

COST BENEFIT ANALYSIS

Name of the Project: Widening of the existing NH-275 in Mysore-Madikeri Section Design Ch.122+20 to Design Ch.214+535 to four/six lane with Paved shoulders in favour of the National Highway Authority of India (NHAI).

Nature of Proposal: Diversion of 41.576 Ha of forest land under FCA, 1980 for road construction.

Forest proposal No: FP/KA/ROAD/45940/2021

Purpose: The Cost of Benefit Analysis is being undertaken for proposed Diversion of Forest land being affected due to Development of 4/6 laning of project road from existing NH-275 in Mysore-Madikeri Section.

Total length of the road along the PF/RF

Under Reserve Forest in Hunsur Forest Division = 9.414 Km Approx.

Total Forest area proposed for diversion

Under Reserve Forest Hunsur Forest Division = 41.576 Ha.

The Cost benefit analysis is done as per MoEF&CC guidelines for Cost Benefit Analysis vide file no. &-69/2011-FC(Pt.) dated 1st August 2017]

TABLE A : CASES UNDER WHICH A COST-BENEFIT ANALYSIS FOR FOREST DIVERSION ARE REQUIRED

S.No.	Parameters	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 defence 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 41.576 Ha of forest land. Hence, the CBA is applicable. Hill = Nil Plain = 41.576 Ha


Project Director
PIU, NHAI
Bangalore

TABLE B: ESTIMATION OF COST OF FOREST DIVERSION

S.No.	Parameters	Remarks
1	Ecosystem services losses due to the proposed forest diversion	The proposed forest area to be diverted is mostly characterized by mostly Tropical Dry Deciduous Forest. According to MoEF&CC Guidelines for diversion of forest land for non-forestry purposes under Forest (Conservation) Act, 1980- and Guidelines for collection of Net Present Value (NPV) dated 06.01.2022, the area comes under Class III type having dense forest with an average value of Rs.12,28,590 can be considered per hectare. Hence, the total NPV for the diverted project shall be INR ₹ 5,10,79,858 (Approx.)
2	Loss of animal husbandry productivity, including loss of fodder	10% of NPV i.e. INR ₹ 51,07,986
3	Cost of human resettlement	There exist some structures within forest area and cost of the resettlement will be estimated as per Karnataka State Resettlement Policy after joint site visit with Forest dept.
4	Loss of public facilities and Administrative (road, buildings, schools, dispensaries, electric lines, railways etc.) on forest land or which would require forest land if these facilities were diverted due to the project.	There exist some utility shifting structures like electric poles and transformers within forest area. These structures will be shifted during construction period.
5	Possession value of forest land diverted	30% of the NPV i.e., INR ₹ 1,53,23,957.
6	Cost of suffering to outsees	There are no outsees involved in the forest area. However, the final recommendation shall be made after the R&R survey is completed.
7	Habitat Fragmentation cost	50% of the NPV i.e., INR ₹ 2,55,39,929.
8	Compensatory afforestation and soil & moisture conservation cost	The compensatory afforestation will be taken up in about 83 Ha of Degraded Forest land which is about two times of the area proposed to be diverted. The compensatory afforestation cost will be INR 1,13,56,890.

The Total Estimated Cost of Forest Diversion = Ecosystem services losses (+) Loss of animal husbandry productivity (+) Cost of human resettlement (+) Loss of public and administrative facilities (+) Possession value of forest land diverted (+) Cost of suffering to outsees (+) Habitat Fragmentation cost (+) Compensatory afforestation and soil & moisture conservation cost.

Hence, the Total Cost of Forest Diversion = INR 10,84,08,620.


Project Director
PIU, NHAI
Bamaganara

TABLE C: EXISTING GUIDELINES FOR ESTIMATING BENEFITS OF FOREST-DIVERSION IN CBA

S.No.	Parameters	Remarks
1	Increase in productivity attributable to the specific project.	The proposed project doesn't involve any manufacturing or production. Hence, this section is not applicable.
2	Number of population benefitted due to the project	<p>Population of surrounding districts Kodagu (5.55 Lakhs), Mysuru (9.21 Lakhs) and Mandya (1.31 Lakhs) will get benefited due to proposed development.</p> <p>In addition to the above, the man hours required for the commuters to travel the existing route shall be reduced by 9.412 Km</p> <p>Current scenario Distance= 92.24 Kms Time required= 1.84 hours (@50 Kms/hr) Man hr for 2 Yrs= 5952</p> <p>Modify scenario Distance= 90 Kms Time required= 1.13 hours(@80 Kms/hr) Man Hr for 2 Yrs= 2700</p> <p>Hence, a total of 3252 Man hours shall be saved by the construction of the project.</p> <p>Total amount saved with respect to travel INR 175608</p>
3	Economic benefits due to direct and indirect employment of the project	<p>A total of about 627 persons shall be employed by the proposed project. The period of construction for the project is estimated to be 2 years.</p> <p>Considering 300 working days per total year a total to 3009600 man hours is expected to be generated due to the project.</p> <p>Total Income is Rs. 103455000</p>
4	Economic benefits due to Compensatory afforestation	<p>In lieu of total trees to be affected in forest land it is proposed to be undertake at least twice of the affected trees as compensatory afforestation as per Forest (Conservation) Act. So the net productivity will increase apart from compensatory plantation.</p> <p>The compensatory afforestation will be done in 60 Ha of degraded forest land, which is down the line would be having a density of minimum 0.4.</p> <p>The ecological value for a 50 years period for the density of 1.0 is INR 126.74 lacs per hectare. By considering minimum density as 0.4 gains in density, the ecological gain for this project would be INR 42,07,76,800</p>



Project Director
 PIU, NHAI
 Bangalore

The Total Estimated Benefits of Forest Diversion = Number of populations benefitted due to the project (+) Economic benefits due to direct and indirect employment of the project (+) Economic benefits due to Compensatory Afforestation.

Hence, the Total **Environmental Benefit** of Forest Diversion comes out to be INR 175608 + INR 103455000 + INR 42,07,76,800 = INR 52,44,07,408.

Therefore, Cost Benefit Ratio = Total Environmental Benefits/Total cost of the Forest
= 52,44,07,408/10,84,08,620. = **4.83>1**

Hence, Project is found viable.



Project Director
PIU, NHAI
Ramanagara

(B.T Sridhara)
General Manager
(Technical) cum Project
Director
PIU - Ramanagara