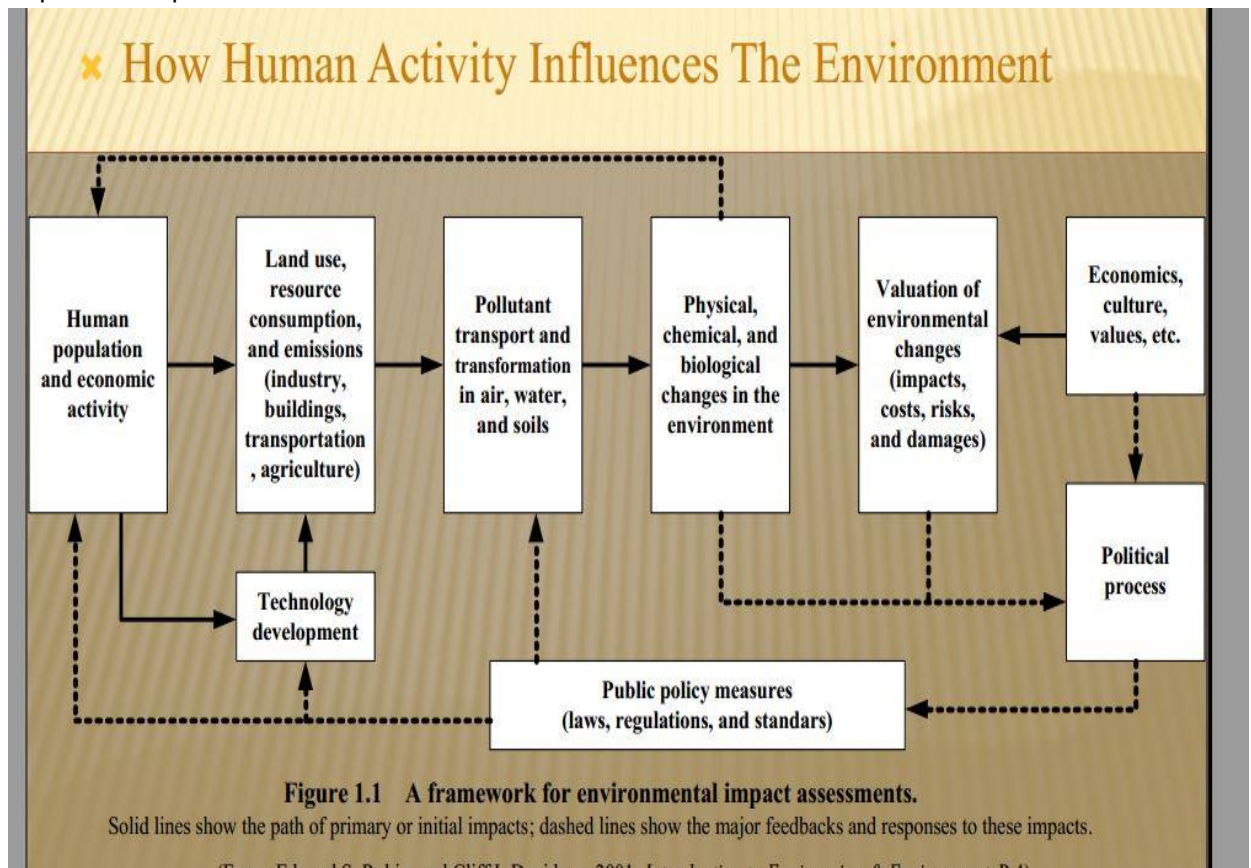


Global Environmental Issues

How many global environment issues do you know?

