

**Cost Benefit Analysis for the Project over a 50 year period for Jaisingpur Iron Ore Mine of  
M/s MSPL Limited (M L No:0015) over an extent of 61.43 Ha.**

1	Toposheet No	:	57A/8		
2	Location	:	Forest, Sandur Taluk Ballari Division Bellari District		
3	Extent	:	61.43	Ha	ML Area -56 Ha.Approch Road-5.43 Ha
4	Unbroken Area	:	17.17	Ha	Unbroken up area after Joint Inspection Survey
5	Density of Forest growth	=	0.4		Density of forest/ha
6	<b>A. Evaluation of Losses</b>				
7	<b>I. Ecosystem Services losses due to proposed forest diversion : (Soil erosion, effect on hydrological cycle, wildlife habitat, microclimate upsetting of ecological balance)</b>				
8	Ecosystem Services losses due to proposed forest diver	=	311425528	Rs.	(Env losses/ha for density 1 X Forest density/Ha X FC proposed area)-Env loss/Ha -12674000
9		=	31.14	Cr.	
10	<b>II. Loss of animal husbandry productivity, including loss of fodder</b>				
11	Loss of animal husbandry productivity, including loss	=	3.1	Cr.	10 % of the NPV of the forest as per the new guidelines
12	<b>III. Possession value of forest land diverted</b>				
13	Possession value of forest land diverted	=	9.34	Cr.	30 % of environmental costs (NPV) due to loss of forest or circle as per the new guidelines
14	<b>IV. Habitat Fragmentation Cost</b>				
15	Habitat Fragmentation Cost	=	15.6	Cr.	50 % of the environmental cost (NPV) as a thumb rule as per the new guidelines
16	Total losses due to forest diversion		59.2	Cr.	
17	<b>B. Benefits Evaluation</b>				
18	<b>I. Benefit to the Project Proponent</b>				
19	Estimated Iron Ore reserves in forest area	=	3569000	Tonnes	Mineable Reserves - tonnes
20	The cost at which project proponent used to sale iron ore in the past	=	1267	Rs/Tonne	Value of Mineral at Pit head
21	Value of the mineral/tonne	=	1028.51	Rs./Tonne	Mining Cost(Mining cost,OHS,Environment Managemnt ,inclusive tax)
22	Benefit to the project proponent by startig the production in this project	=	851174379	Rs/Tonne	Benefit*total mineable reserves
23		=	85.117	Cr.	Total revenue generated if this project is approved by Gol & GoK,
25	Total Benefit to the project proponent	=	85.12	Cr.	(Benefits after starting the project - Deductions/Payments to be made to pay various taxes, royalties to the Govt. of Karnataka
26	<b>II. Benefit to the economy</b>				
27	Sale price of Iron Ore as per IBM in Karnataka	=	941	Rs.	As per average % grade = 55% average of fines and lumps
28	Total premium to GoK	=	72.10%	%	To be paid on Dispatch IBM Sale Price
29	DMG Royalty (Buyers will pay)	=	15.00%	%	% of IBM Sale Price. Royalty is paying by Buyer
30	DMF	=	10.00%	%	% of DMG Royalty
31		=	1.500%	%	% of IBM Sale Price
32	NMET	=	2%	%	% of Royalty
33		=	0.300%	%	% of IBM Sale Price
34	SPV	=	10.000%	%	% of IBM Sale Price
35	Total % Benefit to economy	=	83.90%	%	% of IBM Sale Price
36	Total Benefit to the Economy	=	2817721931	Rs.	All kind of levies including charges by Forest Dept., DMG etc.
37		=	281.77	Cr.	
38	<b>III. Population benefited due to the specific project</b>				
39	Population benefited due to the specific project	=	1.7	Cr.	Keeping 2% of the net profit as the benefits to the population (CSR activities)
40	<b>IV. Total benefit to Employees</b>	=	29.6	Cr.	( no of employees X CTC per employee X 50 years)
41	<b>Total Benefit due to the Project</b>	=	398.2	Cr.	
42	<b>C. Benefit to Cost Ratio</b>	=	6.73		
43	<b>Cost Benefit Ratio</b>	1 : 7		Ratio	

