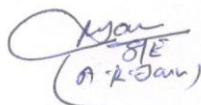




## ***BARODA TANK SCHEME***

### **COST BENEFIT ANALYSIS**

Total cost due to forest land (Rs. Lakh)	-	268.81 Lakhs
Total benefit due to project Rs.	-	298.27 Lakhs
Benefit Ratio of project	-	1.55

  
(A.K. Choubey)

  
(Ankur Sharma)  
**Sub Divisional Officer**  
Water Resources Sub Dn. NO.3  
Garhakota, Sagar (M.P.)

  
(A.K. Choubey)  
**Executive Engineer**  
Water Resources Dn. No. 1  
Sagar (M.P.)

Cost Benefit Analysis for  
***BARODA TANK SCHEME***

On the basis of Guidelines for forest land diversion 2017

**Table-A Cases under which a cost benefit analysis for forest diversion are required**

No	Nature of proposal	Applicable/not applicable	Remarks
1	All categories of proposals involving forest land up to 20 hectares in plains and up to 5 hectare in hills	Not applicable	
2	Proposal for defence installation purposes and oil prospecting (prospecting only)	Not applicable	
3	Habitation, establishment of industrial units, tourist lodges complex and other building construction.	Not applicable	
4	All other proposals involving forest land more than 20 hectares in plains and more than 5 hectares in hills including roads, transmission lines, minor, medium and major irrigation projects, hydro projects, mining activity railway lines, location specific installations like micro-wave station, auto repeater centres, TV towers etc.	Applicable	These are cases where a cost benefit analysis is necessary to determine when diverting the forest land to non-forest use of overall public interest. The Baroda Tank Scheme falls under this category.



**Table-B Estimation of cost of forest diversion**

S.No.	Parameters	Remarks
1	Ecosystem services losses due to proposed forest diversion.	Ecosystem services due to diversion of forest land suggested by the Central Powered Committee as per the forest classification report of proposed Baroda Tank Scheme is Rs. 6.26 Lakh/Ha. Cost of Land : $21.06 \times 6.26 = 131.84$ Lakhs
2	Loss of animal husbandry productivity including cost of fodder	As per the cost benefit guideline i.e. 10% of N.P.V. 0.626 Lakh Per. Ha. $21.06 \times 0.626 = 13.18$ Lakhs
3	Cost of human resettlement	There is human settlement due to proposed Baroda Tank Scheme, hence cost of Human resettlement is Nil Lakhs
4	Loss of public facilities and administrative infrastructure (Roads, building, schools, dispensaries, electric lines, railways etc.) on forest land, which would require forest land if these facilities were diverted due to the project.	There is no loss of public facilities and administrative infrastructures of forest land due to construction of Baroda Tank Scheme, no cost has been added on this account.
5	Possession value of forest land diverted	The possession value of forest land diverted is taken 30% of the N.P.V. due to loss of forest i.e. 1.878 Lakh/Ha. $21.06 \times 1.878 = 39.55$ Lakhs.
6	Cost of suffering to oustees	Not applicable
7	Habitat Fragmentation Cost	Forest land is being acquired for construction of dam, submergence & Spill channel of Baroda Tank Scheme. There is no amount is taken under this account. <i>No habitat fragmentation being minor scheme.</i>
8	Compensatory afforestation and soil & moisture conservation cost	The cost @ Rs. 4.00 Lakh per Ha. is taken for compensatory afforestation and soil moistures conservation, Hence amount will be: $21.06 \times 4.00 = \text{Rs. } 84.24$ Lakhs.
9	Total cost due to forest land diversion	Total cost due to forest land diversion for Baroda Tank Scheme will be: $= 131.84 + 13.18 + 39.55 + 84.24$ Lakhs. $= \text{Rs. } 268.81$ Lakhs.



