Udaipur-Himmatnagar-Ahmedabad Gauge Conversion Project

Parameters for evaluation of Benefit, Nothwithstanding Loss

S. No.	Parameters	
1	Increase in productivity attribution to specific project	At present, Udaipur is connected to Ahmedabad via Dungarpur and Himmatnagar through Metre-gauge railway line. Broad gauge connectivity is available from rest of the railway network up to Udaipur and Ahmedabad separately. As a result, through traffic cannot be continued beyond Udaipur upto Ahmedabad and vice versa. Conversion of Udaipur-Himmatnagar-Ahmedabad railway line from metre gauge to broad gauge will provide alternate rail route from Delhi/Jaipur/Ajmer to Ahmedabad. This will help in better movement of passenger and freight traffic with enhanced productivity. Present metre gauge line has a general speed potential of 45 kmph only which comes down to even 15 kmph in certain block sections. The Broad gauge line will serve as a vital link for the socially and economically backward regions of Udaipur and Dungarpur districts. Rate of return (ROR) of this project is estimated as (+) 15.01%.
2	Benefits to economy	Economically backward areas of the region (South Rajasthan and North Gujarat) to be connected to main railway network of the country. Small scale industries along the route and employment to local youth will facilitate economic upliftment. Alternate route for freight traffic will help in faster and efficient movement of goods.
3	No. of population benefited	Approximately 10.45 lakh population will be benefited from the completion of this project.
4	Employment potential	Approximately 50000 man-days of temporary employment and 500 nos. permanent employment likely to be generated.
5	Cost of acquisition of facility on non-forest land wherever feasible	Not feasible
6	Loss of (a) Agriculture & (b) Animal husbandary production due to diversion of forest land	Nil
7	Cost of rehabilitating the displaced persons as different from compensatory amounts given for displacement	Nil
8	Cost of supply of free fuel wood to workers residing in or near forest area during the period of construction	No. of labour = 50 Cost of fuel per labour per day = Rs 25 Time period of construction = 2 years (= 730 days) Total cost of fuel = 25 x 50 x 730 = Rs 9.125 lakh

(VIKAS BOORA)
Deputy Chief Engineer (Const.)
North Western Railway, Udaipur

COST – BENEFIT ANALYSIS

Project Details

1	Short narrative of the proposal and project / scheme for which forest land is required	Gauge conversion project of Udaipur-Himmatnagar-Ahmedabad railway line from metre gauge to broad gauge.
2	Cost of Project	Rs. 829.74 Cr.
3	Justification for locating the project in forest area	As per techno-economic survey, shortest and technically feasible alignment has been chosen keeping in view minimum forest land, minimum private land, minimum rehabilitation, minimum effect to existing water tanks & dams, involving minimum effect & shifting of public utilities, etc.
4	Employment likely to be generated	Approximately 50000 temporary man-days and 500 nos. permanent employment likely to be generated.
5	Para-wise break-up of the land required	35.7823 hectares for railway track work.
6	Cost Benefit Ratio (CB Ratio)	**49.365 : 1**

(VIKAS BOORA)
Deputy Chief Engineer (Const.)
North Western Railway, Udaipur

Parameters to determine costs

S. No.	Parameters	Roads, Tr. Lines & Railway line
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	There is hardly any livelihood which is falling on the proposed railway alignment, but surrounding forest area people may have some fuel wood, minor forest loss from the harvest of these commodities. These may be taken as Rs 10,000.00 per hectare of land per year. The loss of wages will be negligible due to this railway line, because local people may get work opportunity due to construction and maintenance of Railway line. Hence effective loss only due to loss of fire wood and minor forest product for 50 years = Rs 10,000 x 35.7823 x 50 = Rs 17891150 (Say Rs 178.91 lakh)
2	Loss of animal husbandry productivity including loss of fodder	Productivity of animal husbandry will not be affected. Although, minor loss of fodder may occur for animals due to deforestation for railway line. This may be Rs 5000.00 per hectare per year. Hence effective loss due to loss of fodder for 50 years = Rs 5000 x 35.7823 x 50 = Rs 8945575 (Rs 89.46 lakh)
3	Cost of human resettlement	No human resettlement is involved in connection with this project in the 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	No such losses anticipated due to this project.
5	Environmental losses (soil erosion, effect on hydrological cycle, wild life habitat, microclimatic upsetting of ecological balance)	Environmental losses are quantified as follows: Total forest area proposed for diversion = 35.7823 hectares Environmental value of 1 hectare of forest land with density 1.0 for a period of 50 years is estimated as = 126.74 lakh Density of forest area to be diverted = 0.75 Value per hectare = 0.75 x Rs 126.74 lakh = Rs 95.055 lakh Environmental loss = 0.75 x Rs 126.74 lakh x 35.7823 = 3401.29 lakh
6	Suffering to ousters	There will be no ousters from the forest due to this project.
	Total loss (calculated for 50 years)	Rs 178.91 lakh + Rs 89.46 lakh + Rs 3401.29 lakh = Rs 3669.66 lakh

(VIKAS BOORA)
Deputy Chief Engineer (Const.)
North Western Railway, Udaipur

Monetary return of the project for 50 years

1) As per the estimate sanctioned for the project of Udaipur-Himmatnagar-Ahmedabad railway line gauge conversion on the basis of calculation of project cost with rate and return, per Km cost of project comes out to be Rs 3.95 crores.
2) The total earnings have been projected as Rs 3379.74 lakh per annum for first five years. The earning may be appreciated @8% per annum for next 45 years.

Therefore the monetary return of project for 50 years

= Rs 3379.74 lakh x 5 + Rs 3379.74 x 45 x 1.08

= Rs 181154.06 lakh

Cost benefit ratio = $\frac{\text{Monetary return of the project for 50 years}}{\text{Environmental loss for a period of 50 years}}$

$= \frac{181154.06}{3669.66}$

= 49.365 : 1

(VIKAS BOORA)
Deputy Chief Engineer (Const.)
North Western Railway, Udaipur