

Cost Benefit Analysis for the Project over a 50 year period for Swamimalai Iron Mine over an extent of 28.31 Ha.

1	Toposheet No	:	57/A/12		
2	Location	:	Forest, swamimalai Range , Sandur Taluk Ballari Division Bellari District		
3	Extent	:	28.31	Ha	ML Area -26.71 Ha , Road -1.6 HA
4	Unbroken Area	:	12.49	Ha	Unbroken up area after Joint Inspection Survey
5	Density of Forest growth	:	0.4		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	=	143520376	Rs.	(Env losses/ha for density 1 X Forest density/1Ha X FC proposed area)-Env loss/1Ha -12674000Rs
9		=	14.35	Cr.	
10	II. Loss of animal husbandry productivity, including loss of fodder				
11	Loss of animal husbandry productivity, including loss of fodder	=	1.44	Cr.	10 % of the NPV of the forest as per the new guidelines
12	III. Possession value of forest land diverted				
13	Possession value of forest land diverted	=	4.31	Cr.	30 % of environmental costs (NPV) due to loss of forest or circle as per the new guidelines
14	IV. Habitat Fragmentation Cost				
15	Habitat Fragmentation Cost	=	7.176	Cr.	50 % of the environmental cost (NPV) as a thumb rule as per the new guidelines
16	V. Compensatory afforestation and Soil and Moisture Conservation Cost				
17	Compensatory afforestation Soil and Moisture Conservation Cost	=	4.84	Cr	Rs.17.08 Lakhs per Ha As per Letter No:KFD/HOFP/A5-3(GFL)/34/2019-FC dated 19.04.2021
18	Soil and Moisture Conservation Cost	=	0.40	Cr	As per letter No:PCCF/WL/D/CR-38/2020-21 date-27.01.2021
19	Total losses due to forest diversion	=	32.50		
20	B. Benefits Evaluation				
21	I. Benefit to the Project Proponent				
22	Estimated Iron Ore reserves in forest area	=	24900000	Tonnes	Mineable Reserves - tonnes
23	The cost at which project proponent used to acquire iron ore in	=	2600	Rs./Tonne	Average iron ore acquiring cost per tonne
24	Value of the mineral/tonne	=	2456.32	Rs./Tonne	The value of iron ore at the plant due to this project (Average sales price-1334Rs, Levies, Mining cost - 350Rs, transportation cost-400Rs)
25	Benefit to the project proponent by starting the production in this project	=	3577646940	Rs./Tonne	Benefit*(total mineable reserves)
26		=	357.765	Cr.	
27	Total Benefit to the project proponent	=	358	Cr.	(Benefits after starting the project - Deductions/Payments to be made to pay various taxes, royalties to the Govt. of Karnataka
28	II. Benefit to the economy				
29	Sale price of Iron Ore as per IBM in Karnataka	=	1334	Rs.	As per average % grade = 55.33%
30	Total premium to Govt	=	111.11%	%	To be paid on Dispatch (IBM Sale Price
31	Royalty	=	15.00%	%	% of IBM Sale Price
32	DMF	=	10.00%	%	% of Royalty
33		=	1.500%	%	% of IBM Sale Price
34	NMET	=	2%	%	% of Royalty
35		=	0.300%	%	% of IBM Sale Price
36	FDF	=	0.000%	%	% of IBM Sale Price
37	Total % Benefit to economy	=	127.91%	%	% of IBM Sale Price
38	Total Benefit to the Economy	=	42487353060	Rs.	All kind of levies including charges by Forest Dept., DMG etc.
39		=	4248.74	Cr.	
40	III. Population benefited due to the specific project				
41	Population benefited due to the specific project	=	7.16	Cr.	keeping 2% of the net profit as the benefits to the population (CSR activities)
42	IV. Total benefit to Employees				
42		=	63.45	Cr.	(no of employees X CTC per employee X 50 years)
43	V. Economic benefits Compensatory afforestation and Soil				
43		=	2.27	Cr	Guidelines forest diversion of Forest Land for non forestry purpose Under Forest (Conservation)Act 1980 Guidelines for Collection of NPV. NPV changes taken as @8.031a/1ha
44	Total Benefit due to the Project	=	4679	Cr.	
45	C. Benefit to Cost Ratio				
45		=	143.96		
46	Cost Benefit Ratio	:	143.00	Ratio	

