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NET, IAS, State-SET (KSET, WBSET, MPSET, etc.), GATE, CUET, Olympiads etc.: Environmental Impact Assessment

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An environmental impact assessment (EIA) is an assessment of the possible impact positive or negative that a proposed project may have on the environment, together consisting of the natural, social and economic aspects.

The purpose of the assessment is to ensure that decision makers consider the ensuing environmental impacts to decide whether to proceed with the project. The International Association for Impact Assessment (IAIA) defines an environmental impact assessment as “the process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made.”

After an EIA, the precautionary and polluter pays principles may be applied to prevent, limit, or require strict liability or insurance coverage to a project, based on its likely harms. Environmental impact assessments are sometimes controversial.

EIA Around the World

Australia

At the federal level, EIA provisions are contained within the EPBC Act (the Environment Protection and Biodiversity Conservation Act 1999) . At the State [i.e.. . provincial] level, each jurisdiction has EIA provisions typically contained in land use planning law. For example in New South Wales (NSW) , EIA is performed under either Part 3A, Part 4 or Part 5 of the Environmental Planning and Assessment Act 1979, depending on the type of development. Overlap between federal and state requirements is addressed via bilateral agreements or one off accreditation of state processes, as provided for in the EPBC Act.

Canada

The Canadian Environmental Assessment Act (CEAA) is the legal basis for the federal environmental assessment (EA) process. CEAA came into force in 1995. Legislative amendments were introduced in 2001 and came into force on October 30,2003. EA is defined as a planning tool to identify, understand, assess and mitigate, where possible, the environmental effects of a project. Under the CEAA, all federal government departments and agencies are required to undertake an EA for projects relating to a physical work and for

any proposed physical activity listed in the Inclusion List Regulations where it exercises one or more of the following CEAA triggers:

- Proposes or undertakes a project
- Grants money or any other form of financial assistance to a project
- Grants an interest in the land to enable a project to be carried out
- Exercises a regulatory duty in relation to a project, such as issuing a permit or license that is included in the Law List Regulations.
- If a federal government department or agency exercises one or more of the above-mentioned triggers, it becomes a Responsible Authority (RA) under CEAA. As an RA, the federal department or agency in question must ensure that an EA is carried out in accordance with the CEAA and must consider the EA findings before a decision is made that could allow the project to proceed.

China

The Environmental Impact Assessment Law (EIA Law) requires an environmental impact assessment to be completed prior to project construction. However, if a developer completely ignores this requirement and builds a project without submitting an environmental impact statement, the only penalty is that the environmental protection bureau (EPB) may require the developer to do a make-up environmental assessment. If the developer does not complete this make-up assessment within the designated time, only then is the EPB authorized to fine the developer. Even so, the possible fine is capped at a maximum of about US \$ 25,000, a fraction of the overall cost of most major projects. The lack of more stringent enforcement mechanisms has resulted in a significant percentage of projects not completing legally required environmental impact assessments prior to construction.

China ' s State Environmental Protection Administration (SEPA) used the legislation to halt 30 projects in 2004, including three hydro-power plants under the Three Gorges Project Company. Although one month later (Note as a point of reference, that the typical EIA for a major project in the USA takes one to two years.) , most of the 30 halted projects resumed their construction, reportedly having passed the environmental assessment, the fact that these key projects ' construction was ever suspended was notable.

A joint investigation by SEPA and the Ministry of Land and Resources in 2004 showed that 30 – 40% of the mining construction projects went through the procedure of environment impact assessment as required, while in some areas only 6 – 7% did so. This partly explains why China has witnessed so many mining accidents in recent years.

SEPA alone cannot guarantee the full enforcement of environmental laws and regulations, observed Professor Wang Canfa, director of the centre to help environmental victims at China University of Political Science and Law. In fact, according to Wang, the rate of China's environmental laws and regulations that are actually enforced is estimated to be barely 10%

India

The Ministry of Environment and Forests of India have been in a great effort in Environmental Impact Assessment in India. The main laws in nation are Water Act (1974) , The Indian Wildlife (Protection) Act (1972) , The Air (Prevention and Control of Pollution) Act (1981) and The Environment (Protection) Act (1986) . The responsible body for this is Central Pollution Control Board (CPCB) . By S. Lakshmi Narasimhan, Madurai, Tamilnadu.

Nepal

In Nepal, EIA was started in early 1980s, particularly in the donor-assisted projects. In 1982, Nepal established the Environment Impact Study Project (EISP) under the Ministry of Forests and Soil Conservation to initiate activities for the formulation of necessary policies and laws and create public awareness and the environmental matters. The Constitution of the kingdom of Nepal 1990; Water Resource Act, 1992; Electricity Act, 1992; Electricity Regulation, 1993 and Hydropower Development Policy, 1992 emphasized on the protection of the existing environment and stated that no significant adverse environmental impact in terms of physical, biological, social, economic and cultural aspects should occur due to any development project. The government of Nepal introduced the National Environmental Impact Assessment Guidelines (NEIAG) in 1993. These guideline provided a general methodology for conducting an EIA study but there was no approval process and legal requirement of an EIA study.