**For MSPL LIMITED**

  
**K. Madhusudhana**  
 Vice President Mines and CC

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**1. Applicability of Cost Benefit Analysis**

<b>SNo</b>	<b>Nature of Proposal</b>	<b>Applicable/not applicable</b>	<b>Remarks</b>
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 service 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> <ol style="list-style-type: none"> <li>1.) Density of the forest: 0.4</li> <li>2.) Avg. density of the forest land to be diverted: 0.4</li> <li>3.) Thumb rule for the environment losses per Ha. for density 1.0 over a period of 50 Years (In Lacs): 126.74 Lacs</li> <li>4.) Environmental loss per Ha. of forest land to be diverted: <math>0.4 \times 126.74</math> Lacs: 50.696 Lacs.</li> <li>5.) Total forest area required to be diverted: 61.43 Ha.</li> <li>6.) Total Environmental loss due to forest land diversion: <math>50.696 \times 61.43</math></li> <li>7.) Total Environmental loss due to forest land diversion: 3114.25Lacs</li> <li>8.) Total Environmental loss due to forest land diversion per year: <math>3114.255 / 50</math> Lacs per year</li> <li>= 62.28Lacs per year</li> <li>9.) Total Environmental loss due to forest land diversion for 50 years: = <b>31.14Cr</b></li> </ol>
2.	Loss of animal husbandry productivity, including loss of fodder	10 % of the Net Present Value (environmental services losses) = $0.10 \times 31.14$ Crores = <b>3.114 Cr</b>
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) = $0.30 \times 31.14$ Crores = <b>9.34 Cr</b>
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) = $0.50 \times 31.10$ Crores = <b>15.57 Cr</b>
<b>Total Loss to environment</b>		<b>59.2 Cr</b>

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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 = 3569000Tonnes  2. Cost of the iron ore per tonne which the project proponent used to acquire in the past =1267 per tonne  3. Estimated Cost of Iron ore if produced by the project proponent = Rs. = 789+ 239= Rs. 1029 per tonne  4. Profit to the project proponent after starting this project for 50 years = <math>(1267-1029)*3569000 = 85\text{Cr.}</math>  5. Payments to be made against various taxes like NMET, SPV, DMF and DMG Total Royalty = 83.90 % on total mineable reserves as per the IBM Sale Price = 281.4Cr.  6. Net benefit to the project proponent for 50 years = <b>85Cr.</b></p>
2.	Benefits to economy due to the specific project	<p>A. Total mineable iron ore reserve =3569000 Tonnes  B. Average Sales price of iron ore as per IBM(Karnataka) = Rs. 941 per tonne  C. i. Premium to GoK = 72.10% .  ii. Other Levies  DMG Royalty (Buyer will pay) = 15 % of IBM  Sale price  DMF = 10 % of Royalty  NMET = 02 % of Royalty  SPV = 10% of IBM Sale  price  Grand Total = 83.90% of IBM  Sale Price  D. Total benefit to economy of GoK = <b>281.7 Cr.</b></p>
3.	No. of population benefited due to specific project	Keeping straight 2% of the net profit in CSR Activities = $0.02*85 = 1.7\text{Crores}$
4.	Economic benefits due to the direct and indirect employment due to the project	Total benefit to the employees per annum = 59.2Lacs per annum Total Benefit to the employees for 50years = <b>29.61 Cr.</b>
<b>Total Benefit</b>		<b>398</b>
<b>Total Loss of the forest: 59.2Cr</b>		
<b>Total benefits: 398Cr.</b>		
<b>Cost Benefit Ratio: 1 : 7</b>		

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SL. No.	Losses in Crores		Benefits in Crores	
1	Ecosystem Services losses due to proposed forest diversion	31.14	Benefit to the Project Proponent	85.12
2	Loss of animal husbandry productivity, including loss of fodder	3.11	Benefit to Economy	281.77
3	Possession value of forest land diverted	9.34	Population benefited due to the specific project	1.70
4	Habitat Fragmentation Cost	15.57	Benefit to the employees	29.61
	Total Losses	59.17	Total Benefits	398.20
<b>Cost Benefit Ratio</b>	<b>1</b>	<b>1 :</b>		<b>7</b>

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