Cost Benefit of Proposal for diversion of 25.554 Ha. Forest land under Forest (Conservation) Act, 1980 for Construction of Manekhind Minor Irrigation Scheme at Village: Manekhind, Taluka: Shahapur, District: Thane in the State of Maharashtra.

Guidelines Date: 1/8/2017

Table A: Evaluation of loss of land

1.	Ecosystem services losses due to proposed forest diversion.	Net Present Value for 25.554 ha. Of forest land = @ 14.37 lakhs per ha. **Net Present Value for 25.554 ha. Of forest land = 25.554 x 14.37 = 367.21lakh.**
2.	Loss of animal husbandry productivity, including loss of fodder.	10% of **367.21**lakh of the total Net Present Value calculated as above come to = **36.72 lakh.**
3,	Cost of human resettlement.	There will be no loss involved on account of human resettlement.
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.	Not applicable.
ᵢ.	Possession value of forest land diverted.	30% of **367.21** lakh Net Present Value for possession value of forest land comes to = **Rs. 110.16 lakh.**
	Cost of suffering to out sees.	Nil.
	Habitat Fragmentation Cost.	50 % of Rs. **367.21**lakh Net Present Value for habitat fragmentation cost = **Rs.176.81 lakhs.**
	Compensatory afforestation and soil & moisture conservation cost.	Rs.6.43per ha x 25.554 ha = **164.31 lakhs**
	Total Estimated cost of Forest Diversion :-	**Rs. 855.21lakhs**

Table B

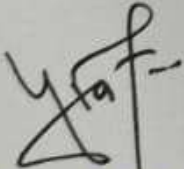| Sr. No.	Parameters.	Evaluation of Benefits.			
1.	Increasing of productivity attributed to specific project.	(A) Due to increase in Agriculture produce :-			
				Value in (Rs. Lakhs)	Total cost.
		I)	Agricultural Produced before Completion of the Project Quantity In Mt. 310.35	Rs 45.00	
		II)	Agricultural Produced before Completion of the Project Quantity In Mt. 2073.76	Rs 78.30	= 1664.89 Lakhs
		III)	Increase in Agricultural Produce per year Quantity in Mt. 1763.41	Rs 33.29	
		B)			37.50 Lakhs
		Due to rise in ground water table in the command area of the project 2 villages are to be benefited in the command area due to the construction of this project by way of increase in ground water table. Assuming benefit on this account to be Rs. 25,000.00 / village / year , the total value of benefits that will accrue on this account in 50 years will be, = 03 x 50 x 25000			
		C)			4.5 Lakhs
		Due to increase in timber out turn In the area adjoining to the reservoir it is Assumed that @ Rs. 1200/- per m. width Of the forest all along the 4500 m. Periphery of the reservoir will be benefited Due to rise in ground water table =10 x 4500/- Total out turn from the forest of 22.554 ha is Rs.45000/- per ha./ Year assuming 20% increase in annual Out turn the value per hectare 45000 x 3.9=178360.8 Therefore 22.554 ha to accrue in 50 years will be = 0.4 X 50 X 178360.8			35.67 lakhs
		D)			
		Annual production of @ 5000Kg/14.75 amounting to Rs. 20.00 Lakh per year deduction of expenditure the overall benefits of this accounts for 50 years = 20 x 50			1000.00lakhs
		E)			
		Benefits due to hydro power Generation is			Nil
					Total=2742.56 lakhs.

2.	Benefit of Economy due to the specific project.	It is assumed that there will be over all benefit to the economy, @ 10% in the agriculture output worked under parameter, thus benefit to the project will be **Rs.166.49**
3.	No. of population benefited due to specific project.	In all four villages are to be benefited in the command area due to this project. Total population of these villages is 4000 assuming of 3 members per family total No. of families benefited will be @ 500/- family. Assuming increase in income per family @ Rs.4500/- per year due to additional employment changes in Agriculture. Over all benefits to the population on this account for 50 years will be **Rs 1125.00 Lakhs.**
4.	Economic benefits due to direct and indirect employment due to the project.	(i) The total cost of the project is Rs.578.58 Lakhs excluding contingency and work charges cost. Employment generated during the construction of project and the labour component will be 400 lakhs. The employment generated assuming the labour wages @ Rs.396.73 per day @ 400 lakhs mandays in monetary terms the employment potential will be = 60000 x 396.73 = 238.038 lakhs. (ii) It has been observed from the statistics available for the irrigation projects in operation that a labour potential of 51 mandays / Ha. / year is generated potential due to employment in the fields in agrobased industries. In case of this project the Irrigable command area is @ 160 ha. Assuming wages @ Rs. 396.73 per day , the employment potential that will be generated during 50 years will be, = 51 x 396.73 x 160 x 50 =1618.65 lakhs. (iii) Total of para (I) + (ii) =**1856.68 lakhs.**
5.	Economics benefits due to Compensatory Afforestation.	a) NPV for Dense Forest=14.36 lakhs x 25.554 ha x 25 year = **9173.88 lakhs.** b) NPV for open Forest = 11.16 lakh x 25.554 ha. x 25 = **7129.56 lakhs**
	Total	**Rs 20306.22 lakhs**

CALCULATION OF BENEFIT / COST RATIO.

Total Cost (As per Table B Calculation) = Rs. 2742.56lakhs

Total Benefits (As per Table Calculation) = Rs 20306.22lakhs

Total Benefit / Cost Ration. = Rs. 7.40

(Darshan V. Thakur)
F nge Forest Officer

Dy. Conservator of Forests
Shahapur Forest Division,
Shahapur.

District Water Co   ation Officer
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