

Benefit Cost Ratio

Name of Project: Rehabilitation and Up gradation Bameetha- Satna section of NH-75 from km 57+160 to km 155+000 (design length 97.840 km) in the state of MP to 2- lane with PS on EPC mode

Table A: Cases under which cost benefit analysis or Forest diversion Required

S.NO	NATURE OF PROPOSAL	APPLICABLE /NOT APPLICABLE	REMARK
1	All categories of Proposal Involving forest land upto 20 hectares in plains and upto 5 heactare in hills	Not Applicable	Not Applicable
2	Proposal for define installation purposes and prospecting (prosppection only)	Not Applicable	Not Applicable
3	Habitation establishment of industrial units, tourist lodges complex and other building construction	Not Applicable	Not Applicable
4	All other proposals involving forest land more than 20 hectare in bills including roads, transmission line, minor, medium and major irrigation project, hydro projects, ,mining activity, railway lines, location specific installation like micro, wave station, auto repeater centres, TV tower etc.	Applicable	Benefit Cost Ratio has been calculated as per forest guideline.

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Table B : Estimation of cost of forest diversion

S.NO	Parameters	REMARK
1	Ecosystem services losses due to proposed forest diversion	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). Note: In case of national parks the NPV shall be ten (10) times the normal NPV and in case of wildlife sanctuary the NPV or otherwise prescribed by the ministry or any other competent authority.
2	Loss of animal husbandry productivity including loss of fodder	To be quantified and expressed in monetary terms or 10% of NPV applicable whichever in maximum.
3	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 (Road, building, school, 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.
5	Possession value of forest land diverted	30% of environmental cost (NPV) due to loss of forest 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.
6	Cost of suffering to outsees	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 outsees should have earned in two years had he not been shifted.
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 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	The actual cost of compensatory afforestation and soil and moisture conservation and its maintenance in future at present discounted value.

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

S.NO	NATURE OF PROPOSAL	REMARK
1	Increase in productively attribute to the specific project	To be quantified & expressed in monetary terms avoiding double counting
2	Benefit to economy due to the specific project	The incremental economic benefit in monetary terms due to the activities attributes to the specific project.
3	No. of population benefited due to specific project	As per the Detailed project report
4	Economic benefits due to of direct and indirect employment due to the project	As per the detailed project report
5	Economic 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 compensatory afforestation. <ul style="list-style-type: none">• For benefit of CA the guideline of the Ministry of NPV estimation may be consulted.

Note 1 : Net present value (NPV) of environment and ecosystem services loss :

The concept of Net present value of the forest land diverted is as scientific method of calculating the environmental cost and other losses caused due to diversion of forest land for non-forestry purposes. The NPV represents the net value of various ecosystem service and other environmental services in monetary terms which the forest would have provided if the forest would not have been diverted.

Note -2 : Possession value of forest land diverted :

The forest land diverted for the project such as irrigation, hydropower, railways roads, wind, and transmission lines and mining etc are unlikely to be returned and remains in possession of the used agencies. Therefore 30% of the net present value (NPV) of forest land diverted or market rate of adjoining area in the district should be added as a cost component as "possession value of forest land" in addition to the environmental costs due to loss of forest.