

## South Central Railway



Office of the  
Deputy Chief Engineer (Construction-II)  
उपमुख्यइंजीनियरकार्यालय (निर्माण-II)  
Guntur

### COST - BENEFIT ANALYSIS

**Name of the proposal:** Diversion of **32.25 Ha** of forest land under FCA Act 1980 for " Construction of Double line between Diguvametta and Gajulapalli stations in GNT-GTL railway doubling project in Prakasam and Kurnool districts of Andhra Pradesh".

**Purpose:** The cost Benefit Analysis is under taken for proposed diversion of forest land. Division wise area proposed for diversion:

Name of The Forest Division	Name of the Reserve Forest	Area in Ha.
Nandyal	Sirivel	23.04
Uyyalawada	Gundlakamma	9.21
Total proposed diversion of forest in Ha.		<b>32.25</b>

**Table— A: cases of under which a cost — Benefit Analysis for forest Diversion is required.**

Sl. No.	Nature of Proposal	Applicable/Not Applicable	Remarks
1	All categories of proposals involving forest land up to 20 Ha in plains and up to 5 Ha. In hills	Applicable	Diversion in plains > 20 Ha. <b>32.25 Ha.</b>
2	Proposal for defence installation purpose and oil prospecting (Prospecting only)	Not Applicable	
3	Habitation, establishment of industrial units, tourist lodges complex and other building construction	Not Applicable	

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, hydro projects, mining activity, railway lines, locations specific installations, like micro wave stations, auto repeaters	Applicable	More than 20 Ha. Is to be diverted for widening of existing railway line.
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**Table -B: Estimate of cost of Forest Diversion**

Sl. No.	Parameters	Remarks
1	Ecosystem services losses due to proposed forest diversion	NPV =6.26 Lakhs per Ha. = 6.26 x 32.25 = =Rs. 201.885 Lakhs
2	Loss of Animal husbandry production, including loss of fodder	Loss = 5 Tonne/hectare/year @ Rs. 125 per Tonne = 5 x 125 x 32.25 = Rs. 20,156.25 =20,156.25 x 50 (For 50 years) =Rs. 10,07,812.50/- (or) = 10% of environmental costs (NPV) = 201.885 Lakhs x 10/100 = Rs.20.188 Lakhs Taking higher of the values i.e. Rs. 20.188 Lakhs
3	Cost of human settlement	No human settlement is found
4	Loss of public facilities and administrative infrastructure (roads, buildings, schools, dispensaries, electric lines, Railway etc).	No such loss



4	Economic benefits due to centres, TV towers etc. direct and indirect employment due to the specific project	30000 man days benefit due to employment = INR 500 per day =30000x500 =1,50,00,000/- or 150 lakhs
5	Economic benefits due to compensatory afforestation.	CA will be taken up in 64.50 Ha. of land having a minimum density of 0.7. The ecological value for 50 years period for the density of 1.0 is Rs. 126.74 Lakhs per hectare as per forest act 1980. Therefore ecological gain would be Rs. 5722.311 Lakhs

Total benefit **(B) = 5872.311 Lakhs**

Benefit to cost ratio = (B) / (A)

$$= 5872.311/1871.015$$

$$= 3.14 (>1)$$

The benefit to cost ration being greater than 1 (i.e. 3.14) the project is found viable as per the analysis / described criteria.

  
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