Check List No. 21

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Table: B

COST BENEFIT ANALYSIS

Estimation of Cost of Forest Diversion

Sr. No.	Parameters	Value expressed to Monetary terms and in Detail	Remarks
1.	Ecosystem services losses due to proposed forest diversion	Rs. 51,53,167 /-	Economic value of loss of eco-system services due to diversion of forest shall be the net present value (NPV) of the forest land being diverted as prescribed by the Central Government (MoEF & CC).
2.	Loss of animal husbandry productivity, including loss of fodder	Rs. 5,15,316.7/-	To be quantified and expressed in monetary terms or 10% of NPV applicable whichever is maximum
3.	Cost of human resettlement	Since no residential village/ area is getting affected, there will be no cost of human resettlement.	To be quantified and expressed in monetary terms as per approved R&R plan
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.	Since no public facilities and administrative infrastructure (Roads, building, schools, dispensaries, electric lines, railways, etc.) on forest land, being diverted due to the project, there will be no such loss.	To be quantified and expressed in monetary terms on actual cost basis at the time of diversion
5.	Possession value of forest land diverted	30% of environmental costs (NPV) due to loss of forests i.e. Rs. 1,71,772.2 /-	30% of environmental costs (NPV) due to loss of forests or circle rate of adjoining area in the district should be added as a cost component as possessor value of forest land whichever is maximum
6.	Cost of suffering to outsides	Nil	The social cost of rehabilitation of oustees (in addition to the cost likely to be incurred in providing residence, occupation and social services as per R&R plan) be worked out as 1.5 times of what oustees should have earned in two years had he not been shifted.
7.	Habitat Fragmentation Cost	Rs.1,03,063.34/-	While the relationship between fragmentation and forest goods and services in complex, for the sake of

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			simplicity the cost due to fragmentation has been pegged at 50% of NPV applicable as a thumb rule.
8.	Compensatory afforestation and soil & moisture conservation cost	Rs. 42,08,171 /-	The actual cost of compensatory afforestation and soil & moisture conservation and its maintenance in future at present discounted value

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PARAMETERS OF EVALUATION OF BENEFITS NOT WITH STANGING LOSS OF FORESTS (BENEFITS).

Nature of Proposal			Hydro Electric Project		
Sr. No.	Parameter	Applicability vis-à-vis nature of proposal and explanation.	Quantity of Benefit	Rate in Rupees	Monetary Value of Benefit (Rs. in lakh)
1.	increase in productivity attributable to the specific project	Applicable as in case of HEP. Though irrigation is not feasible in this run of the river project hence in primary sector no benefit may accrue yet the productivity increase in secondary and tertiary sector is likely to increase. This excludes revenue from sale of power *	50 units	10 000/- unit per year	250.00
2.	Benefits to economy due to specific project.	Revenue from sale of power annually. For the total project period ^ it would increase tremendously.	1735.50 Gwh (Giga-watt-hour) or 1735500000 units.	2.48 per unit	43040.40
3.	No. of population benefited due to specific project.	Increase availability of power will give impetus to industry and service sector as indirect employment etc#	6000 persons	1000 per capita per year	3000.00
4.	Economic benefit due to direct and indirect Employment due to the project.	Direct employment (for period of three years)$ (construction phase)	3000 persons	30000 per year	2700.00
		Direct employment (for a period of 50 years)$ (Post construction phase)	75 years	108000 per year	4050.00
5	Economic benefits due to Compensatory afforestation.		50 years	NIL	0
	Total (Benefits)	-	-	-	53040.40

Notes @ Explanations.

1. *The benefiting units in terms of an increase in productivity vary greatly in secondary and terliary sectors. As such this kind of distant benefit is difficult to quantify and monetize. However, the taking the beneficiary as units (whether as industries, service sectors companies or individuals) the quantity of benefit is attempted to be defined for a period of 50 years. This is highly conservative estimate.

2. ^If the benefit to the economy is calculated for a period of 50 years (ie expected life of the project) then it comes to 2152020 lac Rupees.

3. #However, the indirect employment in a post construction scenario is expected to then rise as the power supply begins to the industries and urban areas. About 4000 people are expected to benefit annually for a period of 50 years in the secondary and tertiary sectors @ Rs 1000 per person in a year gaining benefit of Rs 100 lac annually.

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4. $Direct employment of people during construction period is to be the tune of 1000 persons @Rs 300per day for about 300 days in a year. During the construction phase approximately 250 people in service and trade would also benefit for which no monetization is possible. The direct employment would come down drastically in a post construction phase and about 25 persons would be there for maintenance and for power supply as regular employees @ Rs 9000/-pm average salary (annual Rs 27,00,000)

Cost Benefit Analysis.

	Rs in lakh
Total loss(cost)	146
Total Benefit	53040.40
Cost Benefit Ratio	1:363.29

	Rs in lakh	Remarks
Total loss(Cost)	146	
Total Benefit:	53040.40	When only annual value of sale of power = Rs43040.40Lac is taken into account.
Cost Benefit Ratio	1:363	
Total Benefit	2152020	When value of sale of power =2152020 lac for 50 year taken into account.

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