

BENEFIT COST ANALYSIS REPORT

Evaluation of forest losses as per parameters in table-B

New Delhi Letter No. 7-69/2011-FC(pt), Dated 01st August, 2017

Parameter-1 Ecosystem services losses due to proposed forest diversion

Total forest land to be diverted -12.92 ha. Net Present Value for 1 ha of forest land to be diverted=@ Rs. 6.26 Lakh (maximum for eco class value-1) per ha . Hence total net present value for 12.92 ha of forest land will be Rs.80.88 Lakh

$$12.92 \times 626000 = 8087920 \quad \text{Rs.} \quad 80.88 \quad \text{Lakh}$$

Parameter-2 Loss of animal husbandry productivity, including loss of fodder

Estimated 10% loss of animal husbandry productivity due to diversion of 12.92 ha. of forest land which will be Rs 8.88 Lakh

$$10\% \times 8087920 = 808792 \quad \text{Rs.} \quad 8.88 \quad \text{Lakh}$$

Parameter-3 Cost of human resettlement

As submergence area is within Nalla banks & on the Agriculture land. Hence there will be no loss involved on account of Human Resettlement

Parameter-4 Loss of public facilities and administrative infrastructure (Roads, building, school, dispensaries, electric lines, railways, etc) on forest land, which would require forest land if these facilities were diverted due to the project. As this project does not involve any loss of public facilities and infrastructure. Hence there will be no loss on account of the public facilities and infrastructure.

Parameter-5 possession value of forest land diverted.

At present the possession value of forest land 12.92 ha to be diverted estimated to be 30% of the Net Present Value calculated (Maximum for eco class-I). The total maximum Net Present Value of forest land comes to Rs. 80.88 Lakh. Hence possession value comes out to Rs. 24.26 Lakh

$$30\% \times 80.88 = 24.26 \text{ Lakh}$$

Parameter-6 Cost of suffering to oustees

As this project does not involve any rehabilitation there will be no loss involved on this account.

Parameter-7 Habitat fragmentation cost

this project involves forest land along nalla bank, which is habitat for various wild animals and birds found in that area. But there is no Tiger project, National park, Wildlife sanctuary and ecologically sensitive zone of existing protected area. habitat fragmentation cost calculated as 50% of value of maximum Net Present value realized for this project and which comes out to Rs. 40.44 Lakh

$$50\% \times 80.88 = 40.44 \text{ Lakh}$$

Parameter-8 Compensatory afforestation and soil & moisture conservation cost

As the project area is 12.92 ha and this being a State Government project the compensatory afforestation will be taken on alternate land provided by Collector Jalgaon i.e 12.92 ha of land. This compensatory Afforestation will be raised and maintained for period of 10 years at the cost of User Agency calculated at prevailing wage rates of forest Department and which comes out to Rs. 214283/- per ha. and hence this operation cost will be Rs. 27.68 Lakh

$$12.92 \times 214283 = 2768536.36 \quad \text{Rs} \quad 27.68 \quad \text{Lakh}$$

Evaluation of benefits from the project as per parameters in table-C New Delhi Letter No. 7-69/2011-FC(pt), Dated 01st August, 2017

Parameter-1

Increase in productivity attribute to the specific project.

- a) Net increase in agricultural produce for 50 years. =Rs. 10613.69 Lakh

Rs. 10613.69 Lakh

- b)

It is proposed to develop fisheries produced reservoir, Hence overall benefits on this account for 50 years = Rs. 119.17 Lakh

Rs. 119.17 lakh

- c) Animal husbandry produce for 50 years=338.73 Lakh

Rs. 338.73 Lakh

Parameter-2 Benefits to economy due to specific project.

It is assumed that there will be an overall benefit to the economy at 50% of increase in the agricultural output worked out under parameter 1 (a). Thus benefit due to project on this account will be.=Rs. 5306.84 Lakh.

$$50\% \times 10613.69 = 5306.845 \text{ Lakh}$$

Parameter-3 No. of population benefited due to specific project.

In all 5 villages are to be benefited in the command area due to construction of this project. Total population of these villages is 9933, assuming 6 members per family, total no of families benefited will be about 1656, assuming on increase income per family Rs.50000/- per to the population on this account for 50 years, for 1656 families will be=Rs. 414 lakh.

$$50000 \times 1656 \times 50 = 4140000000 \text{ Rs. 414 Lakhs}$$

Parameter-4 Economic benefit due to of direct and indirect employment due to the project.

- a) Employment generated during construction period. Generally in construction project, ratio of labour component cost to material component cost is 30:70. Employment generated during construction of the project, the total cost of the project is 5600 lakh. The labour component will be about about 30% ie Rs. 1680 Lakh

$$30\% \times 5600 = 1680 \text{ Lakh}$$

- b) Employment generated after construction.

