

PMU-SHG/P/RMB/02/III/132.9

Dated Shillong the 04th March, 2020

Title of the Proposal: "Diversion of 27.606 Ha of Baghmara Reserve Forest Land for up-gradation to 2-lane of State Highway (SH-04) stretch from Panda to Baghmara (from Existing km 119.800 to 139.00) (Design Length = 17.085 km) under SARDP-NE Phase "A" in the State of Meghalaya."

COST-BENEFIT ANALYSIS

PURPOSE - This Cost Benefit Analysis is being undertaken for proposed Diversion of Forest land being affected due to "up-gradation to 2-lane of State Highway (SH-04) stretch from Panda to Baghmara (from Existing km 119.80 to 139.00) (Design Length = 17.085 km) under SARDP-NE Phase "A" in the State of Meghalaya." by NHIDCL.

TABLE – A: ESTIMATION OF COST OF FOREST DIVERSION

S. No.	Parameters	Remarks						
01	Ecosystem services losses due to proposed Forest Diversion	<p>Rs. 287.93 Lakhs</p> <p>1. Proposed Reserved Forest Cover Area in Ha:</p> <table border="1"> <thead> <tr> <th>Eco-value Class</th> <th>Type</th> <th>Total Area</th> </tr> </thead> <tbody> <tr> <td>Class-I</td> <td>Very Dense Forest</td> <td>27.606</td> </tr> </tbody> </table> <p>2. As per Supreme Court's Order dated 28.03.2008 in WP (C) No. 202/1995:</p> <p>(i) Forest type of the proposed diversion area: Eco-Class I</p> <p>(ii) Net present Value:</p> <p>Area: 27.606 Ha @ Rs. 10.43 Lakhs = 287.93 Lakhs</p>	Eco-value Class	Type	Total Area	Class-I	Very Dense Forest	27.606
Eco-value Class	Type	Total Area						
Class-I	Very Dense Forest	27.606						
02	Loss of Animals husbandry productivity including loss of fodder	NIL						
03	Cost of human resettlement	DC, South Garo Hills District has been requested vide letter no. PMU-SHG/P/RMB/02/III/1328, dated 04.03.2020 for providing FRA.						
04	Loss of public facilities and administrative infrastructure (Roads, Buildings, Schools, Dispensaries, Electric Lines, Railways etc.) on which would require forest land if these facilities were diverted due to the project.	No loss of public facilities and administrative interest occurs.						



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05.	Possession value of forest land of Diverted Forest Land	Possession value of forest land will be 30 % of NPV as per circular issued by MOEFCC vide no 7-69/2011-FC (pt) dated 01/08/2017, Hence, it will be 30% of 2.88 Crores =0.86 Crores.
06	Suffering to Oustees	Nil
07	Habitant Pragamentation Cost	Nil
08	Compensatory Afforestation and soil moisture conservation cost	The total area of forest land along the project road required for the 2-lane up-gradation is 27.606 Ha. The loss for density 1.0 is 126.74 Lacs per Ha. As per Forest Conservation Act,1980 for 50 years considering the density of the forest as 1.0, the total cost of environment losses per ha is Rs. 126.74 Lacs for 50 years. 27.606 * 126.74 = 3498.78 Lacs = say 34.99 Crores

