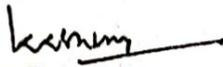


## Annexure-II

### Conducting Cost-Benefit analysis for proposal involving Forest Diversion

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

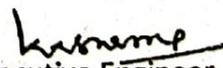
S. No.	Nature of Proposal	Applicable / Not-Applicable	Remarks
1	All Category of Proposals involving forest land upto 20 Hectares in Plains and Upto 5 Hectare in hills	Not Applicable	These proposals may be considered on a case-to-case basis and value judgment.
2	Proposals for defense installation purposes and oil prospecting (Prospecting Only)	Not Applicable	In view of national Priority accorded to these sectors, the proposals would be critically assessed to help ascertain that the utmost minimum forest land is diverted for non-forest use.
3	Habitation, establishment of industrial units, tourist lodges / complex and other building construction.	Not Applicable	These activities being detrimental to protection and conservation of forest, as a matter of policy, such proposals would be rarely entertained
4	All other proposals involving forest land more than 20 Ha. in plains and more than 5 Ha. in hills including roads transmission lines, minor and major irrigation projects, hydro projects, mining activity, railway lines located specific installation like micro - wave stations, auto repeater centers, T.V towers etc.,	Applicable	These are cases where a costbenefit analysis is necessary to determine when diverting the forest land to non-forest use in the overall public interest.

  
Executive Engineer  
PMGSY Division  
Billawar

**Table-B Estimation of cost of Forest diversion**

S. No.	Parameters	Remarks
1.	Ecosystem services losses due to proposed Forest Diversion	Ecosystem loss due to proposed Forest Diversion = Rs. 61.8571 Lakh
2.	Loss of animal husbandry productivity, including loss of fodder	We may take as 10% of NPV = Rs. 6.18 Lakh
3.	Cost of human resettlement	At least 05 structures are coming in the road alignment and their likely compensation works out to be Rs 30 Lacs. Approx.
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.	no loss of public infrastructure like roads, hospital etc are investigated. However, there may be some utility shifting like, electricity pole, PHE pipelines etc. the likely cost of these utility shifting is Rs. 5 lacs.
5.	Possession value of forest Land diverted	We may take as 30% of NPV = Rs. 18.55 Lakh
6.	Cost suffering to oustees	APPROX 3 Ha of private land is coming under the alignment of the road. Generally 1 Crop is cultivated in the agricultural land throughout the year. The agricultural productivity is about 300tl per ha @ Rs 1300 per Qtl. For 3 Ha area and for 3 Years, cost Rs = 1.17 Lacs
7.	Habitat Fragmentation Cost.	Cost Due to fragmentation is Rs. 61.8571 Lakh x 0.50 = Rs. 30.92 Lakh
8.	Compensatory Afforestation and soil & moisture conservation cost	The cost of compensatory Afforestation is Rs. 15.26 Lakh

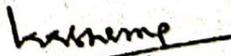
**Total Cost = Rs. 168.9371 Lakhs**

  
 Executive Engineer  
 PMGSY Division  
 Billawar

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

S. No.	Parameters	Remarks
1.	Increase in productivity attribute to the specific project.	Road is a basic amenity which makes a crucial contribution both in social and economical way of growth and development of an area and general inhabitants. Because of new road there shall be positive impact on agricultural productivity due to easy access to technology and marketing. As per annexure 1-a increase in productivity is Rs. 194.71 Lakh
2.	benefits to economy due to the specific project	Economic Benefit in terms of increase in trade, Saving in vehicular operation and maintenance cost, better connectivity, safe journey to Commuter and Saving of time travel Improved road connectivity helps in better implementation and management of Govt. schemes. It will provide last and economical transport of goods after completion of project. The local people in the area will be greatly benefitted. As per annexure 1-b,c Benefit= Rs. 7.45 Lacs
3.	No. of population benefitted due to specific project.	As per Census 2011, about 1095 population shall be benefitted in Village Malhar, Malad and Marhoon.
4.	Economic benefits due to of direct and indirect employment due to the project.	During construction phase about 50 workers and 10 technical staff may be employed at site Total Cost = Rs. 172.80 Lakh
5.	Economic benefits due to Compensatory afforestation	There shall be Compensatory afforestation on 13.876 ha of degraded land in Kathua District. Over the years it will lead to economic. benefits by providing timber, fuel and fodder in the area. The ecological value for a 50 year period for the density of 1 is Rs 126.74 Lacs per Ha by considering minimum 0.3 density the ecological gain for the project would be Rs. $126.74 \times 0.3 \times 13.876 =$ Rs. 527.593 Lakhs

Total benefit = Rs 902.553 Lakhs  
 Benefit cost ratio =  $902.553/168.9371 = 5.34$

  
 Executive Engineer  
 PMGSY Division  
 Billawar

Name of Work:- Construction of road from Malhar to Marhoon (Part-I) Phase-X, Pkg No:- JK07-136, Length :- 12.975 Kms, Stage-Ist.

**A) Increase in Agriculture Produce**

1	Total earning of the District	Rs. 19616.88 Lacs
2	Total Length of road in the District	1306.94 Kms
3	Earning Per Km	Rs. 15.009 Lacs
4	Total Length of road under Project	12.975 Kms
5	Total earning on account of project	Rs. 194.75 Lacs

A

**B) Reduction in vehicle operating cost**

1	Total Length of road under Project	12.975 Kms
2	Total PCU	300
3	Conversation Factor Rs. 7/Km/PCU/Day	$\frac{7 \times 12.975 \times 300}{10 \text{ s}}$
4	Income Generated out POC	Rs. 0.26 Lacs

B

**C) Travel Time Saved**

1	Proportional saving in travel time = 10% of population x time red x Km = $10/100 \times \text{population} \times 7/60 \times 365/8 \times \text{length of road} \times 0.65 \times 300 = .0007414 \times 748 \times 12.975$	Rs. 7.19 Lacs
2	Total benefits = A+B+C	Rs. 202.20 Lacs

C

*Karnems*  
Executive Engineer  
PMGSY Division  
Billawar