- Climate Change and Global Warming
- Biodiversity
- Acid Rain
- Marine Pollution
- Ozone Layer Depletion
- GE Food
- Population Explosion



The Objectives of EIA

- Predict environmental impact of actions;
- Find ways and means to reduce adverse impacts;
- Shape the actions to suit local environment;
- Present the predictions and options to the decision-makers;

EIA GUIDING PRINCIPLES

- **Participation:** Appropriate and timely access by all interested parties
- **Transparency:** All decisions should be open and accessible

- **Certainty:** Process and timing agreed in advance and followed by all
- **Accountability:** Decision makers and project proponents are responsible for their actions
- **Credibility:** Assessments are professional and objective
- **Cost-effectiveness:** Environmental protection is achieved at the least cost
- **Flexibility:** Process is adaptive and responsive
- **Practicality:** Information and outputs are usable in decision making and planning

INTEGRATION OF EIA INTO THE DECISION-MAKING PROCESS

- **Timing:** EIA conducted early in the project cycle
- **Disclosure:** EIA results disclosed to all interested parties
- **Weight:** EIA results are considered by decision makers
- **Revisions:** Plans revised to include feasible mitigation measures or a less damaging alternative
- **Mitigation:** Agreed-upon mitigation measures are implemented and monitored for effectiveness
- **Monitoring:** Post-project, follow-up monitoring of impacts conducted and results acted upon

CHARACTERISTICS OF EFFECTIVE EIAs

Completeness:

- ✓ all significant impacts considered,
- ✓ all relevant alternatives examined

Accuracy:

- ✓ appropriate forecasting procedures
- ✓ appropriate evaluation procedures

Clarity:

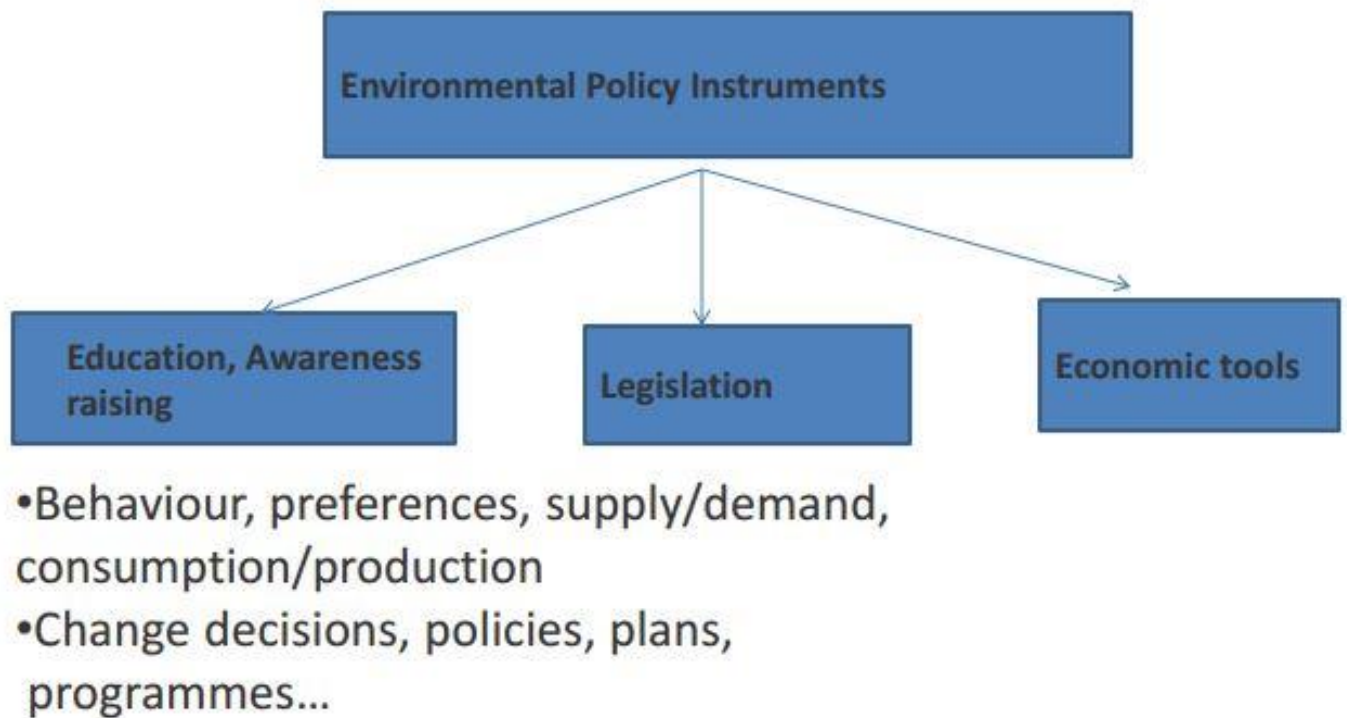
- ✓ all interested parties can comprehend issues

