CD (Building), P.W.D. Meerut

PROPOSED FOREST LAND TO BE DIVERTED FOR CONSTRUCTION OF CHAUDHARY CHARAN SINGH KANWAR NAHAR PATRI (UPPER GANG CANAL RIGHT BANK) IN DISTRICTS MUZAFFAR NAGAR, MEERUT AND GHAZIABAD. (UTTAR PRADESH)

COST BENEFIT ANALYSIS

Purpose: This cost benefit analysis is being undertaken for proposed diversion of forest Land being affected due to construction of access controlled.

(a) Parameters for Evaluation of the loss of Forests

1.	Ecosystem Services losses due to Proposed forest diversion	Economic Value of Ecosystem services due to diversion of forest = Proposed Forest area x NPV Rate per Ha Net Present Value (NPV) for forest land of Eco-class III (density 0.1) = 6.26/ lacs per Ha. Therefore, ecosystem services losses due to proposed diversion of protected forest land in Forest division **Muzaffar Nagar** of **113.68 Ha** is 113.68 x 6.26= **711.63680/- Lacs** And ecosystem services losses due to proposed diversion of protected forest land in Forest division **Meerut** of **84.60 Ha** is 84.60 x 6.26= **529.596/- lacs** And ecosystem services losses due to proposed diversion of protected forest land in Forest division **Ghaziabad** of **24.70 Ha** is 24.70 x 6.26= **154.622/- lacs** **NPV of Muzaffernagar, Meerut and Ghaziabad=** **711.6368+529.596+154.622= INR 1395.8548** No. of Trees that will be affected due to proposed diversion of forest land are: 16699 trees in Forest division Muzaffar Nagar 18883 trees in Forest division Meerut 4163 trees in Forest division Ghaziabd so, total value of trees is (39745 Trees x 174/-) = INR6915630/- = **69.15630 Lacs**
2.	Loss of animal husbandry, productivity including loss of fodder	Nil
3.	Cost of human resettlement	No human displacement involved in forest area
4.	Loss of public facilities and administrative infrastructure (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.	There are no Public facilities and administrative infrastructure (roads buildings, schools, dispensaries, electric lines, railway etc.) on proposed diverted forest land.

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5.	Environmental losses (soil erosion, effect on hydrological cycle, wild life habitat, microclimatic upsetting of ecological balance)	As per Forest (Conservation) Act, 1980 the environmental loss for a 50 years period for the density of 1.0 is INR 126.74Lacs per hectare, The division wise environment loss is as follows:-

Division	Proposed Forest Area (ha)	Density	Environmental Loss in Lacs
Muzaffar Nagar	113.68	0.1	1440.78032
Meerut	84.60	0.1	1072.22040
Ghaziabad	24.70	0.1	313.04780
Total			2826.04852

		Hence, on calculation the current total environmental lossis Lacs =126.74 per hectare and Total environmental loss for the project is 2826.04852 Lakhs.
6.	Possession value of forest land	30% of environment costs due to loss of forests =30% x2826.04852 = 847.814556
7.	Suffering to outsee	Nil

Therefore, Current Environment Net loss
= **1395.8548** (Ecosystem Losses) + **69.15630 68.47944** (Trees Values) +**2826.04852** (Environmental Loss) +**847.814556** (Possession Value of forest land) = **5138.874176 Lacs**

Expenditure for development and maintenance of the project for 15 years
= Cost of Project (Excluding canal structure) + Renewal cost of BC for two cycle
= 57349.00 lacs+ 4683.00Lacs
= 62032.00 lacs

Net Total Losses/Cost = 5138.874176 Lacs + 62032.00 lacs
= 67170.874176 lacs

(b) Parameters for evaluation of Benefit Not withstanding Loss

Sr.No.	Parameter	Description
1	Increase in productivity attributable to the specific Project	In Lieu of total area to be affected in forest land it is proposed to undertake at least twice of the affected trees as compensatory afforestation as per Forest (Conservation) Act, 1980. Since, due to the current project there will be total affected forest land area of 222.98 Ha and 39356 no. of felling of trees. The CA will be done in 222.98 Ha of equivalent non forest land thus; total 245278 trees (1100 trees per Ha will be planted) are to be planted as per compensatory afforestation, which is down the line after ten years would be having the density of 1.0 The Compensatory Afforestation cost will be @ 174 per tree is 245278x174/100000= **426.78372lacs** The ecological value for a 50 years period of density of 1.0 is 126.74 lac per hectare. By considering the min 0.5 density the ecological gain for this project would be **14130.2426 lacs**

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2	Benefits to economy due to specific project	Socio economic benefits due to the proposed road construction project include:

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- Reduce fuel consumption due to better surface quality.
- Traffic speed increase which save time of road users.
- Fuel consumption is estimated to be reduced.
- Vehicle operating cost will reduce due to better transportation.
- In general there will be enhancement of socio-economic condition of the area along the project corridor.

The overall mission is to increase the GDP of the said region and make it comparable with the nation GDP.

3	No. of population benefited due to specific Project	The Population of 5 lacs of People from district Muzaffar Nagar, Meerut and Ghaziabad will be benefiteddirectly or indirectly.

4	Economic benefit due to direct and indirect Employment Potential	Approximately 1000 skilled and semi skilled labours will be permanently employed and 50000 mans day of temporary employment will be generated due to proposed project.

5 — Economic benefit due to specific Project

The benefit of Economy shown in table below

Project Details	Increasing Rate of Cost year	Project cost after 50 Years	Current Cost Involve in Construction of Project	Net Profit in 50year
CONSTRUCTION OF CHAUDHARY CHARAN SINGH KANWAR NAHAR PATRI (UPPER GANG CANAL RIGHT BANK) IN DISTRICTS MUZAFFAR NAGAR, MEERUT AND GHAZIABAD.	8%	314370.00Lac	62874.00Lac	251496.00 Lac

So benefit of economy in 50 years =**251496.00 Lac.**
GDP will increase 4%(**251496/6286522**) current GDP of Muzaffernagar (1886962 lacs), Meerut (1931323 lacs) and Ghaziabad (2468237 lacs)
Saving due to less consumption of fuel and fatalities=**1000 lacs**
Total NPV of the project = 222.98 x 6.26= **1395.8548 lacs**

Therefore Project Benefit

= **426.78372lacs** (CA cost) + **14130.2426 lacs** (Ecological value) +**251496.00 Lac.** (Economic gain) + **1000.00** Lacs (Savings) + **1395.8548 lacs (NPV)**
Net Profit= **268448.88112 lacs**

Therefore Benefit cost ratio = **268448.88112/67170.874176 = 3.99>1**
Hence project is viable

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