

HATHIADEH MEDIUM IRRIGATION PROJECT

TEHSIL-KISHANGANJ

DISTRICT-BARAN

COST-BENEFIT ANALYSIS

S.NO.	PARAMETERS	Rs. (In Lakh)
1	Estimation of cost of forest diversion (Including Construction Cost) as per Table B	34411.52
2	Estimating Benefits of forest diversion as per Table-C	499063.00
	Ratio of Benefit/Cost	14.50 ✓
<p>Note:- Therefore construction of Hathiadeh medium irrigation project is economically viable and socially beneficial.</p>		



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Water Resources Division III Baran

Table-B

HATHIADEH MEDIUM IRRIGATION PROJECT
TEHSIL-KISHANGANJ
DISTRICT-BARAN

Estimation of cost of forest diversion

S.No.	Parameters	Remarks	Amount (In Lakh)
1	Ecosystem services losses due to proposed forest diversion	N.P.V. amount to be disposed towards forest land diversion of 286.47 Ha. @ 9.5778 Lakh/Ha.	2743.75
2	Loss of animal husbandry productivity, including loss of fodder	10 % of N.P.V. cost i.e. 0.95778 Lakh/Ha. (10% of 9.5778) For 286.47 Ha.	274.37
3	Cost of Human Resettlement	As per R&R plan	3197.68
4	Loss of public facilities and administrative infrastructures (Roads, buildings, schools, dispensaries, electric lines, railway lines etc.) on forest land which would require forest land if these facilities were diverted due to the project	Cost of road for 3 Kms.	500.00
		cost of LT lines in 3 Kms.	500.00
		Cost of 1 no. of Primary School	15.00
		Cost of other public facilities and administrative offices	20.00
5	Possession value of forest land diverted	50% of N.P.V. amount to be disposed towards forest land of 286.47 Ha. @ 9.5778 Lakh/Ha.	823.12
6	Cost of suffering to oustees	150% of R&R Plan (1.5*3197.68)	4796.52
7	Habitat Fragmentation Cost	Cost due to Habitat fragmentation is pegged at 1.98 lakh/Ha. Forest land (286.47@ 1.98Lakh/Ha.)	1371.87
8	Compensatory afforestation and soil and moisture conservation cost	Compensatory Afforestation in Diverted Land of 286.50 Ha. @ 1.98 Lakh/Ha.	567.21
9	Construction Cost of Project		19602.00
		Total	34411.52

Lakh


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HATHIADEH MEDIUM IRRIGATION PROJECT

TEHSIL-KISHANGANJ

DISTRICT-BARAN

Estimation of benefit of forest diversion

S.No.	Parameters	Remarks	Amount (In Lakh)
1	Increase in Productivity attribute to the specific project	This project will provide irrigation facility in G.C.A. of 10091 Ha. And CCA 6885 Ha. of land Benefits after Introduction of Canal System For 100 Yrs.(As resevoir Life will be 100 yrs.) @ 4990.63 Lakh/annum (This is taken as per B.C. Ratio approved by agronomist at IMTI Kota)	499063.00
2	Benefits to Economy due to the specific project	1. Population about 90,000 of 45 Villages will be benefitted from this project.	
		2. Employment will be generated to landless people of 45 No. Villages in Command area of project.	
		3. Direct empolyment to labour during construction period of Tehsil-Kishanganj, District-Baran.	
3	No. of population benefitted due to specific project	Population about 90,000 of 45 Villages will be benefitted from this project of Tehsil-Kishanganj, District-Baran	
4	Economic benefits due to of Direct and Indirect Employment due to the project	Direct employment will be generated during construction period and Indirect employment in command area of project in 45 nos. of villages in tehsil-Kishanganj District-Baran	
5	Economic benefits due to Compensatory afforestation	The compensatory afforestation will develop new forest which will be helpful to Environment as well as animals	
		Total	499063.00
			Lakh