SUSTAINABILITY CRITERIA

- Application of clean technology
- Waste recycling or use
- Material utilization allowing recycling or re-use
- Energy efficiency/Use of renewable energy sources
- Public acceptability/Involvement of the community
- Full cost recovery for goods or services
- Equitable cost-benefit distribution

SEA

SEA in the policy making context a tool to assess and influence



Key aspects of SEA

- A legal procedure (or requirement)
- A process-oriented tool to integrate environmental issues in planning and decision- making
- An instrument for supporting 'good 'environmental governance
- An adaptive approach
- Strengthening institutions and organizations
- A systems perspective

SEA phases – Process & steps

1. Establish SEA context:

- a. Screen and decide on the need for SEA;

b. Identify **stakeholders** in the planning process; prepare a **communication plan**;

c. **Set objectives**: develop a common vision w. all stakeholders on (environmental) problems, objectives & identification of alternatives;

2. Conduct the SEA:

a. **Scoping**: SEA-content & boundaries; synergies/conflicts w existing (environm.) policy objectives

b. Collect baseline data; Assess alternatives;

c. **Identify**: opportunities and mitigate impacts;

d. **Ensure quality**: independent & public reviews

e. **Document**: data, analysis, results etc. => publish!

Scoping => competencies needed, ToR, commissioning, responsibilities, flexibility, transparency

3. Inform and influence decision-making:

c) Organise dialogue with stakeholders, planners & decision-makers on SEA results; agree on/make recommendations for decision making;

d) Justify trade offs

e) Justify political choices (in writing) that have been made in the finally adopted PPP (SEA=>decision!)

4. Monitor and evaluate:

c) Monitor:

- Decisions taken

- Implementation of adopted PPP;

d) Evaluate both SEA and PPP

SEA application

- **Spatial plans** – coastal zone dev. (plans), urban or industrial development
- **Multi-intervention programs** – where individual EIAs are not cost- effective.

SEA integrates env . issues + mitigation measures applied across the whole programme.

- **Cumulative impacts** – impacts of individual projects limited, significant when linked.
- **Macro policies** – poverty reduction strategies; tax reform; public sector reform; agric. policies, privatisation, trade policy.
- **Sector wide policies** - water; waste management; transport planning, energy, infrastructure => national impacts

The 5 I's of SEA

- **Influence** – the planning, the decision(-making process), implementation
- **Inform** – planners, stakeholders, decision-makers
- **Interact** – among planners, stakeholders, decision-makers
- **Institutions** – analyse, strengthen/build capacity , reform (if necessary)
- **Integrate** – environment in other sectors, development themes

Comparison EIA and SEA

EIA	SEA
Is <u>reactive</u> to a development proposal	Is <u>proactive</u> , informs development proposals
Addresses a specific <u>project</u>	Addresses Policy, Plan, Program (PPP) => SEA broader: areas, regions, sectors
Well <u>defined beginning & end</u>	Is a <u>continuing process</u> aimed at providing information at the right time
Assesses <u>direct impacts</u> and benefits	Assesses <u>cumulative impacts</u> , cross-border impacts etc.
Focus: mitigation of <u>impacts</u>	Mitigate impacts but also <u>strengthen capacity, env. Governance</u>
<u>Narrow perspective</u> , high level of detail	<u>Wide perspective</u> , low level of detail to provide a vision and overall framework

5 Entry points for setting ToRs for an SEA

1. Effective: No perfect recipes (look at earlier examples; but be flexible; adjust to context; follow legal requirements)
2. Timing: Plan to start early! => ensure SEA provides timely results in order to influence decision-making processes
3. Inclusion: plan for involvement of all relevant stakeholders to build consensus and ownership
4. Competence: Specify need for a sufficiently good team (multi-disciplinary, mix local and international, balance, experience)
5. Size: Only bite-off what you can chew (be realistic)

Entry points & components for commissioner of the SEA (from Scoping)

