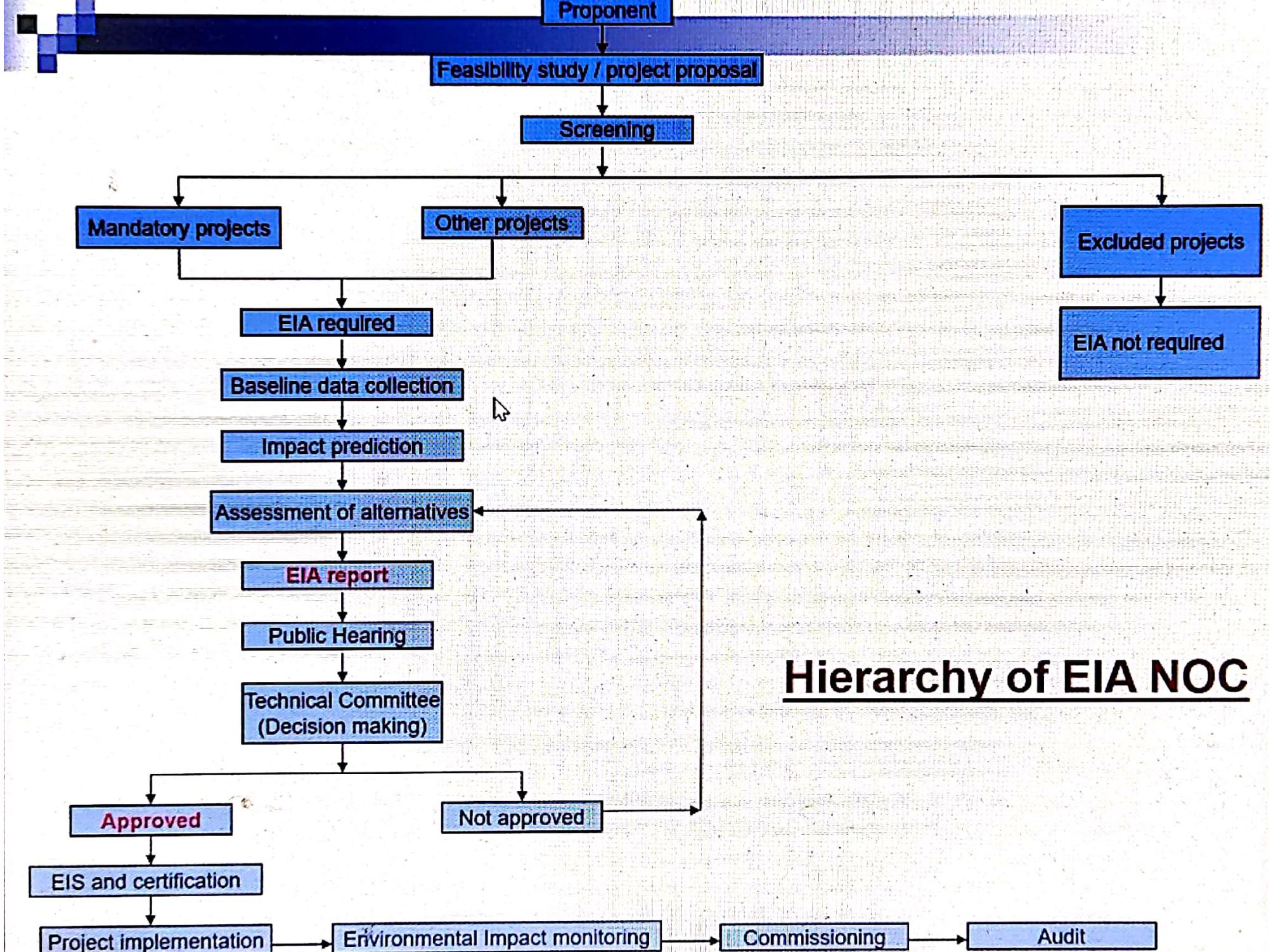
The baseline situation is a key concept in EIA.

More...

