

# **ENVIRONMENTAL IMPACT ASSESMENT (EIA)**

**Environmental Science**

# *Environmental Impact Assessment*

- EIA - a formal process used to predict the environmental consequences of any development project
- EIA is intended to identify the environmental, social and economic impacts of a proposed development prior to decision making.
- using EIA it is possible to arrive at the following.
- The most environmentally suitable option at an early stage.
- The Best Practicable Environmental Option.
- Alternative processes.

# Environmental Report/Statement

- A description of the project: location, design, scale, size etc.
- Description of significant effects.
- Mitigating Measures
- A Non-Technical summary.

# ***Different Types of Impact Assessments***

- **Climate Impact Assessment**
- **Demographic Impact Assessment**
- **Development Impact Assessment**
- **Ecological Impact Assessment**
- **Economic and Fiscal Impact Assessment**
- **Environmental Auditing**
- **Environmental Impact Assessment**
- **Environmental Management Systems**
- **Health Impact Assessment**
- **Project Evaluation**
- **Public Consultation**
- **Public Participation**
- **Risk Assessment**
- **Social Impact Assessment**
- **Strategic Impact Assessment**
- **Technology Assessment**

# *The Benefits of EIA:*

- Reduced cost and time of project implementation.
- Cost-saving modifications in project design.
- Increased project acceptance.
- Avoiding impacts and violations of laws and regulations.
- Improved project performance.
- Avoiding waste treatment/clean up expenses.

# *The Benefits of EIA*

- The benefits to local communities from taking part in environmental impact assessments include:
- A healthier local environment (forests, water sources, agricultural potential, recreational potential, aesthetic values, and clean living in urban areas).
- Improved human health.
- Maintenance of biodiversity.
- Decreased resource use.
- Fewer conflicts over natural resource use.
- Increased community skills, knowledge and pride.

# Key elements of EIA

- **Scoping:** identify key issues and concerns of interested parties.
- **Screening:** deciding whether an EIA is required based on information collected.
- **Identifying and evaluating alternatives:** listing alternative sites and techniques and the impacts of each.
- **Mitigating measures dealing with uncertainty:** reviewing proposed action to prevent or minimize the potential adverse effects of the project.
- **Issuing environmental statements:** reporting the findings of the EIA.

## *Scoping:*

- To identify the key issues and concerns of the interested parties.
- To identify who is concerned.
- To identify what are their concerns.
- To identify why are they concerned.
- To identify what is the threshold of concern where change becomes unacceptable.

# Screening:

- *Schedule 1* - Environmental Assessments are required in every case. Schedule 1 projects range from "an integrated works for the initial melting of cast-iron and steel", to "a thermal power station or other combustion installation with a heat output of 300 MW or more."
- *Schedule 2* - Environmental Assessments are required if the project is likely to give rise to significant environmental effects by virtue of factors of their nature, size or location. The list of Schedule 2 projects is greater than that of schedule 1. It covers projects from "a holiday village" to "peat extraction" and "pig rearing" to "a shipyard".

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- ***Alternatives:***
  - ***Mitigating Measures to deal with Uncertainty:***
  - ***Environmental Statements / reports:***

# *Key Points to Remember while Conducting an Effective EIA:*

- Recognize it as a tool to enhance the decision-making process, "not the decision making process itself"
- Keep the assessment simple
- Focus time and effort on the most relevant matters
- Don't invest too much, nor too little, time on an assessment
- Tailor each assessment to the particular needs of the project

# *Key Points to Remember while Conducting an Effective EIA:*

- Be inventive.
- Be prepared for inexact and suggestive data
- Avoid secrecy
- Seek external help and advice

# *Tips for Preparing an Environmental Assessment Report:*

- Be as concise as possible
- Avoid jargon
- Report on all relevant matters
- Analyze significant details in greater depth
- Provide a rationale for excluding topics from further consideration

Ensure that the report contains a comprehensive evaluation of how project activities affect both the depletion of local resources and the production of waste material.

## *Tips for Preparing an Environmental Assessment Report:*

Account for all community and project-related activities

- Provide a community profile

Describe any impact on neighbouring communities.

- mention opportunities for environmental enhancement

Outline the role of the target community in the assessment process.

# *Tips for Preparing an Environmental Assessment Report:*

- Provide an assessment of basic alternatives
- Explain any gaps or uncertainties in the information gathered
- Outline a plan of action for all mitigation measures
- Include relevant material whether in written, oral or visual form
- Try to propose conclusions that can be defended by the environmental assessment team

## *Tips for Preparing an Environmental Assessment Report:*

- Distinguish between opinions held by the community and those held by the environmental assessment team.

Mention the consequences and impacts of the project for different social groups.

make sure that communities are furnished with copies of the final environmental assessment report.