1. Setting clear Objectives of the SEA
2. Budget; Time; Work plan; planning process (timing, DLs)
3. Analytical approaches/Methodologies
4. Public participation
5. Competences required
6. Information to be provided (planning process, data etc.)
7. Clarification of Responsibilities
8. Report format
9. Information management/communication

10. Integration into planning process

11. Monitoring, evaluation, follow-up (roles, responsibilities)

ToR for drafting an SEA report? => Table of Contents

1. Preliminaries
2. Introduction
3. Analytical approach and Methodology (-ies)
4. Legal, Institutional and planning framework
5. Description of PPP and alternatives
6. Description of affected environment (Baseline)
7. Impact assessment
8. Mitigation measures & Monitoring and follow up
9. Conclusions & Recommendations
10. Supporting information

EXAMZ

SECTION: A

Question: 1

[20]

- a. Nyabihu District wants to put up an Industrial Plant for the manufacture of cars. A part from the cars the district will also provide infrastructure and social amenities in the region. In view of the socio-economic and bio-physical environmental implications that may result due to the proposal, there has been public debate particularly on the loss of habitat/biodiversity. 4 Marks]
- b. Before the proposal can proceed, the state government will require an Environmental Impact Assessment to be conducted.
 - i. Explain why an Environmental Impact Assessment is required [3]

Answer:

- Promotes better planning and leads to more responsible decision making [0.5 Marks]
- Evaluates the rationale behind proposed projects and activities; are there alternatives to a proposed project or activity? [0.5 Marks]
- Assists in pursuing sustainable development by evaluating alternatives means of undertaking proposed projects and activities [0.5 Marks]
- Assessment outputs facilitate informed decision making; anticipated environmental impacts can be weighed against economic benefits and other social gains in deciding whether to approve or reject proposals [0.5 Marks]
- Helps to identify and understand environmental impacts early in the project cycle; predicted impacts can be mitigated before they occur [0.5 Marks]
- Provides opportunity for input from interested parties; increases likelihood of public acceptance [0.5 Marks]

ii. Outline the main elements of this EIA report [4 marks]

Answer:

- executive summary [0.5 Marks]
- need for and aims of the proposal [0.5 Marks]
- description of proposal and alternatives [0.5 Marks]
- description of affected environment and community [0.5 Marks]
- public consultation and views [0.5 Marks]
- main impacts and their mitigation [0.5 Marks]
- evaluation of significant residual impacts [0.5 Marks]
- environmental management plan [0.5 Marks]

iii. Who will be the stakeholders in EIA [2 marks]

Answer:

- Proponent and beneficiaries (Local People) (0.5)
- Local Authorities (0.5)
- Private sector (0.5)
- Company Employees (0.5)

iv. What type of professionals will be part of the consultancy group performing the EIA. What will be the minimum that you can propose? [3 marks]

Answer: Six will be enough

A chemist (0.5)

An EIA expert (0.5)

Water Engineer (0.5)

Mechanical engineer (1)
 Electrical Engineer (0.5)
 Industrial engineer (0.5)
 Environmental engineer to deal with waste (0.5)

v. Mention four environmental impacts of this activity [2 marks]

Answer:

Air pollution

Waste produced by manufacturing cars

Extracting iron ore, bauxite, petroleum, copper, lead, and a variety of other raw materials to process steel, aluminium, plastics, glass, rubber, and other products necessary to construct automobiles consumes limited resources, uses great amounts of energy.

Noise pollution

c. Differentiate between SEA, EIA [6 Marks]

Answer:

EIA	SEA
Is <u>reactive</u> to a development proposal	Is <u>proactive</u> , informs development proposals
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SECTION: B

