

Abstract of Cost Benefit Analysis for the Project over a 20 year period for Approach Road, Downhill Pipe Conveyor, Feed Point Area & Transfer Point Area Transmission Line Cable and Water Pipeline for Rama Iron Ore Mine ML No. over an extent of 15.981 Ha.

SL. No.	Losses in Crores		Benefits in Crores	
1	Ecosystem Services losses due to proposed forest diversion	1.620345552	Benefit to the Project Proponent	3839.832294
2	Loss of animal husbandry productivity, including loss of fodder	0.162034555	Benefit to Economy	4453.43108
3	Possession value of forest land diverted	0.49	Population benefited due to the specific project	76.79664587
4	Habitat Fragmentation Cost	0.81	Benefit to the employees	147.6
	Total Losses	3.08	Total Benefits	8517.66
Cost Benefit Ratio		2766.680818		
		1:2766		

COST BENEFIT ANALYSIS				
1	Toposheet No	:	57 A/8	
2	Location	:	Ramanamalai Block Reserved Forest, Sandur North Range, Ramgad Village, Sandur Taluk Bellary Division Bellary District	
3	Extent	:	15.981	Ha
4	Unbroken Area	:	15.981	Ha
5	Density of Forest growth	=	0.2	Density of forest/ha
6	A. Evaluation of Losses			
7	I. Ecosystem Services losses due to proposed forest diversion : (Soil erosion, effect on hydrological cycle, wildlife habitat, microclimate upsetting of ecological balance)			
8	Ecosystem Services losses due to proposed forest diversion	=	16203455.52	Rs.
9		=	1.620345552	Cr.
10	II. Loss of animal husbandry productivity, including loss of fodder			
11	Loss of animal husbandry productivity, including loss of fodder	=	0.162034555	Cr.
12	III. Possession value of forest land diverted			
13	Possession value of forest land diverted	=	0.486103666	Cr.
14	IV. Habitat Fragmentation Cost			
15	Habitat Fragmentation Cost	=	0.810172776	Cr.
16	Total losses due to forest diversion	=	3.078656549	Cr.
17	B. Benefits Evaluation			
18	I. Benefit to the Project Proponent			
19	Estimated Iron Ore reserves in forest area	=	25675738	Tonnes
20	The cost at which project proponent used to acquire iron ore in the past	=	4000	Rs./Tonne
21	Value of the mineral/tonne @ JSW Steel Plant form this project	=	770	Rs./Tonne
22	Benefit to the project proponent by startig the production in this project	=	82932633740	Rs./Tonne
23		=	8293.263374	Cr.
24	Deductions to be made to pay various taxes, royalties to DMG, NMET, DMF, FDF after Iron Ore Production	=	4453.43108	Cr.
25	Total Benefit to the project proponent	=	3839.832294	Cr.
26	II. Benefit to the economy			
27	Sale price of Iron Ore as per IBM in Karnataka	=	1450	Rs.
28	Total premium to GoK	=	90.82%	%
29	DMG Royalty	=	15.00%	%
30	DMF	=	10.00%	%
31		=	1.500%	%
32	NMET	=	2%	%
33		=	0.300%	%
34	FDF	=	12.000%	%
35	Total % Benefit to economy	=	119.62%	%
36	Total Benefit to the Economy	=	44534310804	Rs.
37		=	4453.43108	Cr.
38	III. Population benefited due to the specific project			
39	Population benefited due to the specific project	=	76.79664587	Cr.
40	IV. Total benefit to Employees			
41	Total Benefit due to the Project	=	8517.66002	Cr.
42	C. Benefit to Cost Ratio			
43	Cost Benefit Ratio	:	2766	Ratio

**Cost Benefit Analysis for the Project over a 20 year period for
Approach Road, Downhill Pipe Conveyor, Feed Point Area & Transfer
Point Area Transmission Line Cable and Water Pipeline for Rama Iron
Ore Mine ML No. over an extent of 15.981 Ha.**

1. Applicability of Cost Benefit Analysis

SNo.	Nature of Proposal	Applicable/ not applicable	Remarks
1.	All categories of proposals involving forest land up to 20 hectares in plains and up to 5 hectares in hills.	Not applicable	These proposals are to be considered on case by 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 above 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 ha. in hills including roads, transmission lines, minor, medium and major irrigation projects, hydel projects mining activity, railway lines, location specific installations like micro-wave stations, auto repeater centres, T.V. towers etc.	Applicable	These are cases where a cost-benefit analysis is necessary to determine when diverting the forest land to non-forest use is in the overall public interests.

