

(126)

COST BENEFIT ANALYSIS

Project :- Construction of Lohara- Rengadabri-Junnapani - Chowki Road
District & Division - Balod

Total area of forest land in Hectare for diversion - 5.530

Division	Reserve Forest	Protected Forest	Orange Area	Revenue Forest	Total
Balod	4.440	1.090	-	-	5.530

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

S. No.	Nature of proposal	Applicable/not Applicable	Remarks
1	All other proposal involving forest land more than 20 ha. In plains and more than 5ha. In hills including roads, transmission lines, minor, medium and major irrigation projects, mining activity, railway lines, location specific installations like micro-waves stations, auto repeater centre, T.V. Towers, etc.	Applicable	Proposal is for diversion of 5.530 ha. Purpose of Lohara- Rengadabri - junnapani Chowki of Balod Division.

Table-B: Eatimation of Cost of forest diversion

S. No.	Parameters	Remarks
1	Ecosystem services losses due to proposed forest diversion.	Economic Value of loss of eco-system services due to diversion of forest shall be the net present Value, hence:- NPV= 5.530ha. 8.03 Lacs/Ha.= 4440590.00
2	Loss of animal husbandry productivity, including loss of	10% of NPV=444059
3	Cost of animal resettlement	Nill as no resettlement is taking place.
4	Loss of public facilities and administrative infrastructure (Roads. Building, School, Dispensaies, Electric Line, Railway etc). On forest land if these facilities were diverted due to the project.	Nill ,as there are no such infrastructure facilities that exist and to be removed.
5	Possession Value of forest land diverted.	30% of NPV= 1332177.00
6	Cost of suffering to oustees.	Nill , as there are no oustees.
7	Habitat Fragmentation Cost	50% of NPV=2220295.00

(1205)

- 8 Compensatory afforestation and soil & moisture conservation cost.

Compensatory afforestation-

$$5.530 * 7,26,270/\text{Ha} = 4016273.00$$

Soil & moisture conservation-

Amount required to do complete soil moisture conservation works in all the compartments lying in all the Micro Watersheds, through which the National Highway passes=

S.no.	Comp.No.	Area (ha.)
1	RF - 173	185.300
2	RF- 194	497.340
3	RF-193	177.990
4	RF-191	579.470
5	PF -307	28.840
6	PF-312	106.280
7	PF-313	146.900
Total		1722.120

Hence Amount required for soil moisture conservation works= $5.530 * 8122.29$
ha.=44916264

Divisional Forest Office
Balod Division Balod

Table -C
Cost Benefit Analysis (CBA)

Name of the Project- Lohara-Rengadabri-Junapani-Chowki road

Total proposed area- 5.53 ha


Division-Balod (C.G.)

