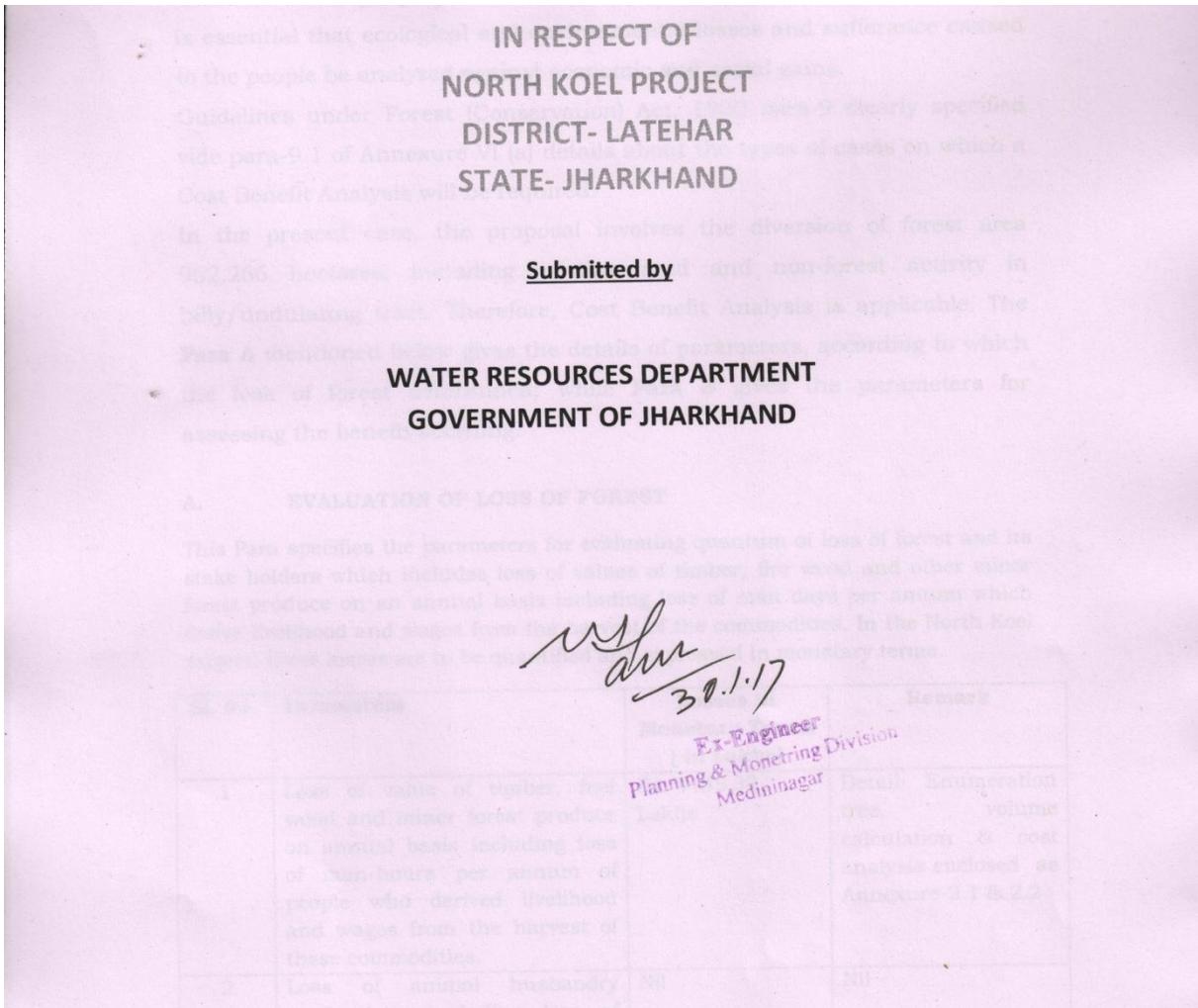


**COST BENEFIT ANALYSIS REPORT
FOR
DIVERSION OF 1007.29 HA OF FOREST LAND
IN RESPECT OF
NORTH KOEL PROJECT
DISTRICT- LATEHAR
STATE- JHARKHAND**



ANALYSIS OF NORTH KOEL PROJECT

WATER RESOURCES DEPARTMENT, GOVERNMENT OF JHARKHAND

While considering a proposal for diversion of forest land for non-forest use, it is essential that ecological and environmental losses and sufferance caused to the people be analyzed against economic and social gains.

Guidelines under Forest (Conservation) Act, 1980 para-9 clearly specified vide para-9.1 of Annexure VI (a) details about the types of cases on which a Cost Benefit Analysis will be required.