# *Contents of a typical Environmental Impact Assessment:*

- Description of proposed activity.
- Analysis of site selection procedure and alternate sites
- Baseline conditions / major concerns
- Description of potential positive and negative environmental, social, economic and cultural impacts including cumulative, regional, temporal and spatial considerations.

## ***Contents of a typical Environmental Impact Assessment:***

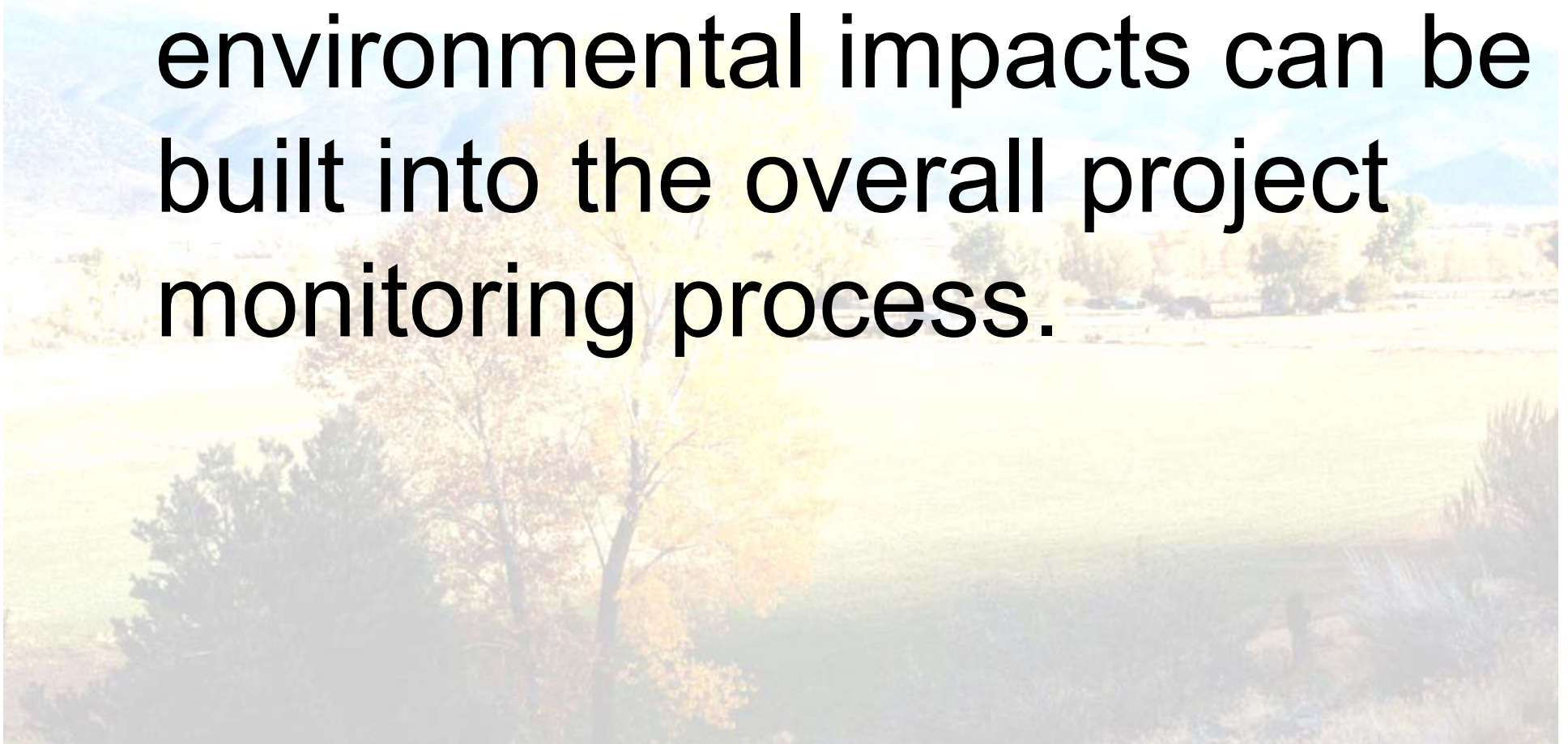
- Significance of impacts under social, economic and cultural impacts including cumulative, regional, temporal and spatial considerations.
- Mitigation plans.
- Identification of issues related to human health.
- Consideration of alternatives, including not proceeding.

## ***Contents of a typical Environmental Impact Assessment:***

- Monitoring plans
- Contingency plans for unpredicted impacts.
- Waste minimization and recycling plans.
- Public consultation program.
- Plans to minimize release of adverse substances.
- Terms of reference.
- Any other information deemed necessary.

## *Monitoring Environmental Impact:*

- The monitoring of environmental impacts can be built into the overall project monitoring process.