For MSPL LIMITED


K. Madhusudhana
 Vice President

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over an extent of 28.31 Ha.**

SL. No.	Losses in Crores		Benefits in Crores	
1	Ecosystem Services losses due to proposed forest diversion	14.35	Benefit to the Project Proponent	357.76
2	Loss of animal husbandry productivity, including loss of fodder	1.44	Benefit to Economy	4248.74
3	Possession value of forest land diverted	4.31	Population benefited due to the specific project	7.16
4	Habitat Fragmentation Cost	7.18	Benefit to the employees	63.45
5	Compensatory afforestation and Soil and Moisture Conservation Cost	5.24	Economic Benefits	2.27
	Total Losses	32.50	Total Benefits	4679.38
Cost Benefit Ratio		1	:	143.00

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Authorized Signature

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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 service losses due to proposed forest diversion	The details of environmental losses are identified as per the given thumb rule for the forest area required for the project are as follows: 1.) Density of the forest: 0.4 2.) Avg. density of the forest land to be diverted: 0.4 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: 0.4×126.74 Lacs: 50.696 Lacs. 5.) Total forest area required to be diverted: 28.31 Ha. 6.) Total Environmental loss due to forest land diversion: 50.696×28.31 Lacs 7.) Total Environmental loss due to forest land diversion: 1435.2038 Lacs 8.) Total Environmental loss due to forest land diversion per year: $1435.2038 / 50$ Lacs per year = 28.70 Lacs per year 9.) Total Environmental loss due to forest land diversion for 50 years: = 14.35 Cr
2.	Loss of animal husbandry productivity, including loss of fodder	10 % of the Net Present Value (environmental services losses) = 0.10×14.35 Crores = 1.435 Cr
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) = 0.30×14.35 Crores = 4.305 Cr
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) = 0.50×14.35 Crores = 7.175 Cr
8.	Compensatory afforestation and Soil and Moisture Conservation Cost	Rs 5.24 Cr (Rs.17.08 Lakhs per Ha As per Letter No:KFD/HOFF/A5-3(GFL)/34/2019-FC dated 19.04.2021)
Total Loss to environment		Rs 32.50 Cr

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3. Evaluation of the Benefits

SNo.	Parameters	Mining Project
1.	Increase in productivity attributable to the specific project.	1. Total Mineable reserves = 24900000Tonnes 2. Cost of the iron ore per tonne which the project proponent used to acquire in the past = Rs. 2600 per tonne 3. Estimated Cost of iron ore if produced by the project proponent = Rs. 1706.32+350+400 = 2456.32 per tonne 4. Profit to the project proponent after starting this project for 50 years = (2600-2456.32)*24900000 = 357.76Cr. 5. Payments to be made against various royalties, taxes to NMET, FDF, DMF and Royalty = 127.91 % on total mineable reserves as per the IBM Sale Price = 4248.74Cr. 6. Net benefit to the project proponent for 50 years = 357.76 Cr.
2.	Benefits to economy due to the specific project	A. Total mineable iron ore reserve =24900000 Tonnes B. Average Sales price of iron ore as per IBM(Karnataka) = Rs. 1334 per tonne C. i. Premium to GoK = 111.11% . ii. Other Levies DMG Royalty = 15 % of IBM Sale price DMF = 10 % of Royalty(Auctioned Mines) NMET = 02 % of Royalty FDF = 0% of IBM Sale price Grand Total = 127.91% of IBM Sale Price D. Total benefit to econmy of GoK = 4248.74 Cr.
3.	No. of population benefited due to specific project	Keeping straight 2% of the net profit in CSR Activities = 0.02*357.76 = 7.16Crores
4.	Economic benefits due to the direct and indirect employment due to the project	Total benefit to the employees per annum = 127Lacs per annum Total Benefit to the employees for 50years = 63.45Cr.
5.	Economic benefits due to the direct and indirect employment due to the project	Rs 2.27 Cr
	Total Benefit	4677.11Cr.
		Total Loss of the forest: Rs.32.50
		Total benefits: 4679.1Cr.
		Cost Benefit Ratio: 1 : 143

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