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Statement No. 2

Calculation for Hathlyadeh Irrigation Medium Project Tehsil Kishanganj
District Baran, B/C Ratio

Rs. In Lacs

BENEFIT COST RATIO		Rs. In Lacs		
CCA		Ha	With NPV	Without NPV
Canal Irrigation				
Cost of Head works		0.00	6885.00	6885.00
			6128.00	6128.00
			23253.00	19602.30
Annual Receipts				
Before Rehabilitation		Rs in lacs	1496.55	1496.55
After Canal Rehabilitation				
Net receipt (B-A)			4990.63	4990.63
			3494.08	3494.08
Project cost				
1 Capital cost		Rs in lacs		
2 Cost of land Dev. @ 2000/- per ha (20% of canal Irrigation Area)			23253.00	19602.30
(0.20x6128)				
Total cost		1225.60	24.51	24.51
			23277.51	19626.81
ANNUAL COST				
1 Interest @ 6.50% on the project cost including land)				
Development details Estimated cost of project			1513.03	1275.74
2 Depreciation of the project @ 2% of the total estimated				
estimated cost			465.06	392.05
3 O&M Expenses @ Rs 352 per ha (As per practice				
In the Deptt)			24.23	24.23
4 Maintenance cost @ 1.0% of head works				
Total Annual cost			232.77	196.27
BENEFIT COST RATIO			2235.09	1888.29
NET RECEIPTS (C)				
ANNUAL COST (E)			3494.08	3494.08
B.C RATIO (WITH NPV) / (WITHOUT NPV)			2235.09	1888.29
			1.56	1.85

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B.C. Ratio Hathly Deh

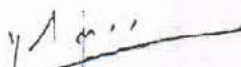
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Approved
संयुक्त निदेशक (सिंचाई), मध्य प्रदेश
सिंचाई प्रबन्धन एवं परीक्षण महाविभाग
दादाबाड़ी रोड, कोटा (राज.)

Statement No. 1
Calculation for Hathiyadeh Irrigation Medium Project Tehsil Kishanganj District
Baran, B/C Ratio

CA (ha) Before Rehabilitation 4922.00 After Rehabilitation 6885.00

S.no	Item	Amount (Rs. Lacs)	
1	2	3	4
	Gross Receipts		
1	Gross value of farm produce for grain	2431.17	6578.22
2	Dung receipts @3% of the fodder expenditure	109.40	197.35
	Total	2540.57	6775.56
	Expences		
1	Expenditure on seeds	174.72	240.34
2	Expenditure on Manures & Fertilizers seeds	95.19	200.96
3	Depreciation on implements @2.7% of the gross Value of farm produce	65.64	177.61
4	Share and cash rent @ 5% / 3% of the gross value of produce	121.56	197.35
5	Expenditure on hired bullock/Machinery and labour @ Rs 4500 Per ha.	221.49	309.83
6	Fodder expenditure @15%/ 10% of the gross value of produce	364.68	657.82
7	Land revenue @ Rs 15.00 per ha (As per State Revenue Rates)	0.74	1.03
	Total (B)	1044.02	1784.94
	Net receipt (Rs in lacs) = Total A - Total B	1496.55	4990.63


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Table no. 1

Calculation for B.C. ratio before Rehabilitation

Name of project :- Hathiyadeh Irrigation Medium Project Tehsil Kishanganj District Baran.
Existing cropping pattern

CCA (ha)

