

Table -B ESTIMATION OF COST OF FOREST DIVERSION(Khurda Road – Bolangir New BG Rail Link Project from Khurda RoadonTitlagarh-Sambalpur-Jharsuguda branch line (289Km)

Sl. No.	Evaluation of loss of Forest	Value in Lakh	Remarks	Reference
1	Ecosystem Service losses due to proposed forest diversion= 594.618 Ha NPV @ 7.30 Lakh	4340.711	Ecosystem Service losses due to proposed forest diversion shall be equal to the (NPV, as prescribed by MoEF & CC guide line dated 1 st Aug'2017.	NPV rate Rs. 7.30 lakhs per ha.
2	Loss of Animal husbandry productivity including loss of fodder	434.071	To be quantified and express in monetary terms or 10% of NPV applicable whichever is maximum	10% of NPV @ Rs. 7.30Lakhs per ha.
3	Cost of Human settlement (As per approved R & R Plan)	0.00	To be quantified and express in monetary terms as per approved R & R Plan	There is no habitation in the forest land and hence no human settlement
4	Loss of public facilities and administrative infrastructure (Road, Building, School, Dispensaries, electric lines. Railways etc.) on forest land, or which would required forest land if these facilities were diverted due to the project diverted. (As per actual)	0.00	To be quantified and express in monitary terms on actual cost basis at the time of diversion	No loss of Public facilities and administrative infrastructure asit is a reserved forest land.
5	Possession value of forest land diverted	1302.213	30% of environmental cost (NPV) due to loss of forest or circle rate of adjoining area in the district should be added as a cost component as possession value of forest land	NPV rate per ha. is 7.30 Lakh per ha, 30% of NPV is Rs. 1302.213lakh. Hence considered NPV rate
6	Cost of suffering to oustees (1.5times of what oustees should have earned in two years had he not been shifted)	0.00	The social cost of the rehabilitationof oustees (in addition to the cost likely to be incurred in providing residence, occupation and social servicesas per R&R Plan) be worked out as 1. 5 Times of what oustees should have earned in two years had.	

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7	Habitat Fragmentation Cost	2170.356	While the relationship between fragmentation and forest goods and services is complex., for the sake of simplicity the cost due to fragmentation has been pegged at 50% of NPV applicable as a thumb rule	50% of NPV as thumb rule.(MoEF & CC Guide line dt 1.08.2017)
8	Compensatory afforestation and soil and moisture conservation cost .594.618x2= 1189.236 Ha. In RDF under Bolangirforest Division. as per approved scheme by DFO.	1190.00	The actual cost of compensatory afforestation and soil and moisture conservation and its maintenance in future at present discounted value.	The actual cost of compensatory afforestation and soil and moisture conservation and its maintenance in future at present discounted value .
	Total loss	9437.351		


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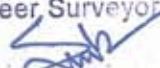
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TABLE-C EXISTING GUIDELINES FOR ESTIMATING BENEFITS OF DIVERSION IN (CBA) AS PER MOEF & CC GUIDELINE DT 01.08.2017 for Khurda Road - Bolangir New BG Rail Link Project from Khurda Road on Titlagarh-Sambalpur-Jharsuguda branch line (289Km).

Sl. No	Evaluation of benefits	Value in Lakh / Year	Value in Rs Lakh/2Year	Remarks	Clarification
1	Increase in productivity attribute to the specific project.	12292.18	24584.36	To be quantified & expressed in monetary terms avoiding double	The annual transport of Goods 79.69 mtpa . Cost of transporting of Goods at distance 1 km by road =2.75/T For (48.73) say 48 km = .134.75 (proposed railway line from Bolangir to sonapur station) cost of transportation of 79.69mtpa by road = 134.75x79690000=Rs.10738227500.00. Cost of transporting of Goods at distance 1km through rail =1.40/Tx49 km= Rs.68.6 (rail freight for class 150) cost of transporting of 79.69 mtpa through rail =289x 79690000. =Rs.23030410000. Cost of benefit in transport = road freight – rail freight = 23030410000-10738227500 =Rs.12292.18 lakh.
2	Benefits of economy due to the Railway Project.	7813.42	15626.84	The financial and social benefit involved as a result of the proposal are enormous since the project makes it expedient to ameliorate the living condition of the population living around existing population of both Districts.	The financial and social benefit involved as a result of the proposal are enormous since the project, makes it expedient to ameliorate the living condition of the population living around existing villages of both the Districts. Non availability of the above land will force the project to close down causing colossal loss to the nation. a. Through transportation of Goods by rail royalty etc will be realized. b. Railway line is the cheapest, safest mode, less dust and less pollution for transportation of goods. C. Total employees engaged indirectly 12412200 persons and directly 5300 persons / annum. They earned (5300x471x313) about Rs 7813.42 Lakh per year. d. Contribution in National economy through Railway line
3	No of population benefited due to Railway project	6406100 Nos.	12412200 Nos.	AS per project report	AS per project report

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4	Employment generated due to of direct and indirect employment due to the Railway project	5300 Nos.	12412200 Nos.	As per the detailed project report.	7.30 Lakh x 289 ha (as per the Guide line issued by MoEF, CC vide letter No .F.No5-3/2007_FC Dt.05.02.2009 and F&C Department letter No.10F(L)14/2009(pt)21637/F&E.Dt.22.12.2009=509.321
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TABLI-C EXISTING GUIDELINES FOR ESTIMATING BENEFITS OF FOREST DIVERSION IN (CBA) AS PER MOEF & CC GUIDE LINE DT 01.08.2017 for (Khurda Road – Bolangir New BG Rail Link Project from Khurda Road on Titlagarh-Sambalpur-Jharsuguda branch line (289Km)


5	Economic benefits due Compensatory afforestation	1190.00	2380.00	Benefits from such Compensatory afforestation accruing over next 50 years monetized and discounted to the present value should be included as benefits of compensatory afforestation *For benefits of CA the guidelines of the Ministry for NPV estimation may be consulted	For benefits of CA the guidelines of MoEF & CC may be consider.
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	Total benefit in Rs.Lakh/2year		42591.20		
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COST BENEFIT ANALYSIS RATIO

1	Benefit to economy		42591.20		
2	Loss on forest		9437.351		
3	Cost benefit ratio -		1:4.51		


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