UNIT–IV: SOCIO ECONOMIC ASSESSMENT

4.4- COST – BENEFIT ANALYSIS (CBA)

4.4 COST – BENEFIT ANALYSIS (CBA)

1. Cost benefit analysis is a systematic process for identifying, valuing and comparing costs and benefits of a project.
2. It is a systematic approach to estimate the strengths and weakness of alternatives (for ex. In transactions, activities, functional business requirements or project investments)
3. It is used to determine options that provide the best approach to achieve benefits while preserving savings.
4. CBA is a standard tool for evaluating the economic analysis or trade of analysis, investment of development projects.
5. Economic analysis takes into account the opportunity costs of resources employedand attempts to measure in monetary terms the private and social costs and benefits ofa project to the community or economy.

CBA Purposes

Broadly CBA has two main purposes

1. To determine if an investment/decision is sound (justification or feasibility) verifyingwhether its benefits outweigh the costs, and by how much.
2. To provide a basis for comparing projects which involves comparing the total

expectedcost of each option against its total expected benefits.

CBA Process:

- Define the goals and objectives of the activities.
- List alternate projects /programs.
- List stakeholders.
- Select measurement and measure all cost/benefit elements.

Predict outcome of cost and benefits over relevant time period.

- Convert all costs and benefits into a common currency.
- Apply discount rate.

- Calculate net present value of project optionsPerform sensitivity analysis to identifying the key variables that are major influence in the cost and benefits of the project.

- Adopt recommended choice.

****Cost Benefit analysis is carried out for the selected EIA report

- The cost-benefit analysis of the highway road project enables to make a comparison of the individual-projects and give priority to the competing projects on a monetary basis.

- The Road Authority and Transport Department must use the available resources efficiently, keeping in mind the welfare of the environment and its inhabitants.

▶ Provision for service roads/alternate road connectivity, two-laning/ four-laning/ six- laning, riding quality, bypasses and over-bridges, bridges amenities. Based on thesefactors, the investment needs can be calculated.

Example:

Highway Road Authority

The road authority costs include

- Expenditure involved in the construction and maintenance of roads.
- Acquiring the land from the land owners and providing appropriate compensation,expenses incurred in setting up fences and land scaping .
- Construction of noise barriers to reduce the sound entering the residential locality byabsorbing, transmitting or reflecting the sound.

Highway Cost Components

1. **Agency Cost**

a) This includes the expenses incurred by the government or private agency for construction and maintenance of highway roads. Construction cost includes

- Expenses incurred in surveying, planning and designing.
- Purchasing land from the land owners to lay road.
- Construction of road.
- Installation of electrical poles, traffic control equipment.
- Administrative cost involved in supervising the traffic.

b) Maintenance cost includes

- Periodic repair of the damaged roads.
- Relocation and rehabilitation of the displaced people .
- Expenses incurred in maintaining and operating the traffic related equipment.

2. User Cost

This includes the cost incurred in vehicle operation and cost due to the unavoidableaccidents, cost incurred in vehicle operation, fuel, spare parts, wear out of the tires

,lubricants, registration charges ,insurance expenses, road tax and road permit tax etc.

Benefit components of highway road

- A well maintained highway road provides efficient and safe transportation to the roadusers.
- The benefits include saving in travel time.
- Improvement in health, education, agriculture, industry trade and various other fields.