Question: 2

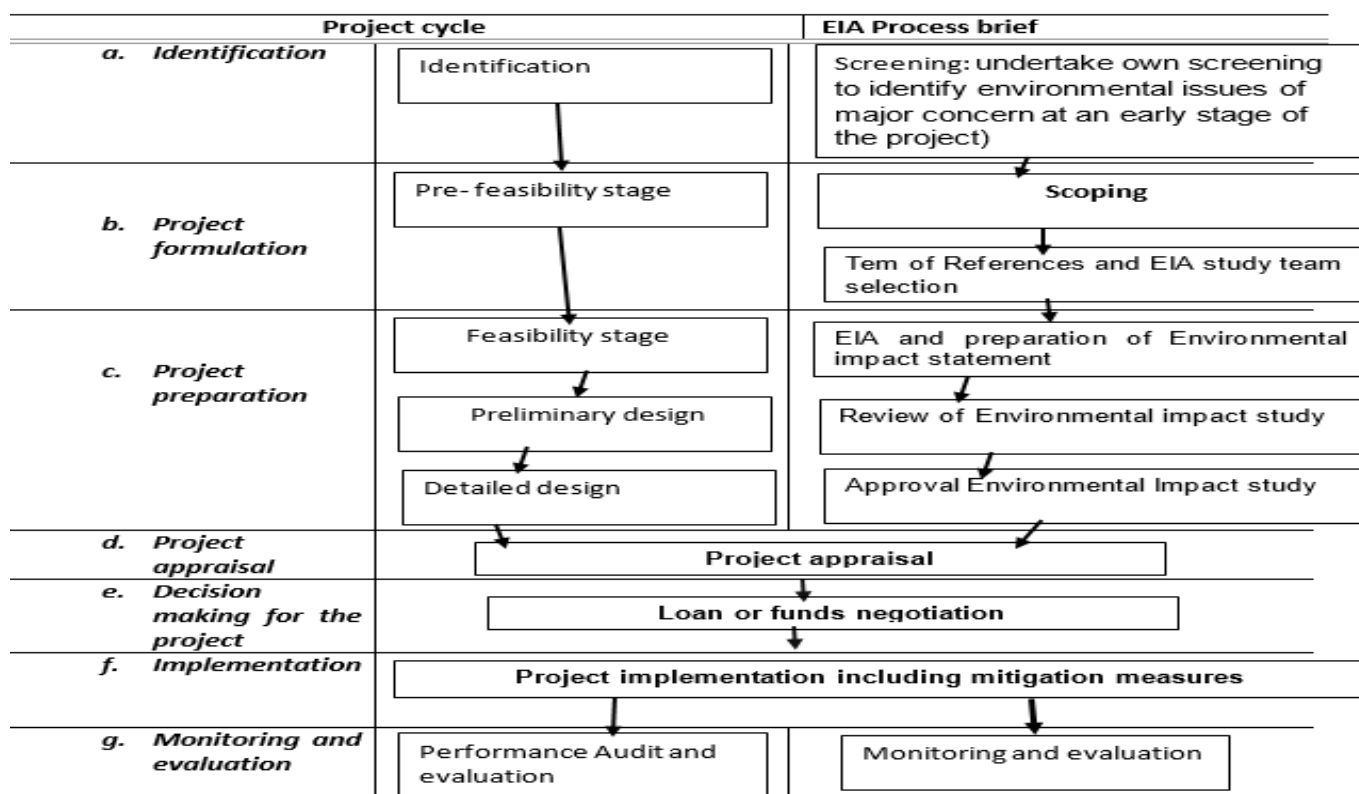
Suppose you have been recruited as principal Environment Engineer in Ministry of Infrastructure and you are a member in the team for development of secondary cities (Huye, Musanze, Nyagatare, Rubavu, Rusizi and/ or Muhanga).

1. Propose a matrix summarizing the projects stages and planned activities for EIA in every stages
7.5marks
2. What are factors and parameters to consider for baseline situation analysis
3marks

Briefly discuss on mitigation measures for environmental pollution control during extension and improvement of one of above cities

Answer:

1. EIA flow chart Vis project Implementation phases 7.5marks



2. Factors and parameters to consider for baseline situation analysis**3marks**

Factors	Criteria
Water	<i>Quantity, quality, reliability, accessibility</i>
Soils	<i>Erosion, crop productivity, fallow periods, salinity, nutrient concentrations</i>
Fauna	<i>Populations, habitat</i>
Environmental health	<i>Disease vectors, pathogens</i>
Flora	<i>Composition and density of natural vegetation, productivity, key species</i>
Special ecosystem	<i>Key species</i>

