MSc Environmental Science

Semester III

Subject: Environmental monitoring and management

Objectives of environmental management

- For use of resources
- To overcome environment and ecological crisis
- For economic need and values
- To reduce disasters
- To decide the limiting line between environment and development.
- To identify the environmental problem and to find its solution.
- To restrict and regulate the exploitation and utilization of natural resources.
- To regenerate degraded environment and to renew natural resources (renewable)
- To control environmental pollution and gradation.
- To reduce the impacts of extreme events and natural disaster.
- To make optimum utilization of natural resources.
- To assess the impacts of proposed projects and activities on environment.

Cost-benefit analysis

- Way of assessing the consequences of public projects and reforms, in which the estimated benefits are weighed against the costs.
- For this purpose, all consequences must be measured in the same unit, and the traditional choice of unit is money.
- To be explicitly included in a cost-benefit analysis, then, environmental changes must be valued in monetary terms.
- Provides an organizational framework for identifying, quantifying, and comparing the costs and benefits (measured in dollars) of a proposed policy action.
- Like most personal decisions, it involves a comparison of the costs of an action compared with considerations of the benefits of that action.

Five basic laws of Ecology

•Barry Commoner suggested that we can reduce the negative effects by sensitizing, informing and educating ourselves about our connection to the natural world. Commoner summarized the basics of ecology into what he termed “laws of ecology.” Here are five laws of ecology:

1. Everything is connected to everything else.
2. Everything has to go somewhere or there is no such place as away.
3. Everything is always changing. (he actually said, “Nature knows best.”
4. There is no such thing as a free lunch.
5. Everything has limits.

Legislative framework exist in India for conserving and managing coastal ecosystem

- Coastal Pollution Control Series, 1982
- Coast Guard Act, 1978
- Merchant Shipping Act, 1958
- Marine Fishing Regulation Acts, 1981
- Coastal Zone Management Plans,1996
- Exclusive Economic Zone and other Maritime Zones Act, 1976
- Coastal Aquaculture Authority Act, 2005.

Coastal Regulation Zones(CRZ)

- CRZ-1: these are ecologically sensitive areas these are essential in maintaining the ecosystem of the coast. They lie between low and high tide line. Exploration of natural gas and extraction of salt are permitted
- CRZ-2: these areas form up to the shoreline of the coast. Unauthorised structures are not allowed to construct in this zone.
- CRZ-3: rural and urban localities which fall outside the 1 and 2. Only certain activities related to agriculture even some public facilities are allowed in this zone
- CRZ-4: this lies in the aquatic area up to territorial limits. Fishing and allied activities are permitted in this zone. Solid waste should be let off in this zone.

Base line data in EIA

- Physical- the area, the soil properties, the geological characteristics, the topography, watershed properties, etc.
- Chemical- water, air, noise and soil pollution levels, etc.
- Biological- the biodiversity of the area, types of flora and fauna, species richness, species distribution, types of ecosystems, presence or absence of endangered species and/or sensitive ecosystems etc.
- Socioeconomic- demography, social structure, economic conditions, developmental capabilities, displacement of locals, etc.
- Cultural- location and state of archaeological and/or religious sites.

Objectives of the EMP

1. Place the proposed/existing activity in the context of the local and regional environment;

2. Adequately describe all components of the proposed/existing activity, so that the Agency can consider approval of a well-defined project, and prescribe relevant and adequate Permit Conditions for the monitoring of the activity;

3. Identify the environmental issues/risks associated with the proposed/existing activity;

4. Provide the basis of the developer's environment management program, which shows that the environmental impacts resulting from the proposed /existing activity, including cumulative impacts, can be acceptably managed; and

5. Provide a document that clearly sets out the reasons why the proposed/existing activity should be considered environmentally acceptable.

Disadvantages of Industrialization

(i) Cities became crowded, smoky, with problems of slums, housing, sanitation, accidents and epidemics.

(ii) Women and child labour was badly exploited.

(iii) Workers suffered from long working hours, low wages, and unemployment, unsafe conditions of work, with no rights to vote strike or form trade unions.

(iv) Society, became divided into rich and poor, the 'Haves' and the 'Have- Nots'.

(v) It led to wars of imperialism and colonization.

Principles of sustainable development

- Respect and care for the community of life
- Improve the quality of human life
- Conserve the earth’s vitality and diversity
- Minimize the depletion of non-renewwable resources.
- Keep within the carrying capacity of earth
- Change personal attitudes and practices
- Enable communities to care for their own environments
- Provide a national framework for integrating development and conservation.

Thank You