

Revised Cost Benefit Analysis Report for

Diversion of 65.52 ha of Forest land located in villages Surda, Sohada, Benashole, Parthargora and Forest Block of District : Singhbhum, State: Jharkhand for Surda Copper Mine of M/s. Hindustan Copper Limited.

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

No	Nature of proposal	Applicable/Not applicable	Remarks
1	All categories of proposals involving forest land upto 20 hectares in plains and upto 5 hectare in hills	Not applicable	These proposals may be considered on a 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 forest land 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 forest land 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 micro-wave stations, auto repeater centers, TV towers etc.	Applicable	The proposed project is for diversion of 65.52 ha forest land for underground mining of Surda Copper Mine in the villages namely Surda, Sohada, Benashole, Parthargora and Forest Block of District : Singhbhum, State: Jharkhand

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हिन्दुस्तान कॉपर लिमिटेड

(भारत सरकार का एक उपक्रम)

इन्डियन कॉपर कॉमन्वेल्स

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Table -B: Estimation of cost of forest diversion

S.N	Parameters	Remarks	Cost Estimation
1.	Ecosystem services losses due to proposed forest diversion	Economic value of loss of eco-system services due to diversion of forests shall be the net present value (NPV) of the forest land being diverted as prescribed by the Central Government (MoEF&CC). Note: In case of National Parks the NPV shall be ten (10) times the normal NPV and in case of Wildlife Sanctuary the NPV shall be five (5) times the normal NPV or otherwise prescribed by the Ministry or any other Competent Authority	Total Forest area to be diverted : 65.52 ha. This forest is categorized as Eco Class III (Dense forest, as density of the forest is declared as 0.45). As per MoEF&CC guideline dated 06.01.2022 the revised NPV rate of Eco Class III dense forest is Rs. 1228590/ ha. Accordingly, the NPV amount comes to Rs. 8.05 Cr.
2.	Loss of animal husbandry productivity including loss of fodder.	To be quantified and expressed in monetary terms or 10% of NPV applicable whichever is maximum	Rs. 0.805 Cr. (10% of applicable NPV at S.N 1 above) (Mode of mining will be through underground mining)
3.	Cost of human resettlement	To be quantified and expressed in monetary terms as per approved R&R plan.	No R&R issue
4.	Loss of public facilities and administrative infrastructure (Roads, building, schools, dispensaries, electric lines, railway etc.) on forest land if these facilities were diverted due to project	To be quantified and expressed in monetary terms on actual cost basis at the time of diversion	As the proposal is for underground mining purpose, so no loss of such public facilities are involved.
5.	Possession value of forest land diverted	30% of environmental costs(NPV) due to loss of forests or circle rate of adjoining area in the district should be added as a cost component as possession value of forest land whichever is maximum.	Rs 2.414 Cr. (30% of applicable NPV at S.N 1 above)
6.	Cost of suffering to oustees	The social cost of rehabilitation of oustees (in addition to the cost likely to be incurred in providing residence, occupation and social services as per R&R plan) be worked out as 1.5 times of what oustees should have earned in two years had he not been shifted.	Nil

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S.N	Parameters	Remarks	Cost Estimation
7.	Habitat Fragmentation Cost	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	Rs. 4.025Cr. (50% of applicable NPV at S.N 1 above)
8.	Compensatory Afforestation and soil & moisture conservation cost	The actual cost of compensatory afforestation and soil & moisture conservation and its maintenance in future at present discounted value	Nil. As the diversion of proposed forest land of 65.52 ha is required for underground mining and no surface activities involved over the said forest land.
Total Cost for diversion of 65.52 ha of forestland = Rs. 8.05 Cr. + Rs. 0.805 Cr. + Rs. 2.414 Cr. + Rs. 4.025Cr. = Rs 15.294 Cr			



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Table-C: Estimation of Benefits

Sr. No.	Parameters	Remarks	Benefit
1.	Increase in productively attribute to the specific project.	To be quantified & expressed in monetary terms avoiding double counting.	<p>Benefit</p> <p>Total Quantity of incremental mineral produced 0.583 Million tonnes/ year i.e. 4955.50 tonne Metal in Ore (MIO) per year considering 0.85% of Cu in Ore</p> <p>4460 tonne metal in Concentrate (MIC) per year considering 90% recovery in concentrate</p> <p>4237 tonne Refined Copper per year considering 95% recovery in smelting</p> <p>Price of mineral per year is Rs 248.05 Cr. considering average LME Price of Rs. 5,85,460/tonne (Considering Avg price from Jan 2019 to Aug 2023).</p> <p>Total price of mineral for the period of 16 years (As lease is valid up 2040) is Rs 248.05 Cr. X 16 years = Rs 3968.8 Cr.</p> <p>Royalty: Rs. 183.36 Cr. for entire lease period (to be paid to State Govt. @ 4.62% of value of MIO as per Second Schedule of MMDR 1957 amended till 28th March 2021)</p> <p>District Mineral Foundation (DMF) : Rs.55.01 Cr. (to be paid to State Govt. @ 30% of Royalty for the entire lease period)</p> <p>National Mineral Exploration Trust (NMET): Rs. 3.67 Cr. (to be paid to State Govt. @ 2% of Royalty for the entire lease period)</p> <p>Additional amount on extension of mining lease Equivalent to 50 % of the royalty to be paid to State Govt. as per Fifth Schedule of MMDR Act,1957 amended till 28th March 2021): Rs. 91.68 Cr (to be paid to State Govt. for the entire lease period)</p> <p>Total amount to be paid to State Govt on account of Royalty, DMF, NMET and additional amount on Royalty for the entire lease period = Rs 333.71 Cr</p>
2.	Benefits to economy due to the specific project.	The incremental economic benefit in monetary terms due to the activities attributed to the specific project.	

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Sr. No.	Parameters	Remarks	Benefit
3.	No. of population benefited due to specific project.	As per the Detailed project report.	As per Mining Plan direct benefit to the population : 1162 nos.
4.	Economic benefits due to of direct and indirect employment due to the project.	As per the Detailed project report.	Economic benefit on account of wages of direct employment of 1162 nos. = Rs 31,41,34,920/- per year For 16 years of lease period the economic benefit on account of wages of 1162 of direct employment = Rs 502.62 Cr (for the entire lease period)
5.	Economic benefits due to Compensatory afforestation.	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 guideline of the Ministry for NPV estimation may be consulted.	Nil. As the diversion of proposed forest land of 65.52 ha is required for underground mining and no surface activities involved over the said forest land.
Total benefit due to diversion of 65.52 ha of forest land for a period of 16 years remaining lease period = Rs. 3968.80 Cr + Rs. 333.71 Cr + Rs. 502.62 Cr = Rs 4805.13 Cr			



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COST BENEFIT ANALYSIS

(As per Comprehensive guidelines for effective and transparent implementation of the provisions of FC Act, 1980 published by MOEF&CC, dtd. 28th March 2019)

Based on the value of products:

- a) Total Benefit to the Society = Rs 4805.13 Cr
- b) Total Cost to the Society = Rs 15.294 Cr

Benefit and Cost ratio = $\frac{4805.13}{15.294}$
= 314.18

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(भारत सरकार का एक उपक्रम)
इच्छियन कोपर कॉम्प्लेक्स
डाक-मऊपण्डार-832102
झारखण्ड