



File No. IMC/ENV-09/2022-23/
OFFICE OF THE COMMISSIONER
ITANAGAR MUNICIPAL CORPORATION
ITANAGAR

Dated Itanagar the 13th June 2022

COST BENEFIT ANALYSIS FOR FOREST LAND DIVERSION

(Ref. MoEF guidelines No. 7-69/2011-FC (Pt.) dtd. 01st Aug, 2017)

Project- Diversion of 7.00 Ha of forest land for the “Construction of Solid Waste Management Plant at Karsingsa, Arunachal Pradesh”

Table A: Cases under which a cost-benefit analysis for forest diversion are required

S NO.	Nature of Proposal	Applicable/ Not applicable	Remarks
1	All the categories of proposal involving forest land up to 20 hectares in plains and upto 5 hectares in hills	Not applicable	
2	Proposal of defence installation purpose and oil prospecting (prospecting only)	Not applicable	
3	Habitation, establishment of industrial units, tourist lodge complex and other building construction.	Not applicable	
4	All other proposals involving forest land more than 20 hectares in plains and more than 5 hectares in hills including roads, transmission lines, minor, medium and major irrigation projects, hydro projects, mining activity, railway lines, location specific installations like micro-wave stations, auto repeater centers, TV Towers etc.	Applicable	These are cases where a cost benefit analysis is necessary to determine when diverting the forest land to non-forest use in the overall public interest.



Table B: Estimation of cost of forest diversion

S NO.	Parameter	Remarks	Monetary equivalent
1	Ecosystem services losses due to proposed forest diversion.	Economic value of loss of ecosystem 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)	NPV for the diverted forest area is considered as Rs. 14.3 lakhs/Ha.
		Note: in case of National parks the NPV shall be ten (10) times the normal NPV and in case of Wildlife Sanctuary the NPV shall be 5 times the normal NPV or otherwise prescribed by the ministry or any other competent authority	Total value of NPV in Rs.
			= (14.3 lakhs x 7 ha)
			=100.1 lakhs
2	Loss of animal husbandry productivity, including loss of fodder	To be qualified and expressed in monetary terms or 10% of NPV applicable whichever is maximum	10% of the total NPV i.e. 10.01 lakhs
3	Cost of human resettlement	To be qualified and expressed in monetary terms as per approved R&R plan	NIL
			There is no human resettlement issue in this project. Hence no cost involved for any R&R scheme
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.	To be quantified and expressed in monetary terms on actual cost basis at the time of diversion	NIL
			There is no requirement of any diversion of public facilities and administrative infrastructure (roads, building, schools, dispensaries, electric lines, railways, etc.) under the said project.



5	Possession value of forest land diverted	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 possession value of forest land whichever is maximum.	The possession value of cost land diverted is calculated as Rs. 30.03 lakhs. (30% of NPV)
6	Cost of suffering to outsees	The social cost of rehabilitation of outsees (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 outsees should have earned in 2 years had he not been shifted.	Not applicable for this project since there is no resettlement involved.
7	Habitat Fragmentation Cost	While the relationship between fragmentation and forest goods and services is complex, for the sake of simplicity the cost due to fragmentation has been pegged at 50% of NPV applicable as a thumb rule	Considered as 50% of NPV i.e. Rs. 50.05 lakhs
8	Compensatory afforestation and soil and moisture conservation cost	The actual cost of compensatory afforestation and soil and moisture conservation and its maintenance in future at present discounted value.	Cost of CA is considered as 3.5 lakhs per ha
			Total CA cost
			= (3.5 x 7 ha) = 24.5 lakhs
Total cost of forest diversion			(100.1+ 10.01+ 30.03+ 50.05+ 24.5) lakhs
			= 214.69 lakhs



Table C: Existing guidelines for estimating benefits of forest- diversion on CBA

S NO.	Parameters	Remarks	Monetary equivalent
1	Increase in productivity attribute to the specific project	To be quantified & expressed in monetary terms avoiding double counting	Sustainable development and proper waste management The lump sum monetary equivalent of the above benefit is considered as Rs. 100 lakhs
2	Benefits to economy due to the specific project	The incremental economic benefits in monetary terms due to the activities attributed to the specific project	The waste will be processed and segregated into bio-degradable and non-degradable components. The bio-degradable waste will be composted and converted into organic manure. The inorganic material will process into recyclable and RDF. The lump sum monetary equivalent of the above benefit is calculated = Rs. 30 lakh per year Monetary return of the project for 25 years = 30.00 X 25.00 = 750 Lakhs
3	No. of population benefited due to specific project	As per the detailed project report	About 2.50 lakhs population of Itanagar Capital Region
4	Economic benefits due to direct and indirect employment due to the project	As per the detailed project report	Temporary labours engagement (appx 45 nos. per day) during execution of the project along with various firms/suppliers/manufacturers will be engaged for a period of five (5) years. Permanent employment 05 (Five) nos. will also be generated. The lump sum monetary equivalent of the direct and indirect employment generation is calculated as 300 lakhs per year
5	Economics benefits due to Compensatory afforestation	Benefits from such compensatory forestation accruing over next 50 years monetized and discounted to the present value should be included as benefits of	Benefits from compensatory forestation accruing over next 50 years is huge and monetary equivalent is considered as Rs. 45 lakhs



		compensatory afforestation. *For benefits of CA guideline of the Ministry of NPV estimation may be consulted	
Total benefits			= (100 +750+300+45) = 1195.00 Lakhs

Cost Benefit Ratio (CBA Ratio) = Benefit/Cost

Cost Benefit Ratio (CBA Ratio) = **1195.00/214.69**

CBA Ratio= **5.56:1**

Place: Itanagar

Date:

(Er. Yumlam Take)

Executive Engineer (Pt-II)

Itanagar Municipal Corporation

Itanagar
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