

## COST BENEFIT ANALYSIS

**NAME OF PROJECT:** Widening and improvement of Yaingangpokpi- Nagaland road section of NH-202 into two laning with paved shoulder of 48.273km from Hungpung to Longpi Kajui of 94.612km in the state of Manipur on EPC Mode by NHIDCL

**NATURE OF PROPOSAL:** Diversion of Forest Land under FCA, 1980 for road widening

**PURPOSE** - This Cost Benefit Analysis is being undertaken for Proposed Diversion of Forest Land being affected due to **Widening and improvement of Yaingangpokpi- Nagaland road section of NH-202 into two laning with paved shoulder of 48.273km from Hungpung to Longpi Kajui of 94.612km in the state of Manipur on EPC Mode by NHIDCL.**

**TABLE - A: ESTIMATION OF COST OF FOREST DIVERSION**

SL. No.	PARAMETER	DESCRIPTION														
1	Ecosystem services losses due to proposed forest diversion	<p style="text-align: right;"><b>Rs. 577.80913 lakhs</b></p> <p><b>(1. Proposed forest area to be diverted</b> Total = 133.881 ha</p> <p><b>2. Crown density of the proposed area:</b> 0-60%</p> <p><b>3. Forest Cover Area in ha:</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;"><b>A. Class :</b></td> <td style="text-align: right;"><b>Total Area</b></td> </tr> <tr> <td>(i) Very Dense forest :</td> <td style="text-align: right;">0.402 ha</td> </tr> <tr> <td>(ii) Moderately dense forest :</td> <td style="text-align: right;">19.953 ha</td> </tr> <tr> <td>(ii) Degraded Scrub :</td> <td style="text-align: right;">46.89 ha</td> </tr> <tr> <td>(iii) Open forest :</td> <td style="text-align: right;">52.912 ha</td> </tr> <tr> <td>(iv) Scrub :</td> <td style="text-align: right;"><u>13.724 ha</u></td> </tr> <tr> <td></td> <td style="text-align: right;"><b>133.881 ha</b></td> </tr> </table> <p><b>3. As per Supreme Court's Order dated 28.03.2008 in WP(C) No. 202/1995 :</b></p> <p>(i) Forest type of the proposed diversion area : Eco-Class I</p> <p>(ii) Net Present Value :</p> <p style="margin-left: 20px;">(a) Very dense forest =</p> <p style="margin-left: 40px;">(i) Area: 0.402 ha @ Rs.10.43 lakhs = Rs. 4.19286 lakhs</p> <p style="margin-left: 20px;">(b) Moderately dense forest =</p> <p style="margin-left: 40px;">(i) Area: 19.953 ha @ Rs. 9.39 lakhs = Rs. 187.35867 lakhs</p> <p style="margin-left: 20px;">(c) Open forest =</p> <p style="margin-left: 40px;">(i) Area: 52.912ha @ Rs. 7.30 lakhs = Rs. 386.2576 lakhs</p> <p><b>TOTAL NPV (a) + (b) + (c) = Rs. 4.19286 lakhs + Rs.</b></p>	<b>A. Class :</b>	<b>Total Area</b>	(i) Very Dense forest :	0.402 ha	(ii) Moderately dense forest :	19.953 ha	(ii) Degraded Scrub :	46.89 ha	(iii) Open forest :	52.912 ha	(iv) Scrub :	<u>13.724 ha</u>		<b>133.881 ha</b>
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**NHIDCL**  
**Imphal**

		187.35867 lakhs + Rs. 386.2576 lakhs = <b>Rs. 577.80913 lakhs</b> )
2	Loss of animal husbandry productivity, including loss of fodder	10% of NPV = 10% of Rs. 577.80913 lakhs = <b>Rs. 57.780913 lakhs</b>
3	Cost of human resettlement	No Resettlement in the Forest Land that are diverted for the Project
4	Loss of public facilities and administrative infrastructure (Roads, building, schools, dispensaries, electric lines, railways, etc.) on forest land, which would require forest land if these facilities were diverted due to the project	No loss of public facilities and administrative infrastructures will be diverted on Forest land due to Project.
5	Possession value of forest land diverted	30% of environmental cost (NPV) = 30% of Rs. 577.80913 lakhs = <b>Rs. 173.342739 lakhs</b>
6	Cost of suffering to ousters	Nil
7	Habitat Fragmentation Cost	As per thumb rule : 50% of NPV = 50% of 577.80913 lakhs = <b>Rs. 288.904565 lakhs</b>
8	Compensatory afforestation and soil & moisture conservation cost	Compensatory Afforestation cost of <b>267.762 ha</b> land for 133.881 ha proposed forest land diversion : <b>Rs.534.988476 lakhs @ Rs. 225/-</b> wage rate (including <b>Rs.39.628776 lakhs</b> as soil & moisture conservation cost which is 10% of CA item work cost for a maintenance period of 8 years)

**TABLE B: ESTIMATION OF BENEFITS OF FOREST DIVERSION**

SL. No.	PARAMETER	DESCRIPTION
1	Increase in productivity attribute to the specific project	In Lieu of total trees to be affected in forest land in Project, it is proposed to undertake Compensatory Afforestation as per Forest (Conservation) Act The road will improve accessibility to the remote areas in the districts of Ukhrul and Nagaland border. This is also a interstate connecting road. This will help in both economic & social development.
2	Benefit to economy due to the specific project	The main objective of this project is to alleviate the current unsafe condition of the highway and provide better quality and safe road to the users by widening of the highway to 2 lane with paved shoulders and improvement of its curves and gradients which will minimize the chances of accidents.  The project will yield significant economic benefits to the State. Widening and up gradation of the highway will lead to much better connectivity, which will play a significant role in improving the socioeconomic condition of the

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		<p>people of the State in many folds. It will aid in boosting the tourism in the region and also generate direct and indirect employment opportunities for the people in addition to other indirect benefits by way of saving vehicle operating costs, less fuel consumption and saving time and cost of passenger travel etc.</p> <p>The road shall also attract tourists and will add to the economy of the state from tourism perspective.</p> <p>Economics Benefits- savings in travel time and Vehicle operating cost for 30 years (Due to improvement in design speed and reduction in length of road): <b>Rs. 89394.92 lakhs.</b></p>
3	<b>No. of population benefited due to specific project</b>	<p>Entire population along the NH-202Ukhrul District (140778) shall be benefitted from the project.</p> <p>In addition, the project will boost the economic growth of the Region and State as well by boosting through tourism. The road shall also provide better connectivity to the commuters travelling to neighbouring states.</p>
4	<b>Economic benefits due to direct and indirect employment due to the project</b>	<ol style="list-style-type: none"> <li>1. Economics Benefits due to tourism enhancement, access to schools hospitals, farmer produce etc.: <b>Rs. 9231.00 lakhs</b></li> <li>2. Direct Employment of Labours- 500 @ Rs. 1,44,000 employed during construction for 3 years and 100 @ 1,44,000 during operation stage for 15 Years: <b>Rs. 4320.00 lakhs</b></li> </ol>
5	<b>Economic benefits due to Compensatory Afforestation</b>	<p>1,24,390 Man day as per prevailing wage rate for a maintenance period of 8 years of (133.881*2 =267.762 ha CA area) @ present wage rate Rs.225.00 Mday = <b>Rs. 279.87750 lakhs</b></p>

  
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