3. Mitigation measures for environmental pollution control during extension and improvement of one of above cities
4.5marks

#	Impacts	Mitigation measures
1	Air pollution by the fugitive emission generated during drilling, blasting, excavation, breaking and loading of the stones	Soil watering when soil works are being executed and where dust is emitted.
2	Risk of excess soil being eroded down the wetland below the site	Improve of land scape Maximization of storm water harvesting and used during the dry season.
3	Loss of habitat for some fauna and flora species and biodiversity reduction due to vegetation clearing of the site;	During land clearing, to maintain a maximum of vegetation
4	Risk of the accidents on the personnel of the site. If the protection equipment is not adequate accidents are most likely to occur.	Provide all staff on construction site with protective equipments (helmets, gloves, coats and boots where applicable). To teach the workers how to use adequately these equipments
5	Risk of the increase of HIV/AIDS and other Sexually Transmitted Diseases due to the increase in income which may cause unsafe behaviours.	The biggest workforce will be recruited from the region, and they normally return to their homes. Sensitization campaign to the staff on HIV/AIDS and other STDs, and avail condoms on site, free of charge.
6	Effects of generated solid wastes;	The garbage will be sorted on site and 5 categories of wastes will be treated separately. Regular inspection of the site Remove the soil degraded Efforts will be made to utilize the solid waste to the extent possible. The non-usable part would be appropriately dumped in an officially designated area.

7	Contamination of ground water by generated by used oil from the maintenance of the machines;	Regular inspection of the machines Used oil will be collected, stored in water tight recipients and taken to reuse or recycling plants Maintain storage and disposal area to prevent accidental release Provide spill mitigation equipment, double wall tanks and / or diking storage tanks
8	Risk of increase in road accidents resulting from increase in road traffic;	Regular maintenance of the road Humps added where needed. Use of traffic signs
9	Risk of noise pollution to surrounding population	Technology to be used is that that does not emit noise when blasting the rock Whenever the project expects to have an increase in noise emitted, the developer will use a mobile public address system to prepare the population around 3 days before.

Question: 3

- a. **Explain how EIA fits in the concept of sustainable development** (5 marks)

Answer

The EIA is a detailed study to determine the type and level of effects of the proposed project on the environment while proposing appropriate monitoring, mitigation and management measures (1.5)

Sustainable development is the development that meets the needs of the present without compromising the ability of future generation to meet their own needs.

(1.5)

Properly performed environmental impact assessment (EIA) is a useful tool that can help facilitate intragenic rational and intergenerational development and equity. Sustainable development can only be achieved when the development and environment are considered interdependent and mutually reinforcing in the long run.

(2)

- b. **Outline the main elements of an audit report** (5 marks)