TABLE C: Existing Guidelines for estimating benefits of forest- diversion in CBA

S.NO	Parameter	Given Guidelines	Evaluation																																																																																																																													
1	Increase in productively attribute to the specific project	To be quantified & expressed in monetary terms avoiding double counting	The proposal project for which diversion of forest land is sought is for widening of existing road. The project road will improve accessibility to the region .This will help in both economic & social development in the region. The project will enable smooth accessibility in the region by which people of the region will be directly benefited. This will accelerate industrialization /commercialization in region and the same will directly generate maximum employment opportunities in these areas and boosting up the economy of the region and state. Again directly the project will have the potential for employment generation for local people 12,000 man days during the construction period. The proposed project does not involve any manufacturing or production. Hence, This section is not applicable. Monetary benefits due to increase in productivity is NIL.																																																																																																																													
2	Benefit to economy due to specific project	The incremental economic benefit in monetary terms due to the activities attributes to the specific project.	<p>Economic benefit in terms of increase in trade, saving in vehicular operation and maintenance cost better connectivity, safer journey to commuter and saving of travel time. Improved road connectivity helps in better implementation and management of government schemes .it will provide last and economical transport of goods, After completion of project, the local people and industries situated in the area will be greatly benefited. The widening of project road will provide safe and fast, economical and environment friendly transportation to the state, which in term will accelerate the rate of growth in this area. Table: Average Daily Traffic.</p> <p style="text-align: center;">AVERAGE DAILY TRAFFIC SURVEY OF LOHARA REGADABRI JANAPANI CHOUKI ROAD (Date: 10.10.2015 to 16.10.2015)</p> <p>Section : Lohara Regadabri Janapani Chouki Road Direction : Bothways</p> <p style="text-align: right;">Location: Average of all 2 locations</p> <table><tr><th rowspan="4">Location</th><th colspan="10">Motorised Traffic</th><th colspan="4">Non-Motorised Traffic</th><th colspan="2" rowspan="2">Grand Total</th></tr><tr><th colspan="5">Passenger Vehicles</th><th colspan="3">Goods Vehicles</th><th>Agricultural</th><th>Passenger</th><th colspan="2">Goods Vehicles</th></tr><tr><th rowspan="2">Two Wheeler</th><th rowspan="2">Three Wheeler</th><th rowspan="2">Car/Jeep</th><th rowspan="2">Minibus</th><th rowspan="2">Bus</th><th rowspan="2">Tempo / LCV</th><th colspan="3">Ord.Trucks</th><th rowspan="2">Tractor with Trailer</th><th rowspan="2">Tractor</th><th rowspan="2">Cycle</th><th rowspan="2">Cycle Rickshaw</th><th colspan="2">Animal Drawn</th></tr><tr><th>2 Axle</th><th>3 Axle</th><th>M Axle</th><th>Animal Drawn</th><th>Horse Drawn</th></tr><tr><td>FCU Factor</td><td>0.5</td><td>1.0</td><td>1.0</td><td>1.5</td><td>3.0</td><td>1.5</td><td>3.0</td><td>3.0</td><td>4.5</td><td>4.5</td><td>1.5</td><td>3.5</td><td>2.0</td><td>8.0</td><td>4.0</td><td>3.0</td><td></td><td></td></tr><tr><td>KM 2+700</td><td>2470</td><td>0</td><td>182</td><td>0</td><td>34</td><td>66</td><td>26</td><td>5</td><td>0</td><td>12</td><td>2</td><td>1333</td><td>0</td><td>0</td><td>0</td><td>0</td><td>4160</td><td>2454</td></tr><tr><td>KM 41+200</td><td>2185</td><td>0</td><td>185</td><td>0</td><td>39</td><td>68</td><td>27</td><td>6</td><td>1</td><td>12</td><td>4</td><td>1459</td><td>0</td><td>0</td><td>0</td><td>0</td><td>3983</td><td>2387</td></tr><tr><td>AVG OF ALL LOCATIONS</td><td>2330</td><td>0</td><td>183</td><td>0</td><td>37</td><td>67</td><td>27</td><td>6</td><td>1</td><td>12</td><td>3</td><td>1406</td><td>0</td><td>0</td><td>0</td><td>0</td><td>4072</td><td>2421</td></tr></table>	Location	Motorised Traffic										Non-Motorised Traffic				Grand Total		Passenger Vehicles					Goods Vehicles			Agricultural	Passenger	Goods Vehicles		Two Wheeler	Three Wheeler	Car/Jeep	Minibus	Bus	Tempo / LCV	Ord.Trucks			Tractor with Trailer	Tractor	Cycle	Cycle Rickshaw	Animal Drawn		2 Axle	3 Axle	M Axle	Animal Drawn	Horse Drawn	FCU Factor	0.5	1.0	1.0	1.5	3.0	1.5	3.0	3.0	4.5	4.5	1.5	3.5	2.0	8.0	4.0	3.0			KM 2+700	2470	0	182	0	34	66	26	5	0	12	2	1333	0	0	0	0	4160	2454	KM 41+200	2185	0	185	0	39	68	27	6	1	12	4	1459	0	0	0	0	3983	2387	AVG OF ALL LOCATIONS	2330	0	183	0	37	67	27	6	1	12	3	1406	0	0	0	0	4072	2421
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139

3	No. of population benefits due to specific project	As per Detailed Project Report	The project road passes through tehsil Doundi-Lohara district Balod. Total area of Doundi-Lohara is 954 km ² including 947.88 km ² rural area and 5.93 km ² urban area. Doundi-Lohara has a population of 1,97,411 peoples. There are 40,602 houses in the sub-district. There are about 199 villages in Doundi-Lohara block. This project is being made for rural development and Farmers of rural areas will also have an impact on the economic system.
4	Economic benefits due of direct and indirect employment due to the project	As per Detailed Project Report	A total of 12,000 man day's employment will be generated during construction phase for skilled/unskilled labour. Average wages inclusive of all cost of living is 400 per day. Total financial implication will come out to be 12,000x400 = 48 lacs.
5	Economic benefit due to compensatory afforestation	Benefits from such compensatory forestation accruing over next 50 years monetized and discounted to the present value should be included as benefits of compensatory afforestation. For benefit of CA the guideline of the Ministry of NPV estimation may be consulted.	In lieu of total trees to be removed from proposed Row in forest land along the project road it is proposed to undertake at least twice of affected area as Compensatory afforestation and forest conservation act 1980. So the net productivity will increase. The Compensatory Afforestation will be done in 5.53 hectare of revenue land. Which is down the line would be having a density of minimum 0.4. The ecological value for a 50 years period for the ministry density of 10 is Rs. 126.74 Lakhs per hectare. By considering minimum 0.4 density the ecological gain for the project would be 126.74x0.4x6 = 304.176 Rs. Lacs.


(संजय सूर्यवंशी)
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