## Types of impacts

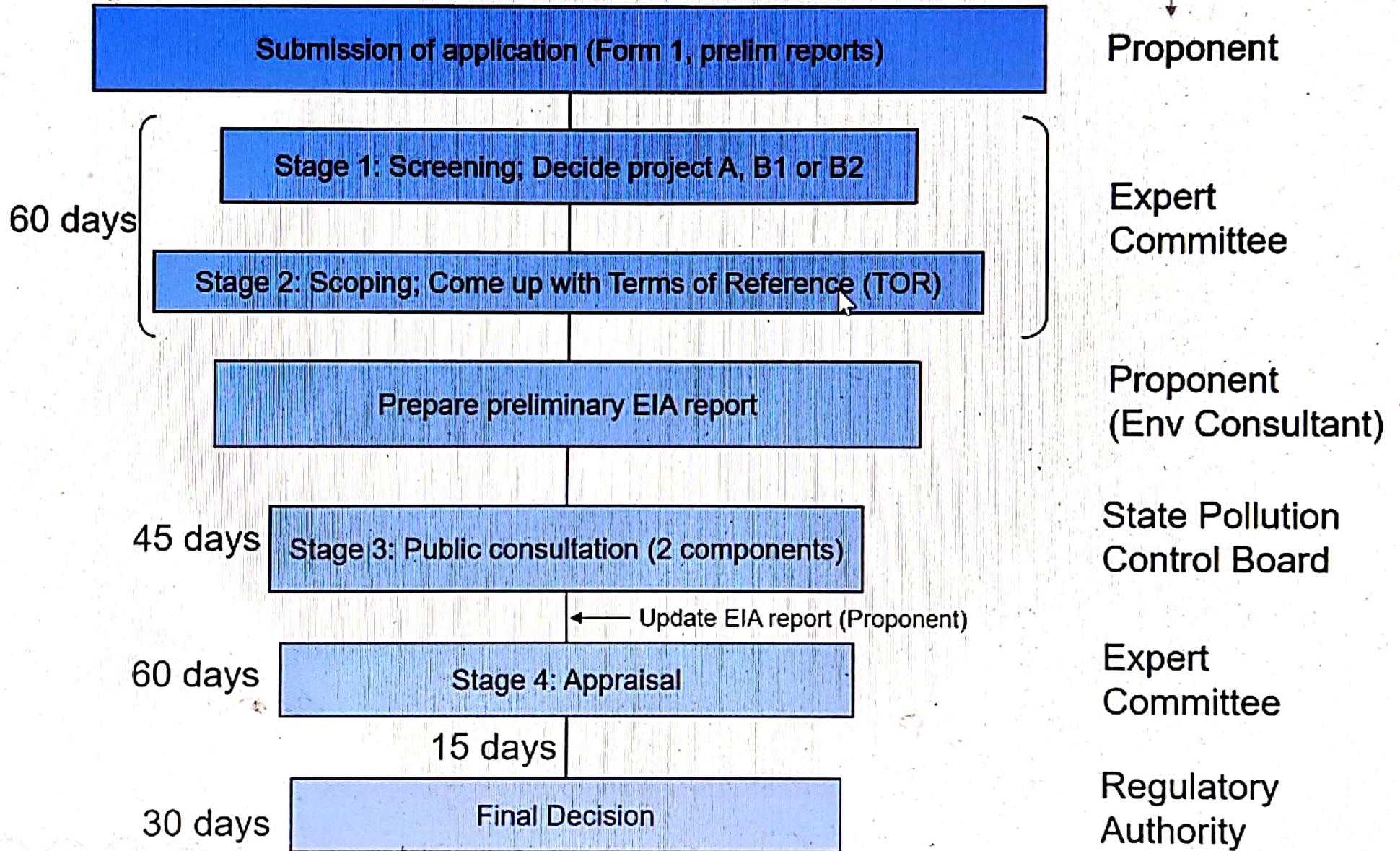
- 1) Nature – Direct and Indirect.
- 2) Intensity – High, moderate and low.
- 3) Types – Environmental, Social, Socio-economic.
- 4) Reversibility – Reversible, irreversible.
- 5) Occurrence – Low likelihood, high probability.
- 6) Significance – significant, insignificant.
- 7) Spatial Extent –  
Local, regional, transboundary, global.
- 8) Duration – Temporary, Permanent.





## Hierarchy of EIA NOC

# Summary of EIA process and Rough Timelines



# The baseline situation

The baseline situation is not simply a “snapshot.”

Describing the baseline situation requires describing both the **normal variability** in environmental components & current trends in these components.



This chart of groundwater levels shows both variability and a trend over time.

Both are part of the groundwater baseline situation.

# The baseline situation

In characterizing the baseline situation, many environmental components MAY be of interest

The components of interest are those that are likely to be affected by an activity—or upon which the activity depends for its success

Water      *Quantity, quality, reliability, accessibility*

Soils      *Erosion, crop productivity, fallow periods, salinity, nutrient concentrations*

Fauna      *Populations, habitat of animals*

Env Health      *Disease vectors, pathogens*

Flora      *Composition and density of natural vegetation, productivity, key species*

Special      *Key species ecosystems*

# Types of impacts & their attributes

The EIA process is concerned with all types of impacts and may describe them in a number of ways

- \* Intensity
- \* Direction
- \* Spatial extent
- \* Duration
- \* Frequency
- \* Reversibility
- \* Probability

Direct & indirect impacts

Short-term & long-term impacts

Adverse & beneficial impacts

Quantitative and qualitative impacts

But all impacts are NOT treated equally.

## Definition:

EIA may be defined as the documentation of an environmental analysis, which includes identification, interpretation, prediction and mitigation of impacts caused by a proposed project (action).