Answer

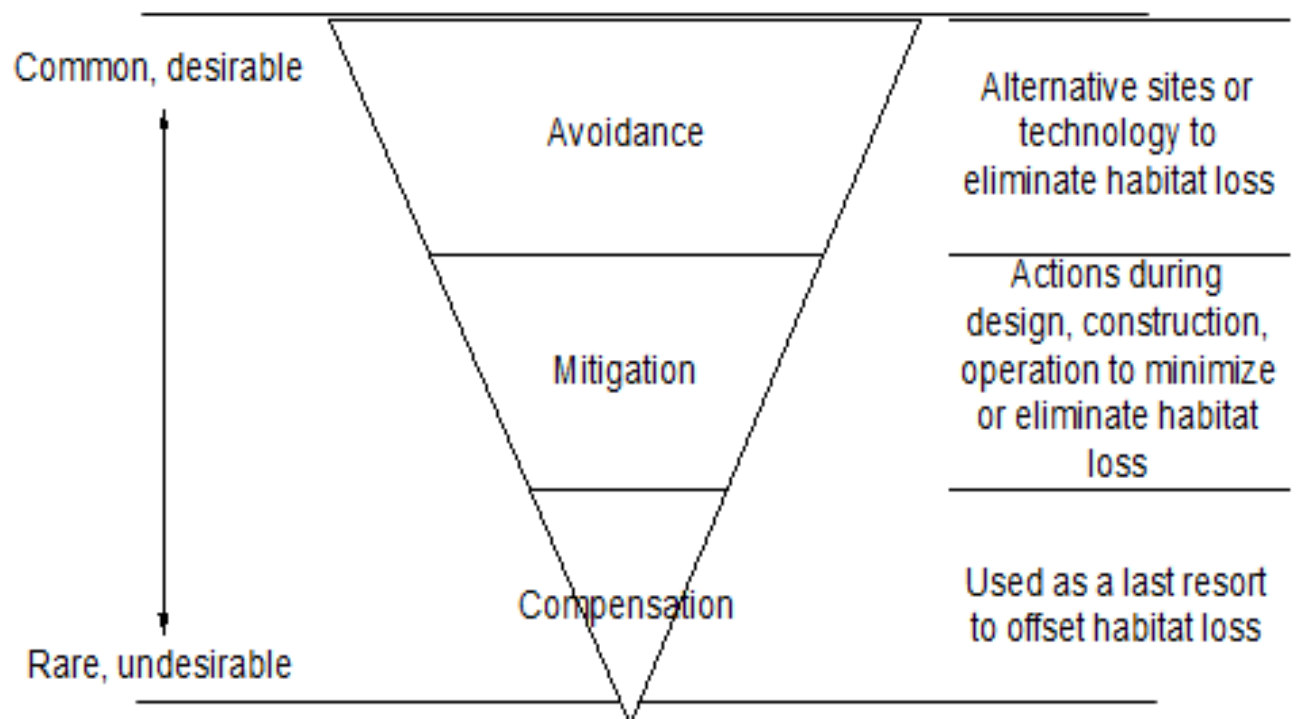
- Executive summary (key findings, commentary photographs, full list of all recommendations)

(1)

- Scope of Audit (areas audited, site location, audit focus) (1)
- Date of audit and participants (0.5)
- Detailed report (topics covered in audit protocol) (1)
- Conclusions and Recommendations (1)
- Appendices (Copy of audit protocol, Photo log, Supporting documentation) (0.5)

c. Explain the framework or principles of mitigation (5 marks)

Answer



Question: 4

[15]

a. What will be economic any 7 benefits of practicing EIA in your area (CIV/BCT/WEE/MEE/ELE/CS/SE) [7

Marks]

b. Explain the role of public involvement in EIA practice. [4Marks]

c. Differentiate screening from scoping in EIA process.

[2

Marks]

d. What are different phases for conducting SEA?

[2Marks]

Answers

a. What will be economic any 7 benefits of practicing EIA in your area
(CIV/BCT/WEE/MEE/ELE/CS/SE/ETE)

(1 marks *7 = Marks)

- Can identify impacts in advance of actions
- Can identify measures to mitigate predicted impacts
- Preventative approach (proactive) – is more cost effective than finding a cure after the fact
- Reduced cost and time of project implementation
- Cost-saving modifications in project design
- Increased project acceptance
- Avoiding impacts and violations of laws and regulations
- Improved project performance
- Avoiding waste treatment/clean up expenses
- A healthier local environment (forests, water sources, agricultural potential, recreational potential, aesthetic values, and clean living in urban areas)
- Improved human health
- Maintenance of biodiversity
- Decreased resource use
- Fewer conflicts over natural resource use
- Increased community skills, knowledge and pride

b. Explain the role of public involvement in EIA practice.

[4Marks]

1. Public involvement

(4 Marks)



OBJECTIVES OF PUBLIC PARTICIPATION

- Informing stakeholders
- Presentation of views, concerns and values
- Maximizing benefits
- Influencing project design
- **Obtaining local knowledge**
- Increasing public confidence
- Better transparency and accountability in decision-making

LESS CONFLICT

c. Difference between screening

[2Marks]

Screening

(1 Mark)

- determines the requirement for EIA
- establishes the level of review necessary

Scoping

(1 Mark)

- identifies the key issues and impacts
- establishes the terms of reference

d. What are different phases for conducting SEA?

[2Marks]

1 .Establish SEA context

(0.5 Mark)

2 .Conduct the SEA

(0.5 Mark)

3 .Inform and influence decision making

(0.5 Mark)

4 .Monitor and evaluate

(0.5 Mark)