6885

S.No	Crop	Well/Tube Well Irrigated		Irrigated by canal		Unirrigated having crops		Unirrigated having no crops		Total	
		%CCA	Area (ha)	%CCA	Area (ha)	%CCA	Area (ha)	%CCA	Area (ha)	%CCA	Area (ha)
Kharif											
1	Bajra	0.00	0.00	0.00	0.00	4.93	100.00	0.00	0.00	4.93	100.00
2	Juwar	0.00	0.00	0.00	0.00	7.40	150.00	0.00	0.00	7.40	150.00
3	Soyabean	0.00	0.00	0.00	0.00	59.25	1200.00	0.00	0.00	59.25	1200.00
4	Paddy	0.00	0.00	0.00	0.00	29.62	600.00	0.00	0.00	29.62	600.00
Total		0.00	0.00	0.00	0.00	101.20	2050.00	0.00	0.00	101.20	2050.00
Rabi											
1	Wheat	17.79	1225.00	0.00	0.00	8.87	600.00	0.00	0.00	26.66	1825.00
2	Gram	2.90	200.00		0.00	6.66	50.00	0.00	0.00	9.56	250.00
3	Mustard	8.88	612.00		0.00	1.45	100.00	0.00	0.00	10.33	712.00
4	Coriander	1.45	100.00		0.00		0.00	0.00	0.00	1.45	100.00
5	Pulse	0.15	10.00		0.00		750.00	0.00	0.00	0.15	760.00
Total		31.17	2147.00	0.00	0.00	16.98	1500.00	0.00	0.00	48.15	3647.00
G-Total		31.17	2147.00	0.00	0.00	118.18	3550.00	0.00	0.00	149.35	5697.00

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B.C. Ratio Hathiya Deh

B.C. Ratio Hathiya Deh 04.04.16

Calculation for B.C. ratio before Rehabilitation

Name of project :- Hathiyadeh Irrigation Medium Project Tehsil Kshananani District Batan.

Estimate value of produce & cost of inputs (Irrigated & Un Irrigated Areas)

CCdA (ba)

Value in Lacs

6285

Value in Lacs														
S.No	Crop	Well/Tube Well Irrigated	Canal Area (ha)	Unirrigated crops (ha)	Unirrigated drowing no crops	Total	Av. Yield (Qq/Ha)	Total Yield (Qq)	Rate Rs/q	Total Value of Produce	Rate of seeds	Value of seeds	Rate of fertilizers	Value of fertilizers
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Kharif														
	1 Bajra	0.00	0.00	242.00	0.00	242.00	5.00	1210.00	1500.00	18.15	400.00	0.96		0.00
	2 Juwar	0.00	0.00	363.00	0.00	363.00	5.00	1815.00	200.00	36.30	400.00	1.45		0.00
	3 Soyabean	0.00	0.00	2905.00	0.00	2905.00	0.00	34860.00		1352.56	2000.00	58.10		0.00
	4 Paddy	0.00	0.00	1392.00	0.00	1392.00	0.00	69132.80	0.00	981.40	0.00	52.61		0.00
	Total	0.00	0.00	4902.00	0.00	4902.00		106997.80		2388.41		113.12	0.00	0.00
Rabi														
	1 Wheat	1225.00		600.00	0.00	1825.00	23.51	42905.75	1604.00	29.27	2500.00	45.63	3500.00	63.88
	2 Gram	200.00		50.00	0.00	250.00	8.86	2215.00	4100.00	10.25	4000.00	10.00	2500.00	6.29
	3 Mustard	612.00		100.00	0.00	712.00	11.44	8145.28	3480.00	2.47	400.00	2.85	3000.00	21.36
	4 Coriander	100.00			0.00	100.00	4.18	418.00	5900.00	0.59	3000.00	3.00	3500.00	3.50
	5 Pulse	10.00			0.00	10.00	5.00	50.00	1876.00	0.18	1300.00	0.13	2000.00	0.26
	Total	2147.00	0.00	750.00	0.00	2897.00		53734.03		42.76		61.60		55.16

Note :- Cost of fertilizers is not included in Kharif crops as farmers are not using fertilizers due to un certainty of rains.	Total value of produce	2431.17
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Table no. 3

Proped cropping pattern

Name of project :- Hathiyadeh Irrigation Medium Project Tehsil Kishanganj District Baran.