In the present case, the proposal involves the diversion of forest area 962.266 hectares, including existing road and non-forest activity in hilly/undulating tract. Therefore, Cost Benefit Analysis is applicable. The **Para A** mentioned below gives the details of parameters, according to which the loss of forest determined; while **Para B** gives the parameters for assessing the benefit accruing.

A. EVALUATION OF LOSS OF FOREST

This Para specifies the parameters for evaluating quantum of loss of forest and its stake holders which includes loss of values of timber, fire wood and other minor forest produce on an annual basis including loss of man days per annum which derive livelihood and wages from the harvest of the commodities. In the North Koel project, these losses are to be quantified and expressed in monetary terms.

Sl. No.	Parameters	Losses in Monetary Terms (in Lakha)	Remark
1	Loss of value of timber, fuel wood and minor forest produce on annual basis including loss of man-hours per annum of people who derived livelihood and wages from the harvest of these commodities.	Rs. 4435.38 Lakhs	Total no. of tree 344644
2	Loss of animal husbandry productivity including loss of fodder	Nil	Nil
3	Cost of human resettlement	Rs 8.144 lakhs	Land and House Cost, detail enclosed as Annexure-3 (R & R

			status)
4	Loss of public facilities and administrative infrastructures (Roads, buildings, schools, dispensaries, electric lines, railways etc.) on forest land, or which would require forest land if these facilities were diverted due to the project.	Nil	Nil
5	Environmental losses: (Soil erosion, effect on hydrological cycle, wildlife habitat, microclimate upsetting of ecological balance).	Rs. 51065.573 Lakh	Through technical judgment would be primarily applied in determining the losses, as a thumb rule the environmental value of one hectare of fully stocked forest (Density-1.0) would be taken as Rs. 126.74 lakhs/hectare to accrue over a period of 50 years. The value will reduce with density for example, If density is 0.4, the value will work out at Rs. 50.696 lakhs.
6	Suffering of oustees.	Rs. 8.144 lakhs	As per compensation provided 1985 onwards
Total Forest Loss			Rs. 55509.097 Lakh

B. Parameters for evaluation of BENEFIT notwithstanding loss of forests:

Sl.No	Parameters	Work Description	Quantification and Expression:
			Benefits in Monetary terms
1	Increase in productivity attributed to the specific project	(i) Net Value of Produce before irrigation	Rs. 2728.62 lakhs
		(ii) Net Value of Produce after irrigation	Rs. 27158.92 lakhs
		(iii) Net Annual benefit	Rs. 24430.30 lakhs
2	Benefits to economy	(ii) Drinking Water/per year	Rs. 91.25 lakhs
		(iii) Industrial Water /per year	Rs. 74.85 lakhs
3	No. of population benefitted	(i) Human population (3 districts of Jharkhand and 2 districts of Bihar)	
		Total Population= 32.62 lakhs (i.e. assumed 30 % of total population of 5 districts) included agriculture labour =4.32 lakhs	Rs. 24596.40 lakhs
		Total Population benefitted = 36.94 lakhs	
4	Employment Potential	Total man days (300days/year)	Total earning per annum
		a) Direct Employment = 75000 man days	Direct = Rs. 166.20 lakhs
		b) Indirect Employment = 120000 man days	Indirect = Rs. 600.00 lakhs
		Total = 195000 man days/year	Total = Rs. 766.20 lakhs
5	Cost of acquisition of facility on non-forest land wherever feasible	Nil	Nil
6	Loss due to diversion of forest land with respect to:		
	i) Agricultural production	Nil	Nil

	ii)Animal husbandry production	Nil	Nil
7	Cost of rehabilitation of displaced person as different from compensatory amount given for displacement	Nil	Nil
8	Cost of supplying free fuel wood to workers residing in or near the forest area during the period of construction	Instead of fuel wood, workers will be provided Kerosene oil. Rs. 76 lakhs (10 % of labour cost)	Rs. 76 Lakhs
	Total estimated Benefit		Rs. 1229820.0 Lakhs
	a. Increase in productivity attributed to the specific project over 50 years		Rs. 8305.0 lakh
	b. Benefits to economy over 50 years		Rs. 766.20 lakhs
	c. Employment Potential as per project		
Grand Total			Rs. 1230662.20 Lakh

* Details given in annexure 2.2

COST BENEFIT ANALYSIS

(A) Based on value of products

Benefit - **Rs. 1230662.20 Lakh**
Loss - **Rs. 55501.27 Lakh**

(B) Cost Benefit Ratio

Benefit = **22.1 : 1**
Loss

msb
31.1.17

Ex-Engineer
Planning & Monetring Division
M

J. Singh
31-1-17

मुख्य अभियंता
जल संसाधन विभाग
मेदिनीनगर