It has been assessed from the statistics available for the irrigation project in operation that labour potential of 50 mandays /ha/year is generated perennially in the fields and agro-based industries. In case of this project ICA of project is 1204 ha. assuming wages at Rs 448/- per day, the employment potential that will be created during 50 years will be Rs. 539392 Lakh.

$$50 \times 448 \times 1204 \times 50 = 1348480000 \text{ Rs. 13484 Lakh}$$

Parameter-5 Economic benefits due to Compensatory afforestation.

The compensatory afforestation will be raised over the land of 12.92 ha. The economic benefits realized from this project are calculated over the period of 50 years. At NPV rate of Rs 6.26 lakh/ha. Which comes out to Rs. 4043.96 lakh.

$$12.92 \times 6.26 \times 50 = 4043.96 \text{ lakh}$$

CALCULATIONS OF BENEFIT COST RATIO

Total cost (as per table -B Calculation)

$$= \text{Rs. 182.14 Lakh}$$

Total Benefits (as per table -C Calculation)

$$= \text{Rs. 36000.40 Lakh}$$

Hence, Benefit/Cost ratio

$$= 197.65$$

Cost Benefit Analysis for forest land diversion in accordance with the MoEF & CC's guidelines dated 1.8.2017
Table-B: Estimation of Benefits for forest diversion for Nimbhel Minor Irrigation Project Tal & Dist. Nandurbar

sr. no	Parameters	Remarks
1	Ecosystem services losses due to proposed forest diversion.	Net Present Value for 1.00 ha of forest land=@ Rs. 6.26 Lakh per ha. Net Present value for 56.86 ha of forest land=12.92x626000= Rs. 80.88 Lakh
2	Loss of animal husbandry productivity, including loss of fodder	10% of Rs. 80.88 Lakh of the Total Net Present Value calculated as above comes to:- Rs. 8.88 Lakh
3	Cost of human resettlement	There will be no loss involved on account of human settlement.
4	Loss of public facilities and administrative infrastructure (Roads, building, school, dispensaries, electric lines, railways, etc) on forest land, which would require forest land if these facilities were diverted due to the project.	Not Applicable.
5	possession value of forest land diverted.	30% of Rs. 80.88 Lakh Net Present Value for possession value of forest land comes to= Rs. 24.26 lakh
6	Cost of suffering to oustees	Nil
7	Habitat fragmentation cost	50% of Rs.80.88 Lakh Net Present Value for habitat fragmentation cost= Rs.40.44 Lakh
8	Compensatory afforestation and soil & moisture conservation cost	Rs.214283/- per ha x 12.92 ha= Rs. 27.68 Lakh
	Total Estimated Cost of forest diversion	Rs. 182.14 Lakh

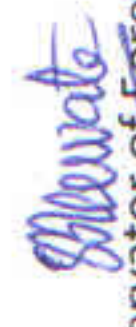
Cost Benefit Analysis for forest land diversion in accordance with the MoEF & CC's guidelines dated 1.8.2017

Table-B: Estimation of Benefits for forest diversion for Nimbhel Minor Irrigation Project Tal & Dist. Nandurbar

sr. no	Parameters	Remarks
1	Increase in productivity attribute to the specific project.	a) Net increase in agricultural produce for 50 years . =Rs 10613.69 Lakh b)It is proposed to develop fisheries produced reservoir, Hence overall benefits on this account for 50 years = Rs. 119.17 Lakh c)Animal husbandry produce for 50 years = Rs. 338.73 Lakh
2	Benefits to economy due to specific project.	It is assumed that there will be an overall benefit to the economy at 50% of increase in the agricultural output worked out under parameter 1 (a). Thus benefit due to project on this account will be.=Rs.5306.84 Lakh.
3	No. of population benefited due to specific project.	In all 5 villages are to be benefited in the command area due to construction of this project. Total population of these villages is 9933,assuming 6 members per family,total no of families benefited will be about 1656 , assuming on increase income per family Rs.50000/- per to the population on this account for 50 years,for 1656 families will be=Rs. 414 lakh.
4	Economic benefit due to of direct and indirect employment due to the	a) Employment generated during construction period.
5	Economic benefits due to Compensatory afforestation.	The compensatory afforestation will be raised over the land of 12.92 ha. The economic benefits realized from this project are calculated over the period of 50 years. At NPV rate of Rs 6.26 lakh/ha. Which comes out to Rs. 4043.96 lakh.
Total Benefits.		Rs. 561908.39 Lakh

Place : Shahada

Date :


 Dy Conservator of Forests
 Nandur Forest Division,
 Shahada