

Nalanda Open University, Patna

Course Name: M.A./M.Sc. Environmental science
Coordinator: Prof. (Dr.) Bihari Singh
Mob. No. : +91 9546452116
+91 9334331422
Email ID: bihari_singh2001@yahoo.com

E-Content II (v)
for
Part II Examination, 2020
Short description of the suggested Topics
THEORY PAPER
PAPER – XIV
(EIA, ECO-PLANNING AND SUSTAINABLE DEVELOPMENT)
Lesson Prepared by Er. Rajesh Kumar Gupta
Counsellor M.A./M.Sc. (Environmental Science, Part II, Paper - XIV)

4. Role and key elements of Environmental Impact Assessment Report.

The information contained in the environmental assessment report meet the term of references established at the scoping stage of EIA process. The purpose of EIA report is to provide a coherent statement of the potential impacts of a proposal and measures that can be taken to reduce and remedy them.

The key elements are as follows:

- 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.
- User-friendly - A document that communicate the technical issues to parties in a clear and comprehensive way.
- Executive or Non-technical summary - It may be used as a public communication document statement of need for and objectives of the proposal.
- References to applicable legislation, regulatory and policy framework.
- Description of the proposal and how it can be implemented.
- Comparison of the proposal and the alternatives.
- Description of the project sitting, current land use and relevant policies and plan for the area.
- Description of baseline condition and trends which identify any changes anticipated prior to project implementation.
- Review of public consultation process.
- Consideration of the main impact (positive and adverse) that are identified and their predicted characteristics (eg. magnitude, occurrence & timing etc). Their proposed mitigation measures include,

- Evaluation of the significance of the residual impacts for each alternatives
- An Environmental Management Plan (EMP) to identify how proposed mitigation and monitoring measures will be translated into specific action as part of impact management.
- Appendices containing supporting technical informations, description of method used to collect and analyze data, list of references etc.

5. Advantages and disadvantages of different Environmental Impact identification methods.

Main advantages and disadvantages of impact identification methods

Method	Advantages	Disadvantages
Checklist	<ul style="list-style-type: none"> • Easy to understand and use • Good for site selection and priority sitting. • Simple ranking and weighting 	<ul style="list-style-type: none"> • do not distinguish between direct and indirect impact • Do not link action and impact • the process of incorporating values can be controversial
Matrices	<ul style="list-style-type: none"> • link action to impact • good method for displaying EIA result 	<ul style="list-style-type: none"> • difficult to distinguish between direct and indirect impacts • have potential for double counting of impacts
Networks	<ul style="list-style-type: none"> • link action to impact • useful in simplified form for checking for second order impacts • handles direct and indirect impacts 	<ul style="list-style-type: none"> • can become very complex if used beyond simplified version
Overlays	<ul style="list-style-type: none"> • easy to understand • focus and display spatial impacts • good siting tool 	<ul style="list-style-type: none"> • can be cumbersome • poorly suited to address impact duration or probability
GIS and computer expert systems	<ul style="list-style-type: none"> • excellent for impact identification and spatial analysis • good for experimenting 	<ul style="list-style-type: none"> • heavy Reliance on knowledge and data • often complex and expensive

6. Discussion on different approaches used for Environmental Impact Mitigation.

Depending on the timing of the project cycle and the nature of impacts, a number of approaches can be used for Environmental Impact Mitigation

- **Developing better alternatives** - A large number of alternatives can be generated at the early stage of the project planning & design and the best practical environmental option can be identified.

- **Making change in the project planning & design** - From a list of potential impact for an extensive range of project types and suggested design measures to mitigate the environmental impact can be found.
- **Carrying out the impact monitoring and Management** - In this step we monitor to check that impacts are 'as predicted'. When unforeseen impacts or problems occur, that may require corrective measures within acceptable levels mitigating measures are changed by modifying the Environmental Management Plan (EMP).
- **Monetary Compensation** – It requires to provide compensation for loss of land or amenity.
- **Site remediation bonds** - A bond system can be used to ensure that sufficient fund will be available for the required mitigation.
- **Resettlement plan** - A resettlement plan may be required to ensure that no one is worse off than before. Particular attention should be given to indigenous, minority and vulnerable groups who are at risk from resettlement.