

**COST BENEFIT Analysis for Four laning of Bellary to Hiriur section of NH-150A**

**Name of the Project:** Diversion of Forest land for NH150A section of Bellary - Hiriur, involving forest land from Existing Km 283.500 to 413.500 in Chitradurga District of Karnataka State.

**Nature of Proposal:** Diversion of 32.28 Ha. of forest land under FCA, 1980 for road widening.

**Purpose:** The Cost of Benefit Analysis is being undertaken for proposed Diversion of Forest land being affected due to widening of Bellary to Hiriur section of NH-150A

**Total Forest area proposed for diversion**

Under Chitradurga forest division = 32.28 Ha.

**a) Parameter for Evaluation of Loss of Forests (As per Form VI-C)**

Sl. No.	Parameters	Roads. Tr. Lines & Railway Lines
1	Loss of value of timber, fuel wood and minor forest produce on an annual basis including loss of man hours per annum of people who derived livelihood and wages from the harvest of these commodities	Trees to be felled in Chitradurga forest Division - 796 nos.  Total trees to be felled- 796 nos.  Detailed value of trees shall be accounted by respective DCF office during Form A-Part II stage. However, for estimation of loss at this stage of project, INR 3500/tree has been considered as valuation of affected trees. Therefore total values of trees @ average INR 3500 per tree = INR 796 x 3500 = INR 27.86 Lakhs  No livelihood of people will be affected due to proposed diversion of forest land
2	Loss of animal husbandry productivity, including loss of fodder	Nil
3	Cost of human resettlement	No resettlement in the forest land that are diverted for the project
4	Loss of public facilities and administrative infrastructure (Roads, building, school, dispensaries, electric lines, railways, etc.) on forest land, or which would require forest land if these facilities were diverted due to the project.	No public facilities and administration infrastructures will be diverted on forest land due to project.

Sl. No.	Parameters	Roads, Tr. Lines & Railway Lines
5	Environmental losses (Soil erosion, effect on hydrological cycle, wildlife habitat, micro climate upsetting of ecological balance)	<p>Environment Loss</p> <p>Environmental value of 1 ha. of forest land with density 1.0 is estimated to be 126.74 Lakhs</p> <p><b>Chitradurga Division</b></p> <p>Density of Forest Area = 0.3</p> <p>Per ha loss based on density = INR 38.022 Lakhs</p> <p>Forest Area for Diversion = 32.28 ha</p> <p>Total Loss = INR 1227.35 Lakhs</p>
6	Suffering to oustees	Nil

Therefore, **Net Current Environmental loss** (a) = INR 27.86 Lakhs (total value of trees) + INR Lakhs 1227.35 (Environmental loss) = INR 1255.21 Lakhs = INR 12.55 Crores

b) **Parameters for Evaluation of Benefit, not with standing loss of Forests (As per form VI-b of MoEF&CC Handbook)**

S. No.	Parameters	Roads Tr. Lines & Railway Lines
1	Increase in productivity attributable to the specific project	<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 taken up in about 64.56 ha of Degraded Forest land which is about two times of the area proposed to be diverted. The compensatory afforestation cost will be INR 2.58 Crores @ INR 400000 per ha.</p> <p>The compensatory afforestation will be done in 64.56 ha of degraded forest land, which is down the line would be having a density of minimum 0.7. The ecological value for a 50 years period for the density of 1.0 is INR 126.74 lacs per hectare. By considering minimum 0.7 density the ecological gain for this project would be INR 57.27 Crores down the line</p>

S. No.	Parameters	Roads Tr. Lines & Railway Lines
2	Benefits of economy	Economic benefit in terms increase in trade, saving in vehicular operation and maintenance cost, better connectivity and saving of travel time.
3	No. of population benefited	Population of surrounding districts Chitradurga, Bellary will get benefited due to proposed development.
4	Employment potential	Permanent / Regular Employment (Number of persons): 600
		Temporary Employment (Number of person-days): 200000
5	Cost of acquisition of facility on non-forest land wherever feasible	No additional land is required for the project.

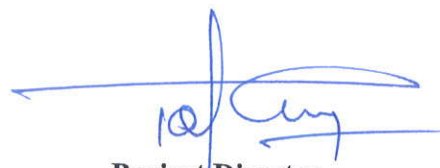
Environmental Benefits (b) = 59.85 Crore

Therefore, Cost benefit Ratio = Total Benefit/Total cost of the project  
= 59.85 / 12.55 = 4.77 >1

**Hence, Project is found viable.**

**Place:** Hospet

**Date:** 25-09-2018



**Project Director  
PIU - Hospet**

**National Highway Authority of India**