NOVA SCHOOL OF SCIENCE & TECHNOLOGY

Basic concepts in environmental assessment

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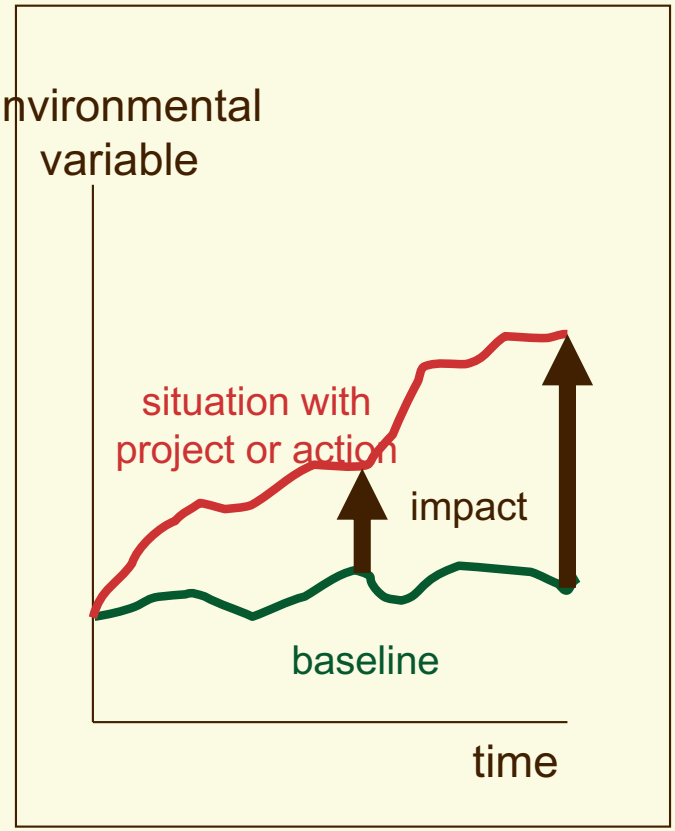
Definitions I: impact, baseline



- Environmental impact: effect on the state of the environment resulting from a project, activity, plan or policy
- Baseline/option zero: scenario comprehending the future state of the environment without the project/ option of not executing the project
- Impact variable: relevant for the decision; usually classified as positive or negative

Definitions II: studies and due process

- Environmental impact assessment (EIA): methodology and institutional procedure to support decisions on the approval of a project
- Environmental impact statement/study (EIS): technical document on the impact of a project, usually submitted by the proponent
- Strategic environmental assessment (SEA): methodology and institutional procedure to support decisions on a policy, plan or program (also used for early planning of complex projects)
- Environmental report (ER): report on the environmental consequences of a plan or policy

Definitions III: significant impact

- ✓ Significant impact: changes the uses of the environment, or its capacity to support certain human or ecological activities
- ✓ Criteria for significance scales
  - Space: nature and classification of land
  - Time: duration, frequency, reversibility
  - Affected values: human health, ecosystem, economy, quality of life
  - Legislation or standards
- ✓ Keep transparency, objectivity, coherence

Definitions IV: special impacts

- ✓ Mitigation: reduction of the magnitude and significance of the impact of an action
- ✓ Compensation: creation of equivalent value, in kind and magnitude, to the one destroyed
- ✓ Residual impact: impact assuming successful application of mitigation/compensation
- ✓ Cumulative impact: resulting from the combination of different causes (several projects or components within a project), often non-linear or synergic

Definitions V: direct vs. indirect impact

- ✓ Direct or primary impact: resulting immediately or certainly from activity
- ✓ Indirect or secondary impact: resulting from a combination of the activity and other (uncontrolled) factors, with a clear causality nexus

  Note: often indirect impacts are as important or more than direct impacts

Guiding principles of environmental assessment

- ✓ Principle of prevention
- ✓ Principle of public participation

Scope of application of EIA: large projects

- ✓ Motorways, railways, ports, airports
- ✓ Metallurgic, chemical, petrochemical, pulp, cement, large manufacturing plants, mining and other polluting industry
- ✓ Energy industry: oil refining, fossil fuel and renewable power plants
- ✓ Agriculture, animal production and forestry
- ✓ Urban and tourism development
- ✓ Dams and waterworks
- ✓ Waste treatment and disposal

Goals of project EIA

1. To determine whether the project is acceptable
2. To select best alternatives
3. To define measures to mitigate or compensate impacts

General goal: DECISION SUPPORT

Note: it is not the role of EIA to substitute inadequate planning, greenwash bad projects, or develop academic monographies

Scope of application of SEA

- ✓ Policies, programs and plans influencing projects subject to EIA:
  - Funds and financing programs for projects
  - Land use and zoning plans (national, regional and local)
  - Sectoral plans with strong environmental influence (e.g. energy, transportation, water and other public works)

Goals of SEA

- ✓ To integrate environmental concerns into the planning or law-making process
- ✓ To define a framework for the evaluation of individual projects
- ✓ To guarantee adequate public participation

General goal: DECISION SUPPORT

Role of EIS or ER

- ✓ To improve the environmental performance of the project, plan, program or policy
- ✓ To explore viable alternatives
- ✓ To provide adequate information to the public and decision maker on benefits and liabilities of the project, plan or policy

Note: it is not the role of the technical EIS or ER to decide whether the project, plan or policy should be approved (that falls to the overall EIA or SEA process)

Environmental assessment: ecological and social issues

- ✓ Environmental quality: air, water, soil, noise
- ✓ Biodiversity, landscape and natural heritage
- ✓ Land use zoning and management
- ✓ Social aspects: ethnography, built and archaeological heritage, health
- ✓ Economic aspects: local and regional
- ✓ Economic viability? The issue of public funding

Environmental assessment main actors

- ✓ Proponent
- ✓ Consultants: EIS/ER authors
- ✓ EIA/SEA authority
- ✓ EIA/SEA decision-maker
- ✓ Licencing/planning authority
- ✓ Local government
- ✓ Other government agencies
- ✓ Environmental NGO
- ✓ Local community
- ✓ Other economic and social groups of interests
- ✓ Mass and social media

Environmental assessment standard process

Need for EA and integration in decision making

Scoping

Environmental impact studies

Technical review

Public consultation

Decision

Post-evaluation