**Table-C Existing guidelines for estimating benefits of forest diversion in CBA**

S.No.	Parameters	Remarks
1	Increase in Productively attribute to the specific project	The crop production benefit due to Baroda Tank Scheme will be Rs. 298.27 Lakh <sup>per year</sup> in designed life of 100 years & water level will <del>be</del> increase economy growth of the project. Project also reserves the water for Drinking purpose of Baroda village & adjacent villages.
2	Benefits to economy due to the specific project	Baroda Tank Scheme will trigger economy development and also influence with irrigation facility to a land of 500 Ha. in the surrounding area. Irrigation is proposed by pressurized pipe system.
3	No. of population benefitted due to specific project	Project is located in backward area of the village. After completion of project 384 cultivators will be benefitted and water level will be increased in surrounding area. This project will also facilitate drinking water supply to Baroda village & adjacent villages.
4	Economic benefits due to of direct and indirect employment due to the project	The project will provide direct employment for approximate 4500 people (24 Month) during construction period.
5	Economic benefits due to compensatory afforestation	An economic benefit due to compensatory afforestation has been considered as per the benefit of C.A. guidelines of ministry for N.P.V. estimation.



# BENEFIT COST RATIO

Name of Project

BARODA TANK SCHEME

District

: SAGAR

Project Cost

: Rs. 1742.51 Lakhs

Irrigation

: Rabi - 500 Ha.

Cost per Ha.- Rs. 3,48,500

## PRE-DEVELOPMENT

S.No.	Name of Group	Area under Cultivation in Hac.	Cost of Cultivation per hectare	Total cost of Cultivation in Rs. Lakhs	Yield per Ha. Quintal	Total Yield Quintal	Rate per Quintal	Total Value of Produce in Rs. Laks
1	2	3	4	5	6	7	8	9
1	Wheat (ord.)	160	8000	7.20	10	1600	1735	27.76
2	Gram	45	7500	2.03	10	450	5300	23.85
	<b>Total :-</b>	<b>205</b>		<b>9.23</b>				<b>51.61</b>
			<b>Col (9-5) Total (A)=(51.61 -9.23)</b>					<b>42.38</b>

## POST-DEVELOPMENT


S.No.	Name of Group	Area under Cultivation in Hac.	Cost of Cultivation per hectare	Total cost of Cultivation in Rs. Lakhs	Yield per Ha. Quintal	Total Yield Quintal	Rate per Quintal	Total Value of Produce in Rs. Laks
1	2	3	4	5	6	7	8	9
1	Wheat (ord.)	250	8000	20.00	28	7000	1735	121.45
2	Wheat (HVY)	100	9000	9.00	40	4000	1735	69.40
3	Gram	150	8000	12.00	24	3600	5300	190.80
	<b>Total :-</b>	<b>500</b>		<b>41.00</b>				<b>381.65</b>
								<b>381.65</b>
			<b>Col (9-5) Total (B)=(381.65 -41.00) =</b>					<b>340.65</b>

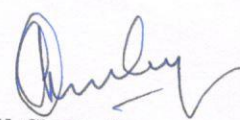
*In crease in Productivity attribute to specific Area - 25 340.65 - 42.38 = 298.27*

1	Project Cost					-	1742.51	Lakhs
2	Project Cost 10% interest					-	174.25	Lakh
3	Depreciation @ 1% on (1) above					-	17.43	Lakh
4	Administrative expenses as per Ha. (Designed irrigation x 100) i.e. 500 x 100					-	0.50	Lakh
	<b>(c) Total (2) + (3) + (4)</b>					-	<b>192.18</b>	Lakh
5	B.C. Ratio = (B-A)/C = (340.65 - 42.38/192.18)					-	<b>1.55</b>	%

Crop	Yield Before Qtls/Ha.	Yield After Qtls/Ha.	Cost Befor Qtls/Ha.	Cost After Cultivation	Cost /Cultivation
Soyabeen	10	12	4000	0	2800
Gram	8	24	4500	8000	5300
Ord Wheat	10	28	6000	8000	1735
HVY	-	40	-	9000	1735

  
Sub Engineer

  
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Sub Divisional Officer  
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