Progresses were made in the Environmental protection issue during the 8th five year plan (1992 – 1997) . The following development in Environmental protection were achieved during that time:

- Formulation of Environmental Protection Act 1992
- Establishment of Ministry of Population and Environment
- Development of National Environmental Policies and Action Plan, EIA guidelines developed
- Consideration of environmental concerns in hydropower projects
- Development of industrial, irrigation and agricultural policies that undertook environmental concerns
- Prior to EIA, IEE should be done.

European Union (EU)

The European Union has established a mix of mandatory and discretionary procedures to assess environmental impacts. European Union Directive $\frac{85}{337}$ /EEC) on Environmental Impact Assessments (known as the EIA Directive) was first introduced in 1985 and was amended in 1997. The directive was amended again in 2003, following EU signature of the 1998 Aarhus Convention. In 2001, the issue was enlarged to the assessment of plans and programmes by the so called Strategic Environmental Assessment (SEA) Directive ($\frac{2001}{42}$

/EC , which is now in force. Under the EU directive, an EIA must provide certain information to comply. There are seven key areas that are required:

1. Description of the project
 - a. Description of actual project and site description
 - b. Break the project down into its key components, i.e.. . construction, operations, decommissioning
 - c. For each component list all of the sources of environmental disturbance
 - d. For each component all the inputs and outputs must be listed, eg, air pollution, noise, hydrology
2. Alternatives that have been considered
 - a. Examine alternatives that have been considered
 - b. Example: In a biomass power station, will the fuel be sourced locally or nationally?
3. Description of the environment
 - a. List of all aspects of the environment that may be effected by the development
 - b. Example: Populations, fauna, flora, air, soil, water, humans, landscape, cultural heritage
 - c. This section is best carried out with the help of local experts, eg the RSPB in the UK
4. Description of the significant effects on the environment
 - a. The word significant is crucial here as the definition can vary
 - b. 'significant needs to be defined
 - c. The most frequent method used here is use of the Leopold matrix
 - d. The matrix is a tool used in the systematic examination of potential interactions
 - e. Example: In a windfarm development a significant impact may be collisions with birds
5. Mitigation
 - a. This is where EIA is most useful
 - b. Once section 4 has been completed it will be obvious where the impacts will be greatest
 - c. Using this information ways to avoid negative impacts should be developed
 - d. Best working with the developer with this section as they know the project best
 - e. Using the windfarm example again construction could be out of bird nesting seasons
6. Non-technical summary (EIS)
 - a. The EIA will be in the public domain and be used in the decision making process
 - b. It is important that the information is available to the public
 - c. This section is a summary that does not include jargon or complicated diagrams

- ## New Zealand

Sri Lanka

United States

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Usually, an agency will release either a Draft Environmental Assessment (Draft EA) or a Draft Environmental Impact Statement (DEIS) for comment. Interested parties and the general public have the opportunity to comment on the draft, after which the agency will approve the “Final Environmental Assessment” (Final EA) or Final Environmental Impact Statement (FEIS). Commenting on the Draft EA is typically done in writing, submitted to the lead agency as defined in the Notice of Availability. Draft EIS’s require public hearings, so comments can be made in person, as well as in writing. Occasionally, the agency will later release a “Supplemental Environmental Assessment” (Supplemental EA) or a Supplemental Environmental Impact Statement (SEIS), especially if the project parameters or environmental conditions or effects change substantially after the issuance of the Final EA or FEIS.

The adequacy of an EIS can be challenged in federal court. Major proposed projects have been blocked because of an agency’s failure to prepare an acceptable EIS. One prominent example was the Westway landfill and highway development in and along the Hudson River in New York City. Another prominent case involved the Sierra Club suing the Nevada Department of Transportation over its denial of Sierra Club’s request to issue a supplemental EIS addressing air emissions of particulate matter and hazardous air pollutants in the case of widening US Highway 95 through Las Vegas. The case reached the 9th Circuit Court of the United States, which led to construction on the highway being halted until the court’s final decision. The case was settled prior to the court’s final decision.

Several US state governments that have adopted “little NEPA’s,” i.e. ... state laws imposing EIS requirements for particular state actions and some of those state laws refer to the required environmental impact studies as Environmental Impact Reports or Environmental Impact Assessments. For example, the California Environmental Quality Act (CEQA) requires an Environmental Impact Report (EIR).

These variety of state requirements are yielding voluminous data not just upon impacts of individual projects, but also to elucidate scientific areas that had not been sufficiently researched. For example, in a seemingly routine Environmental Impact Report for the city of Monterey, California, information came to light that led to the official federal endangered species listing of Hickman’s potentilla, a rare coastal wildflower.

Transboundary EIA

Environmental threats do not respect national borders. European governments realized that to avert this danger, they must notify and consult each other on all major projects under consideration that might have adverse environmental impact across borders. The UNECE Convention on Environmental Impact Assessment in a Transboundary Context was negotiated to provide an international legal framework for transboundary EIA.