

## **Environmental Impact Assessment (EIA) and Environmental Impact Statement (EIS):**

The ***Environmental Impact Assessment*** is the official appraisal of the likely effects of a proposed policy, program or project on the environment. European Council EIA Directive 85/337/EEC of 27 June 1985 applies the term environmental impact assessment to the identification, description and assessment of the direct and indirect effects of a project on: human beings, fauna and flora; soil, water, air, climate and the landscape; the interaction of these factors; and on material assets, and the cultural heritage

### **Purpose of the Environmental Assessment Method:**

- Identification the main environmental issues and aspects
- Agreement the relative significance of the environmental aspects
- Assessment the environmental performance of the proposed scheme against the significant aspects
- Identification significant positive and negative impacts
- Evaluation the overall environmental impact of the scheme to enable comparison between alternative proposals
- Facilitation an inclusive approach with the project stakeholders

### **Procedures and stages of the Environmental Impact Assessment:**

1. Identification of projects requiring EIA, sometimes known as screening;
2. Identification of the key issues to be addressed in an EIA, called scoping;
3. Impact identification, assessment and evaluation
  - a. Identification of environmental and cultural heritage aspects and agree significance
  - b. Identification of the environmental impact of the project on the cultural heritage
    - i. Checklists
    - ii. Matrices
    - iii. Quantitative methods
    - iv. Networks
    - v. Overlay maps
  - c. Assessment of the environmental impact of the project on the cultural heritage in relation to the following qualities: direct/indirect, spatial distribution, beneficial or adverse, short or long term, permanency (especially irreversibility), differing rates of changes, cumulative:
    - i. Mechanistic/mathematical models describing cause-effect relationships in the form of flow charts or mathematical functions;
    - ii. Mass balance models describing inputs and outputs from a defined environmental compartment;
    - iii. Statistical models such as regression analysis describing the relationship between data;
    - iv. Physical models replicating some element of the project-environment interaction;
    - v. Field/laboratory models enabling the prediction of impacts on receptors;
    - vi. Analogue models enabling comparison with similar situations elsewhere;
    - vii. Various other models such as Threshold of consent models.
  - d. Evaluation of the environmental impact of the project on the cultural heritage (assessing the impacts' significance and defining the level of concern

engendered by the impacts identified) in relation to the following influence factors: magnitude; spatial and temporal extent; degree of recovery of the affected environment; value of the affected environment; level of public concern; political repercussion.

- i. Cost-benefit analysis seeking to express impacts in monetary terms based on net present value calculations using direct and indirect evaluation techniques;
  - ii. multi-criteria analysis (weights) achieving consensus on the significance of impacts;
  - iii. decision analysis (trees) revealing value judgements which underpin decisions and allowing for the identification of the full consequences of a given course of action;
  - iv. goals achievement matrices relating community goals to the impact of a development proposal.
4. Agreement the environmental aspects and their significance
  5. Impact mitigation and monitoring;
  6. Assembly of the result of an EIA in a document known as an Environmental Impact Statement (EIS) that relates all the positive and negative effects of a particular project on the environment.
  7. Review of the completed EIS;
  8. Public participation.

The ***Environmental Impact Statement*** (EIS) is a document prepared by a proponent or developer applicant describing a proposed program or project; alternatives to the project and measure to be adopted to protect the environment.

The EIS it shall include a description of the likely significant effect, direct and indirect, on the environment of the development, explained by relevance to its possible impact on historical, archaeological, cultural heritage.

### **Characteristics of an *Environmental Impact Statement* (EIS)**

- Clear, concise summary
- Full glossary
- Contents and authorship clearly set out
- Brief history of proposed development
- Full description of the proposed project, objectives, geographical boundary, short and long term impacts, reversible or permanent impacts
- Full description of existing environment - data assembly
- Alternative actions - the no-action alternative
- Justification of proposal - economic, social and environmental
- Proposal for protection of the environment from proposed actions - risks and mitigation actions for components of the system failing
- Effect on local infrastructure
- Communication - full involvement of the public
- The decision - public release of the decision

### **Proposition of *Environmental Impact Statement* (EIS) Layout**

- Title Page
- Contents Page
- Non-technical Summary

- General Introduction
- Part 1: Methods and Key Issues
  - Methods Statement
  - Summary of key issues; monitoring programme statement
- Part 2: Background to the proposed development
  - preliminary studies: need, planning, alternatives and site selection
  - site description, baseline conditions
  - description of proposed development
  - construction activities and programme
- Part 3: Environmental Impact Assessment – topic areas
  - Landuse, landscape and visual quality
  - Geology, topography, soils
  - Hydrology and water quality
  - Air quality and climate
  - Ecology: terrestrial and aquatic
  - Noise
  - Transport

Flow chart depicting the stages of the Environmental Impact Assessment

