

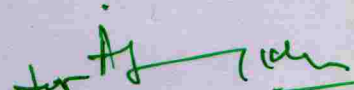
COST BENEFIT RATIO OF NILWAI PROJECT

CALCULATION OF COST BENEFIT RATIO AS PER NEW GUIDELINES			
S.NO		Description	Amount In Lakhs
1	i	Estimated cost of project	21132.00
	ii	Cost -of land re development at Rs 2000/ per hectare (Assumed). For C.C.A. 5260 Hectare.	105.20
	iii	Estimated cost of forest diversion	1025.441
		Total Estimated cost of project	22262.641
		ANNUAL BENRTS:	
2	A	Grass value produce for post -project	
		Grass value produce for post -project (A)	2599.206
	B	Grass value produce for pre -project	
	i	Cultivated command area produce pre-project	767.722
	ii	Loss of Agriculture production in land going out of cultivation project area and distribution system etc	76.772
	iii	Loss of Agriculture production in land going out of cultivation project area under submergence of Nilwai Project Reservoir.	6.909
		Total Grass value pre -project (B)	851.403
		Net annual Agricultural benefits due to project (E) = A-B	1747.803
	C	drinking water & industrial water, animal husbandry, plantation on reservoir periphery	
	i	Drinking water supply (0.384 M Cum @ 100 Lakhs per M cum)	38.400
	ii	Power saving due to Gravity instead of lifting 0.845 TMC water (Rate for 1T.M.C@ 600 Lakhs)	507.00
	iii	Fisheries (Average Reservoir area X 250 Kg/ Ha X Rate per Kg) 864 Ha X 250 Kg/Ha X Rs per Kg 90 = 194.40 Lakhs	194.400
	iv	Economic benefits due to compensatory afforestation	200.234
		Total Value of other Benefits (C)	940.034
		Total Net Annual Benefits(F)= E+C	2687.837
	D	ANNUAL COST:	
	a	Interest capital @ 10 % of Estimated total cost of project	2226.264
	b	Deprecation of the project at 1% of the cost of project assuming the life of project 100 Years	222.626
	c	Annual operation and maintenance at Rs 250 per Hectare for 5260 Hectare grass irrigated area.	13.15
		Total Annual cost(D)	2462.040

$$\text{COST BENEFIT RATIO} = \frac{\text{Annual Benefits (F)}}{\text{Annual Cost (D)}} = \frac{2687.837}{2462.040} = 1.017$$


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STATEMENT SHOWING GROSS VALUE OF PRODUCE UNDER POST PROJECT CONDITIONS

S.NO	Crop	Area in Ha	Yield for Ha in quintals	Gross for Ha in quintals	Rate for quintals	Gross value of produce in Lakhs	Remarks
1	Chillies	1620	20.00	32400	1802	583.848	
2	Ground nut	1620	14.00	32400	4950	1603.800	
3	Paddy	2020	12.60	25452	1617	411.558	
	TOTAL				TOTAL	2599.206	

STATEMENT SHOWING GRASS VALUE OF PRODUCE UNDER PRE PROJECT CONDITIONS

S.NO	Crop	Area in Ha	Yield for Ha in quintals	Gross for Ha in quintals	Rate for quintals	Gross value of produce in Lakhs	Remarks
1	Jawar	1214	5	6070	1365	82.855	
2	Paddy	1214	12.6	15296.4	1617	247.342	
3	Chillies	1214	20	24280	1802	437.525	
	Total				TOTAL	767.722	

a) Loss of agriculture Production in lands going out cultivation in project area for canal distribution system etc.

S.NO	Crop	Area in Ha	Yield for Ha in quintals	Gross for Ha in quintals	Rate for quintals	Gross value of produce in Lakhs	Remarks
1	Jawar	121	5	605	1365	8.258	
2	Paddy	121	12	1452	1617	23.478	
3	Chillies	121	20	2420	1802	43.608	
					TOTAL	75.344	

b) Loss of agriculture Production in lands going out cultivation in project area for Nilwai Project Reservoir.

S.NO	Crop	Area in Ha	Yield for Ha in quintals	Gross for Ha in quintals	Rate for quintals	Gross value of produce in Lakhs	Remarks
1	Jawar	20	5	100	1365	1.365	
2	Paddy	10	12	120	1617	1.940	
3	Chillies	10	20	200	1802	3.604	
					TOTAL	6.909	

ABSTRACT

Table-B- Estimation cost for forest Diversion			
S.No	Parameters	Amount in Lakhs	Remarks
1	Ecosystem services losses due to proposed forest diversion	471.63	Estimated value as per Guidelines
2	Loss of animal husbandry productivity including losses of fodder	11.316	Estimated value as per Guidelines
3	Cost of human resettlement	—	No Resettlement issues in forest land as no tribal's are involved
4	Loss of public facilities and administrative infrastructure(roads,buildings,schools,dispensaries ,el ectric lines, railways etc..) which would require forest land if these facilities were diverted due to the project	—	No Relocating of roads due to submergence
5	Possession value of forest land diverted	33.950	Estimated value as per Guidelines
6	cost of suffering to oustees	—	No Resettlement issues in forest land as no tribal's are involved
7	Habitat Fragmentation cost	56.585	Estimated value as per Guidelines
8	Compensatory a forestation and soil & moisture conservation cost	451.960	Estimated value as per Guidelines
	Total	1025.441	