CCA (ha)

6885

S.No	Crop	Well/Tube Well Irrigated		Irrigated by canal		Unirrigated having crops		Unirrigated having no crops		Total	
		%CCA	Area (ha)	%CCA	Area (ha)	%CCA	Area (ha)	%CCA	Area (ha)	%CCA	Area (ha)
Kharif											
1	Bajra	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	Juwar	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	Soyabean	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	Paddy	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rabi											
1	Wheat	0.00	0.00	18.50	1274.00	0.00	0.00	0.00	0.00	18.50	1274.00
2	Gram	0.00	0.00	9.25	637.00	0.00	0.00	0.00	0.00	9.25	637.00
3	Mustard	0.00	0.00	57.74	3976.00	0.00	0.00	0.00	0.00	57.74	3976.00
4	Coriander	0.00	0.00	8.17	563.00	0.00	0.00	0.00	0.00	8.17	563.00
5	Pulse	0.00	0.00	0.18	13.00	0.00	0.00	0.00	0.00	0.18	13.00
6	Opium Poppy	0.00	0.00	0.58	40.00	0.00	0.00	0.00	0.00	0.58	40.00
Total		0.00	0.00	74.05	6503.00	0.00	0.00	0.00	0.00	74.05	6503.00
G-Total		0.00	0.00	74.05	6503.00	0.00	0.00	0.00	0.00	74.05	6503.00

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Calculation for B.C. ratio After Rehabilitation

Name of project :- Hathiyadeh Irrigation Medium Project Tehsil Kishanganj District Baran.

Estimate value of produce & cost of inputs (Irrigated Area)

CCA (ha)

6885

Value in lacs

S.No	Crop	Well/Tube Well Irrigated	Canal Irrigated	Un Irr. Area having crops (ha)	Un Irr. Area having no crops	Total	AV. Yield (Qt/Ha)	Total Yield (Qt)	Rate Rs/q	Total Value of Produce (Rs in lacs)	Rate of seeds	Value of seeds	Rate of fertilizers	Value of fertilizers
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Kharif														
1	Bajra	0.00		63.00	0.00	63.00	5.00	315.00	2000.00	6.30	400.00	0.25		0.00
2	Soyabean	0.00		1534.00	0.00	1934.00	12.00	23208.00	3880.00	900.47	2000.00	38.68		0.00
3	Paddy	0.00		2905.00	0.00	2905.00	49.65	144233.25	2000.00	2884.67	3780.00	109.81		0.00
Total		0.00	0.00	4902.00	0.00	4902.00		167756.25		3791.44	6180	148.74	0.00	0.00
Rabi														
1	Wheat	0.00	1274.00	0.00	0.00	1274.00	23.51	29951.74	1604.00	480.43	2500.00	31.85	3500.00	44.59
2	Gram	0.00	637.00	0.00	0.00	637.00	8.86	5643.82	4100.00	231.40	4000.00	25.48	2500.00	15.94
3	Mustard	0.00	3976.00	0.00	0.00	3976.00	11.44	45485.44	3480.00	1582.89	400.00	15.90	3000.00	19.70
4	Coriander	0.00	563.00	0.00	0.00	563.00	4.18	2353.34	5900.00	138.85	3000.00	16.89	3500.00	19.71
5	Pulse	0.00	13.00	0.00	0.00	13.00	5.00	65.00	1876.00	1.22	1500.00	0.20	2000.00	0.26
6	Opium Poppy	0.00	40.00	0.00	0.00	40.00	4.40	176.00	20000.00	352.00	3200.00	1.28	3000.00	1.20
Total		0.00	6503.00	0.00	0.00	6503.00		83675.34		2786.78	14600	91.60	17500.00	200.95
G-Total			6503.00			4902.00		11405.00		6578.22		240.34		200.96

Note :- Cost of fertilizers is not included in Kharif crops as farmers are not using fertilizers due to un certainty of rains.

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