



**Cost benefit Analysis Report  
For  
Diversion of Forest land over an Area of  
162.394 hectare in village Mangra, Tubed, Dihi,  
Ambajharan, Dhobiajharan & Nawari  
District Latehar, Jharkhand  
For  
Tubed Coal Mine Project  
In respect of  
Damodar Valley Corporation**

  
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**Table -A: Cases under which a cost-benefit analysis for forest diversion are required**

Sl. No.	Nature of proposal	Applicable / Not applicable	Remarks
1	All categories of proposals involving forest land up to 20 hectares in plain and up to 5 hectare in hills	Not applicable	These proposals may be considered on case to case basis and value judgement
2	Proposal for defence installation purposes and oil prospecting (prospecting only)	Not applicable	In view of national priority accorded to these sectors, the proposals would be critically assessed to help ascertain that the utmost minimum forestland is diverted for non-forest use
3	Habitation, establishment of industrial units, tourist lodges complex and other building construction.	Not applicable	These activities being detrimental to protection and conservation of forest, as a matter of policy, such proposals would be rarely entertained.
4	All other proposals involving forestland more than 20 hectares in plains and more than 5 hectares in hills including roads, transmission lines, minor, medium and major irrigation projects, hydro projects, mining activity, railway lines, location specific installations like microwave stations, auto repeater centre TV tower etc.	Applicable	The proposed project is for diversion of 162.394 Ha. of forest land for coal mining from Tubed Coal Block in the village of Mangra, Tubed, Dihi, Ambajharan, Dhobiajharan & Nawari of District Latehar, Jharkhand


  
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**Table-B: Estimation of cost of Forest diversion**

SL No	Parameters	Remarks
1	Ecosystem services losses due to proposed forest diversion	Economic value of loss of eco-system services due to diversion of forests at proposed villages in Latehar District of Jharkhand shall be Rs. 6.26 Lakh/Ha (NPV rate as per ECO Value of Open Forest Class III as per Guideline of MoEF&CC, GoI dated 05/02/2009 ). As prescribed by Central Government (MoEF&CC). 1. Total Forest area: 162.394 Ha. 2. Environmental loss: 162.394x 6.26 = <b>Rs. 1016.587 lakh</b>
2	Loss of animal husbandry productivity, including loss of fodder	10% of the NPV (as per the cost benefit guideline) = 10% X Rs. 6.26 lakh X 162.394 = <b>Rs. 101.659 Lakh.</b>
3	Cost of human resettlement	<b>Rs. 7786 Lakh</b> as per mine plan
4	Loss of public facilities and administrative infrastructure (roads, building, schools dispensaries electric lines, railways, etc.) on forest land if these facilities were diverted due to the project	Loss of Public facilities and administrative infrastructure on Jangle Jhari land due to mining activity of Tubed Coal Mine = <b>Rs. 175 Lakh</b>
5	Possession value of forest land diverted	The possession value of forest land diverted is taken as 30% of NPV due to loss of forest = 30% X Rs 6.26 lakh X 162.394 = <b>Rs. 304.976 Lakh</b>
6	Cost of suffering to oustees	1.5 x 36000 x 2 x 217 = <b>Rs.234.362 Lakh</b>
7	Habitat Fragmentation Cost	6.26 x 162.394 x 0.5 = <b>Rs. 508.29 Lakh</b>
8	Compensatory afforestation and soil & moisture conservation cost	The cost @Rs.4.00 lakh per Ha. is taken for compensatory afforestation and soil moisture conservation. Hence amount will be = 324.788x 4.0 = <b>Rs. 1299.152 Lakh</b>

**Total cost due to diversion of Forest land**

= (Rs. 1016.587 + Rs. 101.659 +Rs.7786+ Rs.175+ Rs. 304.976 + Rs.234.362+ Rs. 508.29 + Rs.1299 .152) Lakh  
= **Rs. 11426.026 Lakh**

  
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**Table-C: Existing guideline for estimating benefits of Forest Diversion**

SL. No.	Parameters	Remarks
1	Increase in productivity attribute to the specific project	Total quantity of coal produced 1390 Lakh Tonne @ Rs. 1034/Tonne = <b>Rs. 1437260 Lakh</b> for entire period of 30 years
2	Benefits to economy due to the specific project	Royalty, DMF, Clean energy cess etc. amounts to Rs.704/Tonne = 1390 x 704 = <b>Rs. 978560 Lakh</b> for entire period of 30 years
3	No. of population benefited due to the specific project	As per Mine plan benefit to the population : 1. Directly -621 2. Indirectly- 2160 3. Employment generated on non-forest land in afforestation programme. 4. Locality people will have income opportunity in various ancillary work & other activities
4	Economic benefits due to direct and indirect employment due to the specific project	Direct employment- Rs 1909.5 Lakh/year Indirect employment- Rs. 1555.2 Lakh/year Total over 30 years= <b>Rs. 103941 Lakh.</b>
5	Economic benefits due to compensatory afforestation	Compensatory afforestation of 324.788 Ha. of land @ 2500 nos of sapling x survival rate 100 nos of sapling per Ha. =32479 nos of trees. Economic benefit of one tree accruing over next 50 years monetized in terms of providing oxygen, water, soil, moisture conservation etc. + timber & firewood = Rs. 23.50 lakh Future benefits of 32479 nos. of trees @ Rs. 23.50 lakh = <b>Rs. 763256.5 Lakh</b>

**Total benefit due to diversion of forest land for non-forest activity**

= Rs. 1437260 Lakh + Rs. 978560 Lakh +Rs. 103941 Lakh + Rs. 763256.5 Lakh

= **Rs. 3283017.5 Lakh**

  
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# COST BENEFIT ANALYSIS

Based on value of products:

- A) Total Benefit to the Society = Rs. 3283017.5Lakh  
B) Total Cost to the Society = Rs. 11426.026Lakh

$$\begin{aligned}\text{Cost Benefit Ratio} &= \frac{\text{Total Benefit}}{\text{Total Cost}} \\ &= \frac{3283017.5}{11426.026} \\ &= 287.328\end{aligned}$$

  
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