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2. Evaluation of Loss of Forest

S. No.	Parameters	Mining Project
1.	Ecosystem services losses due to proposed forest diversion	<p>The details of environmental losses are identified as per the given thumb rule for the forest area required for the project are as follows:</p> <p>1.) Density of the forest: 0.2 2.) Avg. density of the forest land to be diverted: 0.2 3.) Thumb rule for the environment losses per Ha. for density 1.0 over a period of 50 Years (In Lacs): 126.74 Lacs 4.) Environmental loss per Ha. of forest land to be diverted: 0.2×126.74 Lacs: 25.348 Lacs. 5.) Total forest area required to be diverted: 15.981 Ha. 6.) Total Environmental loss due to forest land diversion: 25.348×15.981 Lacs 7.) Total Environmental loss due to forest land diversion: 405.09 Lacs 8.) Total Environmental loss due to forest land diversion per year: $405.086 / 50$ Lacs per year = 8.10 Lacs per year 9.) Total Environmental loss due to forest land diversion for 20 years: 8.10×20 = 162.034 Lacs = 1.620 Crores</p>
2.	Loss of animal husbandry productivity, including loss of fodder	10 % of the Net Present Value (environmental services losses) = 0.10×1.069 Crores = 0.162 Crores
3.	Cost of human resettlement	There is no loss involved on account of human resettlement.
4.	Loss of public facilities and administrative infrastructure (Roads, buildings, schools, dispensaries, electric lines, railway etc) on forest land, or which would require forest land if these facilities were diverted due to the project.	No administrative infrastructure such as roads, buildings, schools, dispensaries, electric line, railway, etc are affected due to diversion of forest land to this project. There will be no loss involved on this account.
5.	Possession Value of forest land diverted	30 % of the Net Present Value (environmental services losses) = 0.30×1.620 Crores = 0.4861 Crores
6.	Cost of suffering to oustees	There will not be any losses on this account as diversion of the forest land to this project will not affect any house or structure.
7.	Habitat Fragmentation Cost	50 % of the Net Present Value (environmental services losses) = 0.50×1.620 Crores = 0.8101 Crores
Total Loss to environment		3.0786

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3. Evaluation of the Benefits

SNo.	Parameters	Mining Project
1.	Increase in productivity attributable to the specific project.	<p>1. Total Mineable reserves = 25675738 Tonnes</p> <p>2. Cost of the iron ore per tonne which the project proponent used to acquire in the past = Rs. 4000 per tonne (at JSW Steel Plant)</p> <p>3. Estimated Cost of Iron ore if produced by the project proponent = Rs. 250+520 = 770 per tonne (at JSW Steel Plant)</p> <p>4. Profit to the project proponent after starting this project for 20 years = $(4000-770)*25675738 = 8293.26$ Cr.</p> <p>5. Payments to be made against various royalties, taxes to NMET, FDF, DMF and DMG Royalty = 119.62 % on total mineable reserves as per the IBM Sale Price = 4453.43 Cr.</p> <p>6. Net benefit to the project proponent for 20 years = 3839.83 Cr.</p>
2.	Benefits to economy due to the specific project	<p>A. Total mineable iron ore reserve = 25675738 Tonnes</p> <p>B. Average Sale price of iron ore as per IBM(Karnataka) = Rs. 1200 per tonne</p> <p>C. i. Premium to GoK = 90.82 % .</p> <p>ii. Other Levies</p> <p>DMG Royalty = 15 % of IBM Sale price</p> <p>DMF = 10 % of Royalty(Auctioned Mines)</p> <p>NMET = 02 % of Royalty</p> <p>FDF = 12% of IBM Sale price</p> <p>Grand Total = 119.62% of IBM Sale Price</p> <p>D. Total benefit to econmy of GoK = 4453.43 Cr.</p>
3.	No. of population benefited deu to specfic project	Keeping straight 2% of the net profit in CSR Activities = $0.02*3839.83 = 76.79$ Crores
4.	Economic benefits due to the direct and indirect employment due to the project	<p>Total benefit to the employees per annum = 738 Lacs per annum</p> <p>Total Benefit to the employees for 20 years = 147.60 Cr.</p>
	Total Benefit	8517.66 Cr.
		Total Loss of the forest: 3.0786 Cr
		Total benefits: 8517.66 Cr.
		Cost Benefit Ratio: 1 : 2766