

**TABLE-B : Estimation of cost of forest diversion :**

Sl.	Parameters	Description
1	Ecosystem Service loses due to proposed forest diversion as prescribed by the Central Government(MoEF & CC)	<ul style="list-style-type: none"> <li>Net Present Value of Diverted Forest Land               <ul style="list-style-type: none"> <li>@ Rs. 24 Lacs/Acre x 6.268 Acre = Rs. 1.5 Crore</li> </ul> </li> </ul>
2	Loss of animal husbandry productivity, including loss of fodder	Forest area of Latehar district is required for the road widening. There is no loss of animal husbandry including the loss of fodder. The road side vegetation is not being used as fodder.
3	Cost of human resettlement.	The cost of Human Resettlement for diversion of Forest Land is Nil However the Non Forest LA cost is 19.85 Crore which has been considered in Project Cost in Cost-Benefit Analysis.
4	Loss of public facilities and administrative infrastructure (Roads, buildings School, dispensaries, electric lines, railways etc) on forest land, or which would require forest land if these facilities were diverted due to the project.	Electric Lines & Poles, Water Pipe Lines, Water Tank etc. public facilities which are being affected have been considered in the budget. Also the budgets for affected CPRs have been considered.
5	Possession Value of forest land diverted	<ul style="list-style-type: none"> <li>Estimated as 30% of environmental costs due to loss of forests               <ul style="list-style-type: none"> <li>@ 30% of NPV = <math>0.30 \times 1.5 = 0.45</math> Crore</li> </ul> </li> </ul>
6	Cost of suffering to oustees	The widening and strengthening of the project road is to be undertaken on the adjoining land of the existing road, so there are no sufferings to oustees
7	Habitat Fragmentation Cost	The total area of the forest land required for the widening of the project is approximately 6.628 Acre. However these would not be any ecological disbalance as only road side plantation is being affected. Suitable Environmental Management Plan has been proposed and Mitigation for adverse effects has been considered. Also three times of the number of trees felled will be planted.
8	Compensatory afforestation and soil & moisture conservation cost	<p>The actual cost of compensatory afforestation and soil &amp; moisture conservation and its maintainance in future at present discounted value</p> <ul style="list-style-type: none"> <li>CAMPA (Present Value)               <ul style="list-style-type: none"> <li>@ Rs. 20 Lacs/Acre x 12.536 Acre = Rs. 2.51 Crore</li> </ul> </li> </ul>

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Amenkron

**TABLE-C: Existing guidelines for estimating benefits of forest diversion :**

Sl.	Parameters	Description
1	Increase in productivity attributable to the specific project	The project will give improved connectivity of the local area. Economic Improvement in the Project districts considering 1% enhanced growth rate in the GDP against normal growth rate due to the project. This benefit will be for 5 years at enhanced rate of 0.5% and 10 years for enhanced 0.25% rate (Current GDP of the project area @ 55 Cr/Annum in 2016-17 and expected GDP of Rs.60.5 Cr/Annum 2019-20)
2	Benefits of economy due to the specific project	Carrying the major portion of coal and other goods in freight via railway line instead of carrying them in Trucks via highways will save the transportation cost upto 5 Cr/Annum approximately
3	No. of population benefitted due to specific project	Total No. of population benefitted are 0.5 Lacs (approx) (People of district near project area as well as through traffic)
4	Economic benefits due to of direct and indirect employment due to the project	Approx 50 skilled workers will be appointed / benefitted during the construction period of 3 years. Additional 100 semi skilled workers will be appointed for construction. 20 Technical People will also be involved. Also 10 skilled workers will be appointed / benefitted during the maintenance period of 100 years. Additional 20 semi skilled workers will be appointed for maintenance. 4 Technical People will also be involved.

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### CALCULATION OF COST BENEFIT RATIO

**The construction of new BG line between Biratoli & Tori for rail flyover at Tori and Biratoli to Mahuamilan for avoiding line in connection with Tori-Shivpur BG line**

#### COST

Sl.	Parameters	Quantity	Rate	Amount (Rs. Cr.)
1	Net Present Value of Diverted Forest Land	6.268	2,400,000	1.50
2	Compensatory Afforestation	12.536	2,000,000	2.51
3	Possession value of forest land diverted	30% of NPV		0.45
4	Project Cost (Civil + Agency Charge + S & T Dept + Electrical and Departmental charges)			199.80
<b>TOTAL</b>				<b>204.26</b>

#### BENEFITS

BENEFITS				
Sl.	Parameters	Quantity	Rate	Amount (Rs. Cr)
1	Economic Improvement in the Project district considering 1% enhanced growth rate in the GDP(Local area) against normal growth rate due to the project. This benefit will be for 5 years at enhanced rate of 0.5% and 10 years for enhanced 0.25% rate (Current GDP of the region @ 55 Cr/Annum in 2016-17 and expected GDP of the region of Rs 60.5 Cr/Annum 2019-20)	55 x (0.5%x5 + 0.25%x10)		2.75
2	Benefits on transportstion cost	5 cr x 100 years		500.00
3	Employment Potential - Construction			
	Skilled Labour	50 x 600 x 365 x 3		2.19
	Semi-skilled Labour	100 x 350 x 365 x 3		2.56
	Technical People	20 x 2000 x 365 x 3		2.92
4	Employment Potential - Maintenance			
	Skilled Labour	10 x 600 x 365 x 100		21.90
	Semi-skilled Labour	20 x 350 x 365 x 100		25.55
	Technical People	4 x 2000 x 365 x 100		29.20
TOTAL				587.07

**COST BENEFIT RATIO**      **1: 3**

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Amenetani