COST BENEFIT ANALYSIS

NAME OF THE PROJECT :	**Consultancy services for Preparation of Detailed Project Reports for Improvement of SH and MDRs (Group 1) under Axom Mala in the State of Assam Corridor No A03/ Road Name: Chapaguri to Amteka (Bhutan Border)**
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 existing Chapaguri to Amteka (Bhutan Border) Road of proposed length 40.776 Km in the state of Assam under Asom-Mala Program**

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TABLE - A: ESTIMATION OF COST OF FOREST DIVERSION

Sl.	Parameters	Description			
1	Eco-system Services Losses due to Proposed Forest Diversion		**Rs.**	**269.516 Lakhs**	
		1) Propose Area to be diverted		**36.920 Ha**	
		2) Crown density of the proposed area		**0-60 %**	
		3) Forest Cover Area		**Area in Hactare**	
		(i) Very Dense Forest		0.000	
		(ii) Moderately Dense Forest		0.000	
		(iii) Open Forest		10.674	
		(iv) Non-Forest (No Vegetation)		26.246	
		Total Forest Diversion Area =		**36.920**	
		4) As per Supreme Court's Order dated 28.03.2008 in WP(C) No. 202/1995 (i) Forest type of the proposed diversion area : Eco-Class I (ii) Net Present Value :			
		Forest Class	Area (Ha)	Rate (Lakhs/Ha)	Amount (Lakhs)
		(a) Very Dense Forest	0.000	10.43	-
		(b) Moderately Dense Forest	0.000	9.39	-
		(c) Open Forest & Non-Forest	36.920	7.30	269.52
		(d) Scrub	0.000	-	-
				Total =	**269.516**
2	Loss of animal husbandry productivity, including loss of fodder	10% of NPV = 10% of Rs.269.516Lakhs =		**26.952 Lakhs**	
3	Cost of human Resettlement.	**Nil** The cost of Human Resettlement for diversion of Forest Land is Nil.			
4	Loss of public facilities and administrative infrastructure (Roads, buildings School, dispensaries, electric lines, railways etc) on forest land, or which would require forest land if these facilities were diverted due to the project.	Electric lines & Poles, Water pipe lines, Water Tank etc. public facilities which are being affected have been considered in the budget. Also the budgets for affected CRSs have been considered.			
5	Possession Value of Forest Land Diverted	30% of NPV = 30% of Rs.269.516Lakhs =		**80.855 Lakhs**	
6	Suffering to oustees	**Nil** The widening and strengthening of the project road is to be undertaken on the adjoining land of the existing road, so there are no sufferings to oustees.			
7	Habitat Fragmentation Cost	50% of NPV = 50% of Rs.269.516Lakhs =		**134.758 Lakhs**	
8	Compensatory Afforestation and Soil & Moisture Conservation Cost	Compensatory Afforestation cost of 73.84 Ha land for 36.92 Ha proposed Forest Land Diversion = Rs.147.68 Lakhs (including Rs.14.77 Lakhs as soil & moisture conservation cost which is 10% of CA item work cost for a maintenance period of 8 years)		**147.680 Lakhs**	
TOTAL (TABLE - A: COST OF FOREST DIVERSION)				**659.760 Lakhs**	

TABLE - B: ESTIMATION OF BENEFITS OF FOREST DIVERSION

Sl.	Parameters	Description	
1	Increase in Productivity and Economy	'[{374000*(1.05)^3} x (4.82/309) x {(10%x5 + 5%x10 + 2%x15)}' Economic Improvement in the Project District (Bongaigaon) considering enhanced growth in the GDP against normal growth rate due to the project. This benefit will be for 5 years at enhanced rate of 10%, 10 years for enhanced 5% rate & 15 years for enhanced rate of 2% (Current GDP of the state @ 3.74 Lakhs Crore / annum in 2019-20, Population of Assam is 3.09 Cr and Chirang District is 4.82 Lacs).	**8,779.533 Cr**
2	Benefits on vehicle operation & maintenance cost due to improvement of the project Road	Rs.36.26 Cr. per year x 30 years for Saving in VOC	**1,087.800 Cr.**
3	No. of Population benefited due to specific project	Population of Chirang District (4.82 Lacs) shall be benefited from the project. In addition, the project will boost the agricultural and Industrial development of the surrounding area which will eventually boost the economic growth. Also international connectivity to Bhutan may be developed due to improved road connectivity.	
4	Economic benefits due to direct and indirect employment due to the project	1. Employment Potential – Construction	

Type	No.	Rate / Day	Years	Amt (Cr.)
Skilled	200	375	3	6.750
Semi Skilled	70	300	3	1.890
Technical	15	2,000	3	2.700
				11.340

2. Employment Potential – Maintenance

Type	No.	Rate / Day	Years	Amt (Cr.)
Skilled	15	375	30	5.063
Semi Skilled	8	300	30	2.160
Technical	3	2,000	30	5.400
				12.623

Total Employment Potential =	**23.963 Cr.**

5	Benefit from Compensatory Afforestation	35443 Mandays as per prevailing wage rate for a maintenance period of 8 years of @ present wage rate Rs. 300 Mday =	**1.063 Cr.**
TOTAL (TABLE - B: BENEFIT OF FOREST DIVERSION)			**9,892.359 Cr.**