

COST BENEFIT ANALYSIS REPORT

[As pe MoEFCC Guideline 7-69/2011-FC(Pt.) dtd. 01 August, 2017]

Selected Dhori Open Cast Project(143.05) Dhori Area



Central Coalfields Limited
(A Miniratna Company)
Govt. of India Undertaking

10/4/22
BIRENDRA SINGH
Project Officer
Selected Dhori Open Cast
Dhori Area

Introduction:

Selected Dhori opencast mine is located in the eastern most part of East Bokaro Coalfields Limited. Beside Gomoh- Barkakana Loop Line, the nearest Railway station is Bhandaridah and Phusro having distance of 2 km & 5 km respectively. The another road from Jaina More to Dumri connecting GT road passes in the western part of the project.

Communication:

Name of Project Officer	:	Birendra Singh
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The nature of forest land for which application for renewal of diversion of forest land to be applied at Selected Dhori OCP(143.05 Ha) falls in Class III MDF forest. As such Rate of NPV comes out as Rs 6,26,000 per ha for 143.05 Ha of the proposed forest land for diversion.

Table 1: Calculation rate for NPV in respect of Selected Dhori OCP(143.05Ha)		
Description	Amount in Rs.	Amount in Rs. Lakhs
Total NPV @Rs.626000/Ha	89549300	895.493
10% NPV Value	8954930	89.5493
30% NPV Value	26864790	268.6479
50% NPV Value	44774650	447.7465

2.0 Purpose for Cost benefit analysis:

Cost benefit report is required for making online application in Part-1,G. The report has been prepared on the basis of MoEFCC circular no. 7-69/2011-FC(Pt.) dated. 01 August, 2017. (copy Attached as Annexure A).

Table 2 : Breakup of Land

Area	Name of Project	Area as per Mine Plan	Total Area as per forest application (in Ha)	Forest Land as per Application (in Ha)	Notified Forest as per Application (in Ha)	GMK JJ/Revenue Forest as per Application (in Ha)	Non Forest Land as per Application
Dhori Area	Selected Dhori Opencast project (143.05 Ha)	264.85	143.05	143.05	143.05	0	0

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3.0 Details of Project Affected Family (PAF):

Table 3 : Detail of Household shifting

No. of villages to be rehabilitated	Name of village to be Rehabilitated	No. of Project affected person	No. of PAF to be shifted at R&R site	No. of tribal amongst PAF	No. of Tribal PAF to be shifted within District
0	-	0	0	0	0

4.0 The details of nature of forest land for which application for diversion of forest land applied are as under:

Table 4: Rates of Net Present Value, Compensatory Afforestation, Carbon Storage, Soil Conservation, Moisture Conservation applicable to forest application

Area	Name of Project	Economy Class of Forest	Type of Forest	Rate of NPV in Rs/Ha	rate of CA in Rs/ha	Rate of Soil conservation in Rs/Ha/Yr	Rate of Moisture conservation in Rs/Ha/Yr	Rate of gain in Forest Cover due to CA in Rs/Ha	Rate of increase in Carbon Storage Cap due to CA in Rs/Ha
Dhori area	Selected Dhori OCP (143.05 Ha)	III	ODF	626000	176009	4101	527	177000	174319

Table 5: Amount in Rs. Lakhs as per Table-4 above for the forest application

Area	Name of Project	Amount of NPV (in Lakhs)	10 % NPV Amount (in Lakhs)	30 % NPV Amount (in Lakhs)	50% NPV Amount (in Lakhs)	Loss due to CA (in Lakhs)	Loss due to Soil & Moisture Conservation (in Lakhs)	Benefits due to increase in Forest cover due to CA (in Lakhs)	Benefits of Carbon Storage due to CA (in Lakhs)
Dhori Area	Selected Dhori OCP (143.05 Ha)	895.493	89.5493	268.6479	447.7465	402.8493992	158.888496	405.1176	398.9813272

Table 6: Cost of Land as per Prevailing Circle Rate

Name of Village	Type of Land in Vicinity	Cost of Land as per Circle Rate in Rs. Lakhs
Makoli, Turiyo, Tarmi	Agricultural	2630.615068224



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Table 7: Cost of human resettlement in Rs Lakhs (As per R&R Policy)

Monetary Compensation to PAFs	Compensation to homestead for Alternate housing	Compensation to Homestead as Subsistence Allowance	Compensation to landless Tribal family	Cost of human settlement
0	0	0	0	0

5.0 Taxes levied and collected by Government

These taxes collected are used for the people and is thus directly related to benefits to economy / society.

Table 8: Taxes collected by Government in Rs. Lakhs

CSR - 2% of Retained Profit	Royalty 15 of sales value	District Mining Fund	National Mineral Fund	Taxes levied as Coal Cess	GST collected for Expenditures (Capital/Revenue)	Stowing Cess	Other taxes if any
11980.0104	85339.52	25601.856	1706.7904	123200	189.619972059656		0

Benefits due CSR activities as per Company's Act 2012.

Royalty Reference : (I) Extraordinary gazette , part II – Sec 3(i), MoC Notification New Delhi , the 10th May 2012

(II) Extraordinary gazette , part II – Sec 3(i), MoC Notification New Delhi , the 31st Aug 2016

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CALCULATION AS PER MOEFCC CIRCULAR NO. 7-69/2011-FC(PT.) Ddt. 01 AUGUST, 2017.

I. Estimation of cost of forest diversion

1. Ecosystem services losses due to proposed forest diversion

Economic value of loss of ecosystem services due to diversion of forest = Net present value (NPV) of the forest land being diverted as per prescribed by the Central Government (MoEF&CC).

