

COST BENEFIT ANALYSIS

(As per MoEF&CC guidelines for conducting Cost Benefit Analysis
Vide its Handbook 28th March, 2019 & its letter. -3/2011-FC (Vol-1) dt.06.01.2022)

Nature of Proposal: Diversion of 33.9919 ha of Forest land under FCA, 1980 for road construction.

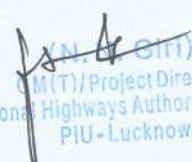
Purpose: The Cost of Benefit Analysis is being undertaken for proposed Diversion of Forest land being affected due to the development of project.

Table: A- Details of Types of project involving forest land for which cost-benefit analysis will be required.

S.No	Nature of proposal	Applicable / Not Applicable	Remarks
1.	All categories of proposals involving forest land upto 20 Hectares in plains and upto 5 Hectares in hills	Not Applicable	-
2.	Proposals for defense installation purposes and oil prospecting (Prospecting only)	Not Applicable	No such area is involved in the project.
3.	Habitation, establishment of industrial units tourist lodges/ complex and other building construction.	Not Applicable	No such activities are involved in the project.
4.	All other proposals involving forest land more than 20 ha in plains and more than 5 ha in hills including roads, transmission lines, minor, medium and major irrigation projects, hydel projects, mining activities, railway lines, location specific installation like micro-wave stations, auto repeater controls, towers etc.	Applicable	The proposed project involves 33.9919 ha. of forest land. Hence, the CBA is applicable. Hill = Nil Plain = 33.9919 ha.

Table: B- Estimation of cost of Forest Diversion

S.No.	Parameters	Remarks
1	Ecosystem service loss due to proposed diversion	The proposed forest area to be diverted is mostly characterized by dry deciduous forest. Considering Open forest of Eco-Class III, an average value of NPV of INR 9,57,780 lakh say INR 9.58Lakh per ha. has been considered as per MoEF&CC letter 5-3/2011-FC (Vol-1) dated 06.01.2022. Therefore, ecosystem services losses due to proposed diversion of 33.9919ha. of forest land = Rs. 325.64 lakhs , considered as total NPV.


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2	Loss of animal's husbandry productivity including loss of fodder	There is no loss in animal husbandry, productivity including loss of fodder due to the diversion of forest land. 10 % of NPV is maximum i.e. Rs. 32.56 lakhs
3	Cost of human resettlement	Nil. There is no displacement of people in the forest area proposed for diversion
4	Loss of public facilities and administrative infrastructure (Roads, Buildings, Schools, Dispensaries, Electric lines, Railways etc.) on which would require forest land if these facilities were diverted due to the project.	Nil. There is no loss in public facilities and administrative infrastructures (road, buildings, schools, dispensaries, electric lines, railways etc.) on proposed diverted forest land.
5	Possession value of forest land diverted	30% of NPV cost i.e. Rs. 97.69 lakhs
6	Cost of Suffering to oustees	Nil. There are no oustees involved in the forest area.
7	Habitat Fragmentation Cost	50% of total NPV i.e. Rs. 162.82 ha.
8	Compensatory afforestation and soil & moisture conservation cost	Compensatory afforestation measure is to compensate this portion of ecosystem services lost as a result of forest diversion. It is basically the cost that will lead to generation of an array of ecosystem services for the restoration of the ecosystem services. CA Cost is Standard Compensatory Afforestation, Restoration factor (SCARF) which is calculated based on the discounted factor at present value of NPV. <ul style="list-style-type: none"> • Type: Tropical Dry Deciduous Forest –Open Forest • Area under Forest Diversion: 33.9919 ha. • Suggested NPV rate for forest: Rs. 9.58lakh per ha. SCARF Adjustment (as per 4% discounted factor) = 5.81% of Rs9.58 lakh= Rs 0.55 lakh per ha. Therefore, the compensatory afforestation cost will be = 33.9919 x 9.02lakh per ha. = Rs. 306.72 lakh

Therefore, cost of Forest Diversion:Rs. 325.64Lakhs(Eco-system loss) + Rs. 32.56Lakhs (Animal husbandry) + Rs97.69Lakhs (Possession value) + Rs. 162.82 Lakhs (Habitation fragmentation) + Rs. 306.72(Compensatory Afforestation) =Rs. 925.44 lakhs


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Table: C - Existing guidelines for estimating benefits of forest-diversion in CBA

Sl.no.	Parameters	Details
1	Increase in productivity attributable to the specific project.	<p>The project will enable smooth accessibility in the region by which people of the region will be directly benefitted.</p> <p>This will also accelerate industrialization and commercialization in the region and the same will directly generate maximum employment opportunities in these areas, which boost up the economy of the region and the state.</p> <p>Due to the proposed project there will be overall development of the project area in terms of fast connectivity, transportation of agriculture produces, easy access to education, health, etc.</p>
2	Benefits to economy	<p>Economic benefit in terms of increase in trade, saving in vehicular operation and maintenance cost, faster and better connectivity, safer journey to commuter and saving of travel time.</p> <p>Improved road connectivity helps in better implementation and management of government schemes. Proposed improved connectivity will accelerate the growth in these areas. It will provide last and economical transport of goods. After completion, the local people and industries situated in the area will be greatly benefitted. The proposed project road will provide safe, fast, economic and environmental friendly transportation to the state which in term will accelerate the rate of growth in this area.</p> <p>In addition to that there are several other benefits that may accrue due to proposed development are saving in fuel, reduction in time to commute, vehicle maintenance, reduction in carbon emission etc. "However, they have not been quantified as it will be a function of various govt. policy variables." Exact quantification of the value is not possible as it is time and policy dependent.</p>
3	No. of population benefited.	<p>The proposed project will traverse two districts viz. Lucknow and Unnao. The total population of these districts are 76.98 lakhs persons as per the Census of India, 2011. These people will get benefited due to the proposed project. In addition to the above, the neighbouring districts commuters will also get benefited.</p>

(N. N. Ghil)

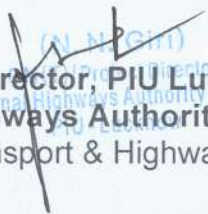
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4.	Economic Benefit due to direct and indirect Employment due to the project	Direct a) Permanent Employment: 700 Person x 3lakh per annum = 2100 Lakh b) Temporary Employment (Skilled/unskilled and Semi-skilled): 3,00,000 Man Days X INR 650 =1950 Lakh Total: 4050Lakhs
5	Economic Benefit due to Compensatory Afforestation (CA)	Annexure VI(b) of the Forest (Conservation) Act 1980 (amended in 2004) specifies that the environmental value of fully stocked (density 1.0) forest would be taken as 126.74 lakhs per ha. to accrue over a period of 50years. CA will be done in 70 ha. of degraded forest land, twice the area diverted under project. Therefore, by considering the maximum density, the ecological gain by this project due to CA would be 126.74 lakh x 70 ha. = Rs. 8871.8 Lakhs

Therefore, the Environmental benefit will be: Rs. 4050 Lakh (Employment generation) + **Rs. 8871.8Lakhs** (Economy benefits due to compensatory afforestation) = **Rs. 12921.8 Lakhs.**

Benefit-Cost (BC) ratio = Total Environmental Benefit/Total Cost
 = $12921.8/925.44 = 13.96$, which is greater than 1. Hence, Project is found viable.

Date:
Place: Lucknow


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