## ***Monitoring Environmental Impact:***

- Does the various measures proposed for dealing with impacts seem to be having the desired effect?
- Does the project or programme appear to be having any significant environmental impacts other than those anticipated during the design phase?

# *Participatory Monitoring & Evaluation:*

- **an opportunity for communities to take responsibility for an activity designed for its own benefit.**
- **Interviews**
- **Group Discussions**
- **Questionnaires**
- **Observations**
- **Scientific testing (It has been proven that communities can undertake effective testing without sophisticated training)**
- **Maps, drawings or any other visual techniques that can accurately depict changes**
- **Before-and-after images captured by audio-visual equipment**
- **Other methods devised by the community.**

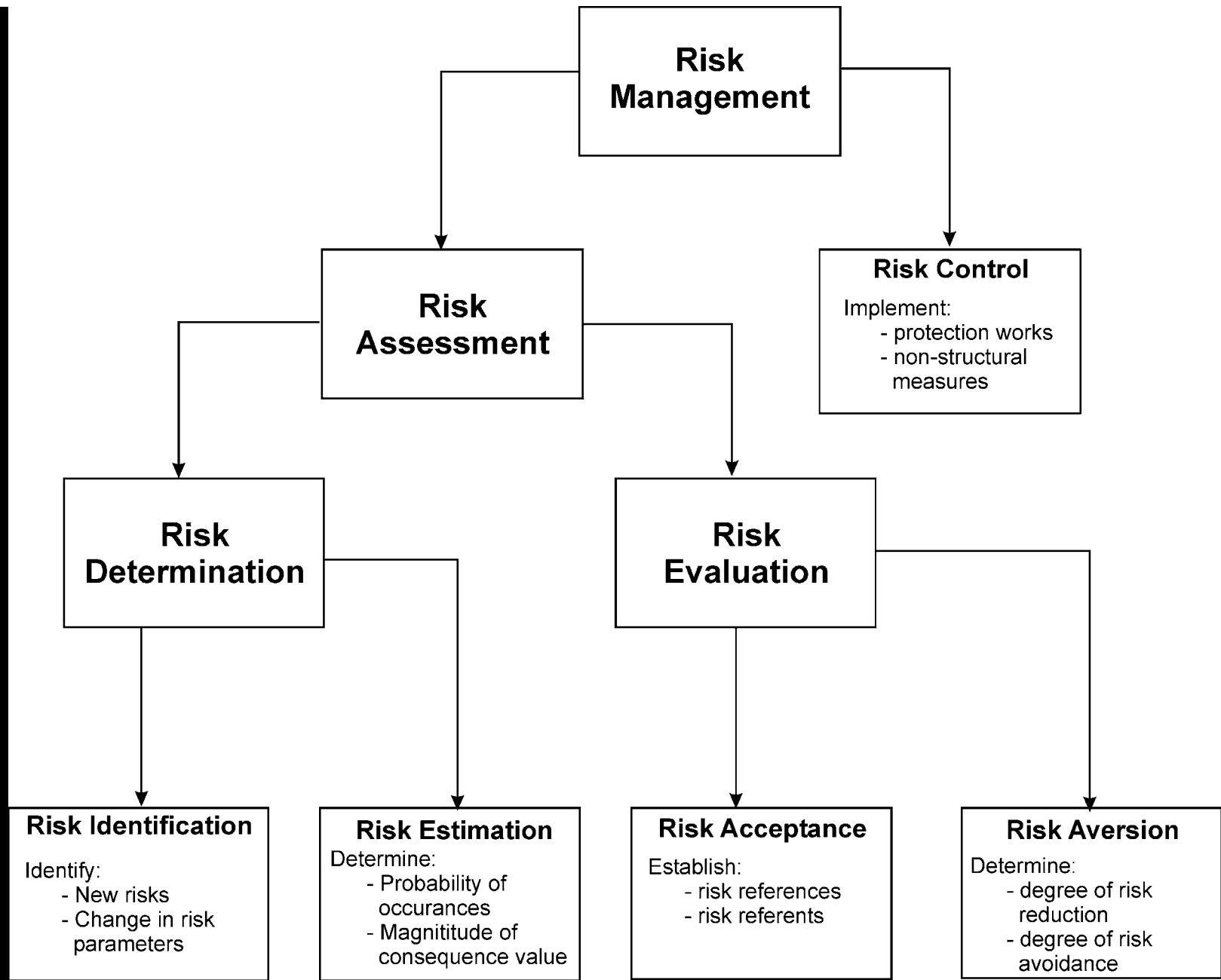
## *Risk management:*

- "The overall process of risk identification, quantification, evaluation, acceptance, aversion and management."



# ***Risk management:***

- Risk identification
- Risk quantification
- Risk evaluation
- Risk acceptance
- Risk aversion
- Risk control



**Fig 11.1 Steps in Risk Management**