Table – B: ESTIMATION OF BENEFITS OF FOREST DIVERSION

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1.	Increase in productivity attributable to the specification project.	Due up-gradation of the existing road to two lane with National Highway standards, there will be overall development of the project area. The development of project road will lead to increase in the GDP of the state as there are still numerous unidentified mining sites within the project corridor, hence the development of the highway will attract more business within the project road. By assuming the net GDP growth to be 7% and 10% population(i.e. 10% of 3000000=300000) would be benefited by the project road, the net revenue generated for a period of 30 years would be 6.3 Cr.(300000*7*30)																																																																																																
2.	Benefits to economy due to specific project	Economic Benefits: The reduced design length will lead to lesser fuel consumption and the better quality of road will decrease the maintenance cost of the vehicles by : Rs. 5262 lakhs. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Sl.No.</th> <th>Type of Vehicle</th> <th>Total</th> <th>Decrease in project length (Km)</th> <th>Mileage</th> <th>Fuel Price</th> <th>Fuel cost reduced for deducted length</th> <th>Maintenance Annual</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Two Wheeler</td> <td>15</td> <td>2.115</td> <td>40</td> <td>80</td> <td>120</td> <td>6000</td> </tr> <tr> <td>2</td> <td>Car/Jeep/Taxi</td> <td>411</td> <td>2.115</td> <td>8</td> <td>80</td> <td>17262</td> <td>15000</td> </tr> <tr> <td>3</td> <td>Mini Bus</td> <td>3</td> <td>2.115</td> <td>5</td> <td>80</td> <td>204</td> <td>25000</td> </tr> <tr> <td>4</td> <td>Bus (full)</td> <td>32</td> <td>2.115</td> <td>5</td> <td>80</td> <td>2176</td> <td>25000</td> </tr> <tr> <td>5</td> <td>Light Commercial Vehicle (LCV)</td> <td>182</td> <td>2.115</td> <td>8</td> <td>80</td> <td>7644</td> <td>20000</td> </tr> <tr> <td>6</td> <td>Two Axle Truck</td> <td>299</td> <td>2.115</td> <td>5</td> <td>80</td> <td>20332</td> <td>25000</td> </tr> <tr> <td colspan="7"></td> <td>116000</td> </tr> <tr> <td colspan="6">Per day saving (in Rs)</td> <td>47738</td> <td></td> </tr> <tr> <td colspan="6">Per year saving (in Rs)</td> <td>17540370</td> <td></td> </tr> <tr> <td colspan="6">Savings for 30 years (in Rs)</td> <td>526211100</td> <td></td> </tr> <tr> <td colspan="6">Savings for 30 years (in Cr.)</td> <td>52.62</td> <td></td> </tr> </tbody> </table>	Sl.No.	Type of Vehicle	Total	Decrease in project length (Km)	Mileage	Fuel Price	Fuel cost reduced for deducted length	Maintenance Annual	1	Two Wheeler	15	2.115	40	80	120	6000	2	Car/Jeep/Taxi	411	2.115	8	80	17262	15000	3	Mini Bus	3	2.115	5	80	204	25000	4	Bus (full)	32	2.115	5	80	2176	25000	5	Light Commercial Vehicle (LCV)	182	2.115	8	80	7644	20000	6	Two Axle Truck	299	2.115	5	80	20332	25000								116000	Per day saving (in Rs)						47738		Per year saving (in Rs)						17540370		Savings for 30 years (in Rs)						526211100		Savings for 30 years (in Cr.)						52.62	
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SN	Parameters	Remarks
3.	No. of population benefited.	<p>Economic benefits due to tourism enhancement, access to schools hospitals farmers produces, new industries development etc. : Rs. 6000 Lakhs</p> <p>The tourism industry of Meghalaya generates approx 100cr revenue per year. The project road has tourists spots like Balapakram National Park, Shizu Cave etc. Hence assuming a total growth of 10% after development of project road, which will generate 10 cr. Added revenue per year.</p> <p>Moreover the development of new project road will maximize the import and export, new facilities for the people like constructions of Hospital, School, Colleges, Hotels etc. would be developed. Hence all these facilities will generate upto approx 25Cr. Revenue per year.</p> <p>Newly constructed highway, with connectivity to urban areas will attract more industrialists to set up industries and startups(MSMEs) within project corridor and give employment to local people for direct and indirect jobs. Hence, assuming 25cr. revenue to be generated by the opening of new industries.</p>
4.	Economic Benefites due to of direct and indirect employment due to project.	Direct Employment of labours- 500 @ Rs. 144000 employed during construction for 3 years and 150 @ 43200 during operation stage for 15 years : Rs. 3942 lakhs
5.	Economic Benefits due to Compensatory Afforestation	The benefits of Compensatory Afforestation estimated as NPV.



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04.03.2020

(BIPIN KUMAR CHAND)
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