Table-C- Estimating benefits of forest-diversion in CBA

S.No	Parameters	Amount in Lakhs	Remarks
1	Increase in productivity attribute to specific project		Increased the productivity Ha
2	Benefits to economy due to the specific project	4890.47	As per DPR
3	No of population benefited due to specific project	—	Approximately 1 Lakh population
4	Economic benefits due to direct and indirect employment due to project	—	3 Lakhs Man days agricultural labour & industrial sectors
5	Economic benefits due to Compensatory afforestation	200.234	

Estimation cost for Forest diversion								
S.NO	PARAMETERS	Forest area falling in	Area in Ha	NPV per HA in lakhs	NPV	Factor	Total Amount	Remarks
1	Ecosystem services losses due to proposed forest diversion	Buffer	18.083	6.26	113.199	5	565.995	5 time of normal NPV
		Total					565.995	
S.NO	PARAMETERS	Forest area foiling in	Area in Ha	NPV per HA in laKhs	NPV	Factor	Total Amount	Remarks
2	Loss of animal husbandry productivity including losses of	Buffer	18.083	6.26	113.199	10%	11.319	10% NPV value
		Total					11.319	
S.NO	PARAMETERS	Forest area	Area in Ha	NPV per HA in	NPV	Factor	Total Amount	Remarks
3	Possessive value of forest land diverted	Buffer	18.083	6.26	113.199	30%	33.959	10% NPV value
		Total					33.959	
S.NO	PARAMETERS	Forest area	Area in Ha	NPV per HA in	NPV	Factor	Total Amount	Remarks
4	Habitat Fragmentation cost	Buffer	18.083	6.26	113.199	50%	56.599	50% NPV value
		Total					56.599	
5	Compensatory a forestation and	18.083X25 Lakhs=					470.158	Taken approximate Rate 25.00 Lakhs
6	Loss of public facilities and administrative infrastructure (road)	--						

CALCULATION OF ECONOMIC BENEFITS OF COMPENSATORY AFFORESTATION

S.No	years	Incremental value for every year	incremental Amount Benefit(Lakhs)	Remarks
1	1		6.33	Benefit cost taken for 1 Ha /year = Rs 35000 (18.083 Ha X Rs. 35000)
2	2	(5%+6.33)	6.65	
3	3	(5%+6.65)	6.98	
4	4	(5%+6.98)	7.33	
5	5	(5%+7.33)	7.70	
6	6	(5%+7.70)	8.09	
7	7	(5%+8.09)	8.49	
8	8	(5%+8.49)	8.91	
9	9	(5%+8.91)	9.36	
10	10	(5%+9.36)	9.83	
11	11	(5%+9.83)	10.32	
12	12	(5%+10.32)	10.84	
13	13	(5%+10.84)	11.38	
14	14	(5%+11.38)	11.95	
15	15	(5%+11.95)	12.55	
16	16	(5%+12.55)	13.18	
17	17	(5%+13.18)	13.84	
18	18	(5%+13.84)	14.53	
19	19	(5%+14.53)	15.26	
20	20	(5%+15.26)	16.02	
21	21	(5%+16.02)	16.82	
22	22	(5%+16.82)	17.66	
23	23	(5%+17.66)	18.54	
24	24	(5%+18.54)	19.47	
25	25	(5%+19.47)	20.44	
26	26	(5%+20.44)	21.46	
27	27	(5%+21.46)	22.53	
28	28	(5%+22.53)	23.66	
29	29	(5%+23.66)	24.84	
30	30	(5%+24.84)	26.08	
31	31	(5%+26.08)	27.38	

32	32	(5%+27.38)	28.75	
33	33	(5%+28.75)	30.19	
34	34	(5%+30.19)	31.7	
35	35	(5%+31.7)	33.29	
36	36	(5%+33.29)	34.95	
37	37	(5%+34.95)	36.7	
38	38	(5%+36.7)	38.54	
39	39	(5%+38.54)	40.47	
40	40	(5%+40.47)	42.49	
41	41	(5%+42.49)	44.61	
42	42	(5%+44.61)	46.84	
43	43	(5%+46.84)	49.18	
44	44	(5%+49.18)	51.64	
45	45	(5%+51.64)	54.22	
46	46	(5%+54.22)	56.93	
47	47	(5%+56.93)	59.78	
48	48	(5%+59.78)	62.77	
49	49	(5%+62.77)	65.91	
50	50	(5%+65.91)	69.21	
		TOTAL	1326.59	

Benefits from CA	1326.59	Lakhs
Estimate of cost of forest diversion	1025.441	Lakhs
Economic benefits due to CA	200.234	Lakhs


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