As the Forest land proposed does not fall in National park & Wild life sanctuary

Ecosystem services losses due to proposed forest diversion for 143.05 ha = $6,26,000 \times 143.05$
= **Rs. 895.493 Lakhs**(Ref Table 5)

2. Loss of animal husbandry productivity, including loss of fodder

No. of PAFs = 0

Assuming no. Of animal husbandry as 4

Factor = 60

Loss of animal husbandry productivity, including loss of fodder = $0 \times 4 \times 365 \times 60$
= **Rs.0 Lakhs**

10% of NPV = **Rs. 89.5493 lakhs** (ref Table 5)

Since 10% NPV is more than calculated value.

Thus as per guideline:

Loss of animal husbandry productivity, including loss of fodder = **89.5493lakhs.**

3. Cost of human resettlement as per R&R Plan =0 Lakhs

(Refer Table-7)

As per MoEFCC guidelines the cost of human settlement is to be quantified and expressed in monetary terms. For expressing the cost of human settlement the R&R policy of Coal India has been taken into consideration. The different components that has been considered are as follows :

(As per R&R Policy)

Monetary Compensation to PAFs - Monetary compensation @ Rs.5.0 Lakh per acre subject to a minimum of Rs.0.50 Lakh. The compensation can be paid in form of annuity also on monthly, quarterly, annually etc upto 60 years of age or life of project, whichever is earlier.

Note : A person receiving employment forgoes all claims to monetary compensation and a person receiving monetary compensation forgoes all claims to employment.

Compensation to homestead for Alternate housing - Compensation for homestead building as per standard valuation method under LA Act. Payment of Rs 3.0 Lakh in lieu of alternate housing site, assistance in designing & shifting, compensation for construction of cattle shed and working shed etc.

Compensation to Homestead as Subsistence Allowance - Subsistence allowance to each affected family @ 25 days Minimum Agricultural Wages per month for one year.

Compensation to landless Tribal family - Affected landless tribal families will be provided one time financial assistance equivalent to 500 days MAWs as a compensation for loss of customary rights.

4. Loss of public facilities and administrative infrastructure(Roads, buildings, schools, dispensaries, electric line, railways, etc.) As per MoEF guidelines the loss of public facilities and administrative infrastructure is to be expressed in monetary term which would require forest land if these facilities were diverted due to the project. The facilities may include roads, buildings, schools, dispensaries, electric line, railways, etc. On forest land.

Loss of public facilities and administrative infrastructure= **Rs. 0.00**

5. Possession value of forest land diverted

Amount as per Circle rate of adjoining area= **Rs 2630.615068224 Lakhs**(Ref Table 4)

30% NPV = **Rs. 268.6479 Lakhs** (Ref Table 5)

Since circle rate of adjoining area is more than NPV paid therefore as per guideline,

Possession value of forest land diverted= **Rs. 2630.615068224 Lakhs**

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6. Cost of suffering of oustees=Rs 0 Lakhs

No. Of Outsees = No. of PAFs = 0

7. Habitat Fragmentation cost:

Cost due to fragmentation has been pegged at 50% of NPV applicable as a thumb rule (Ref Circular MoEF)

50 % of NPV = Rs. 447.7465 lakhs (Ref table 5)

8. Compensatory afforestation and soil & moisture conservation cost

Cost of Compensatory Afforestation and soil & moisture conservation = Rs. 561.7378952 Lakhs

II. Estimating benefits of forest – diversion in CBA

1. Increase in productively attribute due to the project = Profit per tonne x mineable reserve X 10 = Rs.748750.65

2. Benefits to economy due to specific project= Rs 248017.79677206 Lakhs

3. No. of population benefitted due to specific project= 31620

4. Economic benefits due to direct and indirect employment due to project:

Economic benefits due to direct employment due to project in Rs. Lakhs= 747.439

Economic benefits due to indirect employment due to project in Rs. Lakhs= 2519.06

Total Economic benefits due to direct and indirect employment due to project in Rs. Lakhs = 3266.499Lakhs

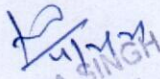
5. Economic benefits due to compensatory afforestation:

Economic benefits due to Compensatory afforestation only in Rs. Lakhs	Economic benefits due to Carbon Storage due to CA in Rs. Lakhs
405.1176	398.9813272

Total Economic benefits due to compensatory afforestation= Rs 804.0989272 Lakhs

Table: Estimation of cost of forest diversion (as per table B of guidelines)

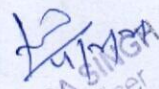
Sl No	Parameter	Result(in Lakhs)
1	Ecosystem services losses due to proposed forest diversion	895.493
2	Loss of animal husbandry productivity, including loss of fodder	89.5493
3	Cost of human resettlement	0
4	Loss of public facilities and administrative infrastructure (Roads, buildings, schools, dispensaries, electric line, railways, etc.) On forest land, which would require forest land if these facilities were diverted due to the project	0
5	Possession value of forest land diverted	2630.615068224
6	Cost of suffering of oustees	0
7	Habitat Fragmentation cost	447.7465
8	Compensatory afforestation and soil & moisture conservation cost	561.7378952
	Total Loss in lakhs	4625.141763


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Table: Existing guidelines for estimating benefits of forest – diversion in CBA (As per Table C of Guidelines)		
Sl No	Parameters	Result(in Lakhs)
1	Increase in productivity attribute to the specific project	748750.65
2	Benefits to economy due to specific project	248017.79677206
3	No of population benefitted due to specific project	31620
4	Economic benefits due to direct and indirect employment due to project	3266.499
5	Economic benefits due to compensatory afforestation	804.0989272
Total(2+4+5)		252088.3947

Cost to benefit ratio = $4625.141763/252088.9947 = 1:54.503928$


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