EIA can be defined as the systematic identification and evaluation of the potential impacts (effects) of proposed projects, plans, programmes or legislative actions relative to the physical-chemical, biological, cultural and socio-economic components of the total environment.

## BENEFITS OF THE EIA PROCESS:

- Potentially screens out environmentally-unsound projects.
- Proposes modified designs to reduce environmental impacts.
- Identifies feasible alternatives.
- Predicts significant adverse impacts.
- Identifies mitigation measures to reduce, offset, or eliminate major impacts.
- Engages and informs potentially affected communities and individuals. (Project Affected persons) R & R policy (Self study).
- Influences decision-making and the development of terms and conditions.

## EIA – Forms of impact assessment ???

Under the umbrella of EIA, a number of specific forms have developed;

- Social Impact Assessment (SIA)
- Socio-Economic Impact Assessment (SEIA)
- Health Impact Assessment (HIA)
- Strategic Environmental Assessment (SEA)

Other forms of impact assessment that have emerged in recent years;

- Regulatory Impact Assessment (RIA)
- Human Rights Impact Assessment (HRIA)
- Cultural Impact Assessment (CIA)
- Post Disaster Impact Assessment (PDIA)
- Climate Change Impact Assessment (CCIA)

## EIA process - Participants:

(1) **PROPOSER:**

Can be Government agency or a private firm wishing to initiate the project. e.g. NHA.

(2) **ASSESSOR:**

Is the agency, company or person having responsibility of preparing the EIS. e.g. Env Consultant.

(3) **REVIEWER:**

Is the agency, board or person having responsibility for reviewing the EIS and assuring compliance with published guidelines or regulations. e.g. EAC

(4) **DECISION MAKER:**

Can be a head of State, a Group of Ministers, an elected body or a single designated individual. e.g. MoEF.

- (5) **SPECIAL INTEREST GROUPS:**  
Includes environmental organizations (NGO's), labour unions, professional societies and local associations.
- (6) **PUBLIC AT LARGE:**  
Includes citizens and the media.
- (7) **OTHER GOVERNMENT AGENCIES:**  
Are agencies with a special interest in the project.  
Components of Central / State Government or District, cities, talukas, villages.
- (8) **INTERNATIONAL:**  
Refers to neighbouring countries or inter-governmental bodies.

## ENVIRONMENTAL CLEARANCE PROCESS:

The various stages in the prior Environmental Clearance (EC) process for new projects compromises of 4 steps namely:

(1) SCREENING:

- ❖ Applicable only for category 'B' projects / activities to go forward with further studies for preparation of EIA / EMP report.
- ❖ This depends upon nature and location specificity of the project.

(2) SCOPING:

- ❖ Applicable for category A and B1 projects.
- ❖ It includes determination of detailed Terms of Reference (TOR).
- ❖ It addresses all relevant environmental issues for preparation of EIA report for the project for which environmental clearance is sought.
- ❖ The TOR are determined on the basis of information furnished by the applicant in the prescribed FORM-I.

(3)

### CONSULTATION:

- ❖ All category A and B1 projects / activities shall undertake Public Consultation.
- ❖ Public Consultation shall not be applicable to:
  - Modernization of irrigation projects.
  - Projects located within industrial estates or parks.
  - Expansion of road and highways with no further acquisition of land.
  - Building / construction projects / area development projects / townships.
  - Projects concerning defence and security or involving other strategic considerations as determined by the Central Government.
  - All category B2 projects / activities.
- ❖ There are two components of public consultation:
  - (i) Public hearing which refers to getting feedback from project affected people (PAP).
  - (ii) Seeking written comments from various stakeholders, having plausible stake in environmental aspects.
- ❖ Public Consultation should be carried out at the site or in close proximity to project site.

(4) APPRAISAL:

- ❖ Detailed scrutiny by the EAC or SEAC of documents like
  - ❖ the final EIA report.
  - ❖ outcome of the public consultations including public hearing proceedings.
  - ❖ submitted by the applicant to the regulatory authority concerned for grant of environmental clearance.
- ❖ Appraisal of all projects or activities which are not required to undergo public consultation, or submit an EIA report (Category B2) shall be carried out on the basis of (i) prescribed application Form 1 / Form 1A (ii) any other relevant information
- ❖ At this stage, decision for grant / rejection of Environmental Clearance is taken and conveyed to applicant within the stipulated period (105 days).
- ❖ Validity of environmental clearance
  - Mining projects – max 30 years
  - River valley projects – max 10 years
  - Other projects – 5 years

## After Public Consultation;

- ❖ Applicant shall address all environmental concerns expressed during this process.
- ❖ Make appropriate changes in the draft EIA.
- ❖ Final EIA report shall be submitted by the applicant to the concerned regulatory authority for appraisal.