

CALCULATION FOR BENEFIT COST RATIO

Name of Scheme: Construction of link road Udhyanpur to Rai Sarwala Km 1st to Km 5th

Total Cost of Project/ Scheme	245.00 Lacs
Length of the Road	05.00 Kms
Population	4000 Souls
PCU's	129
Distance reduction	5.00 Kms
Saving in Vehicle Operation Cost.	VOC x Distance x PCU x 365

As per IRC norms and guidelines of May 1998.

Assuming the vehicle operating cost at Rs. 7.00/Km/PCU

The annual saving in VOC may be quantified as under

$$\frac{7 \times 5 \times 129 \times 365}{100000} = 16.47 \text{ lacs}$$

TRAVELING TIME SAVED

Population	4000 Souls
-------------------	-------------------

Assuming 10% of the population is engaged in taking commercial activities with average time reduction of 5 min/ km with probability of securing employment at 0.65 and the current wage rate at Rs. 500.00/ day, the proportionate saving in travel time shall be as under: -

$$\begin{aligned} \text{(a) Manday saved} &= 0.10 \text{ of population} \times \text{time} \times \text{time reduction} \\ &= \frac{0.10 \times 4000 \times 5 \times 365 \times 5}{60 \times 8} = 7604.16 \text{ days} \end{aligned}$$

$$\begin{aligned} \text{(b) Value of travel time saved} &= \frac{7604.16 \times 0.65 \times 500}{100000} = 24.71 \text{ lacs} \end{aligned}$$

$$\begin{aligned} \text{Benefits an account of saving of of Doda District} \\ &= 26.13 \times 5.00 = 130.65 \text{ lacs} \end{aligned}$$

$$\text{Total benefit of project} = 130.65 + 16.47 + 24.71 = 171.83 \text{ lacs}$$

Physical and Financial Phasing:

Year	Physical	Financial
1 st Year	30%	73.50 lacs
2 nd Year	40%	98.00 lacs
3 rd Year	30%	73.50 lacs
	Total	245.00 lacs


Benefits: - 171.83

Particular	1 st Year	2 nd Year	3 rd Year	4 th Year	Total
Capital cost	73.50	98.00	73.50	-	245.00
Benefits	51.54	68.73	51.54	171.81	-
Discount factor	0.87	0.756	0.658	2.73	-
Present Worth of Cost	63.94	74.08	48.36	-	186.38
Present Worth of Benefit	44.83	51.95	33.91	469.04	599.73

$$\text{BCR} = \frac{\text{Present Worth of Benefit}}{\text{Present Worth of cost}} = \frac{599.73}{186.38} = 3.21$$

BCR = 1:3.21 OK


Assistant Executive Engineer
P.W.D. (R&B) Sub-Division (Exst)
DODA


Executive Engineer
P.W.D. (R&B) Spl. Sub-Division
Doda

Name of Work: Construction of link road Udhyanpur to Rai Sarwala Km Ist to Km 5th


S.No	Vehicle Traffic	No. per day	Factor	PUC per day.
1	Cycle	60	0.50	30.00
2	Motor Cycle	30	0.50	15.00
3	Passenger Car/ Pick up	30	1.00	30.00
4	Tractor /L.C.V	10	1.50	15.00
5	Truck/ Buses	10	3	30.00
6	Truck Tailor	3	3	9.00
			Total PCU per day	129.00

Saving in Vehicle Operating Cost: -

The above figures are as per the survey conducted by the Department. The volume of the traffic has been converted into standard passenger cars and PCU with the help of conversion factor and estimated as above.



Asst. Executive Engineer,
Assistant Executive Engineer
P.W.D. (R&B) Sub Division,
Doda DODA



Executive Engineer
P.W.D. (R&B) Sub Division,
Doda Doda

FINANCIAL VIABILITY EXISTING LEVEL OF EARNAGE ESTIMATED BENEFITS SAVING PRODUCES OF DODA DISTRICT.

S.No	Commodity	Price for tones procedure	Prod. 000. Qtl.	% prod. for marketing surplus 000. Qtl.	Qty. of prod. for marketing	Add. Benefit 2% of Col.6	Total marketing Col. 6+7	Total earning (Rs. in lacs)
1	Rice	18050	300.00	60	18.00	3.60	183.60	3313.0
2	Maize	29050	450.00	60	270.00	5.40	275.40	8000.0
3	Wheat	10750	180.00	60	108.00	2.16	110.16	1184.0
4	Other cereal Millets	7000	12.50	50	6.25	0.125	6.375	44.62
5	Pulses	31100	35.00	50	17.50	0.35	17.85	555.00
6	Horticulture produces	15131	130.00	60	78.00	1.56	79.56	1203.0
7	Oil seeds	2300	10.20	80	8.16	0.163	8.323	191.00
8	Vegetable produce & Food crop	--	--	-	--	--	--	--
9	Fish	32000	0.25	100	0.25	0.005	0.255	8.16
10	Forest extracts	--	5070.0	80	4056.00	--	--	4056.0
11	Khadi & Village	--	2400.0	82	1968.00	--	--	1968.0
12	Raw silk	1000000	0.02	100	0.02	0.0004	0.0204	20.40
				Total(A)	20542.00			


Total length of road in Distt. Doda = 786.00 km - 'B'

Total earning on account of project = $\frac{A \times C}{B}$

$$= \frac{20542}{786}$$

$$= 26.13 \times 5.00 = 130.65 \text{ lacs}$$


Assistant Executive Engineer
P.W.D. (R&B) Sub-Division (Exst)
DODA


Executive Engineer,
P.W.D. (R&B) Spl. Sub-Division,
Doda