

# **Model Scheme of Water harvesting by Women Groups**

**Empowerment of Women through providing employment of women by constructing Water harvesting structures - Construction of Check dam with Earthen Bund**

**1. Project Goal: Poverty reduction, Employment and Empowerment of Women through Construction of Water Harvesting Structures.**

**2. Project Objective**

**The main project objectives are as under**

- 🌱 Creating wage employment for women by constructing rainwater-harvesting structures.**
- 🌱 Helping women self reliant by enabling them to manage the construction of the rainwater harvesting structure (Tank) and collection of water rates for maintaining the same.**
- 🌱 Providing drinking water to about 500 local population there by reducing the drudgery of women for bringing the same for long distances on their heads.**
- 🌱 Reducing salinity in the proposed project areas**

**3. Scope of the Activities**

This is a new check dam with earthen bund --- village. The main activities of construction for the above project are as under:

**3.1 Physical Activities:**

<b>🌱 Earth Work in Foundation</b>	<b>246.6 Cubic Meters( CUM)</b>
<b>🌱 Earth work in Earthen Bund</b>	<b>1200 (CUM)</b>
<b>🌱 CC 1:4:8</b>	<b>56.52 CUM</b>
<b>🌱 UCR (1:6) Rubble masonry</b>	<b>296.80 (CUM)</b>
<b>🌱 CC 1:2:4</b>	<b>15.24 CUM</b>
<b>🌱 Cement Plaster( 1:3)</b>	<b>270.38 Sq.M</b>
<b>🌱 Dry Stone pitching</b>	<b>160 Sq.M</b>

### 3.2 Total Cost of the Project

#### A. Activity wise and Unit wise Cost of the Project

Sr. No	Activity	UNIT	Rate (Rs)	Physical	Financial (Rs)
1	Earth work in Foundation	CUM	31 & 62	246.6	10629.9
2	Earth work in Earthen bund 400 m lead	Cum	33	1200	39600
3	CC work for 1:4:8	CUM	1150	56.52	3504.24
4	UCR (1:6) Rubble masonry	CUM	700	296.8	207760
5	CC 1:2:4	CUM	2100	15.24	32004
6	Cement Plastering (1:3)	Sq.M	57	270.38	15411.60
7	Dry Stone pitching	Sq.M	32	160	5120
5	Contingences and work charge establishment	Need not be considered			
	Total				314029.74

B.	Administration cost @ 10 % of the project cost	31403
C	Community organization forming SHGs etc @ 2% of project cost	6281
D	Training programmes @ 2 % of project cost	6281
	Total Administrative expenses ( B+C+D)	43965
		357995
		say
	<b>Total expenditure of the project</b>	<b>358000</b>

### 3.3 Project Duration

The project is expected to complete in about 6 months time. The activity wise phasing and the fund requirement is given below

## Activity wise phasing and fund requirement

Check Dam and Earthen Bund					
Sr. No	Activity	Time (Months)	Physical	Amount (Rs lakhs)	Administrative Expenses
1	Earth work in Foundation	3	246.6	10629.9	1488
2	Earth work in Earthen bund 400 m lead	3-6	1200	39600	5544
3	CC work for 1:4:8	3	56.52	3504.24	491
4	UCR (1:6) Rubble masonry	3	296.8	207760	29086
5	CC 1:2:4	3	15.24	32004	4481
6	Cement Plastering(1:3)	6-Mar	270.38	15411.6	2158
7	Dry Stone pitching	6-Mar	160	5120	717
Total				314029.7	43965

### 3.4 Per Woman Cost of the project

**The estimation of women employed during construction and after construction is given below**

Project 1- Check dam and Earthen Bund at --- village

**Employment during Construction period**

Women days 556

amount@70/day 38920

**No of women for 180 days 3**

**Sustainable employment**

Tank Area

300\*300\*1.5(avg.Ht) 135000

As the catchment area is only 3.75 sq.km, Considering the maximum storage of 50% of the yield, the total storage that can be stored is only 67500

Total storage 67500

Seepage and evaporation 40% 27000

drinking water for about 500 people nearby 10950

Balance of water available for irrigation 29550

2 irrigation @ 7.5 cms per irrigation

command area (ha)	19.7
Gross Cropped area (ha)	
<b>Sustainable employment per no of women during agriculture season( @ one women per ac per 60 days)</b>	<b>49</b>
Wage rate	70
Total amount during the season	205800
<b>Total No of women employed</b>	<b>52</b>

**Thus the cost per women of the project would be  $358000/52=$  Rs 6884 say 6880**

i.e. an amount of Rs 6880 per women invested would generate work for 3 women for 6 months during construction and 49 women during the agriculture season on sustainable basis with a total wage bill of Rs 2.45 lakhs. This is a considerable amount in the village context and very useful contribution by women to their family and the society at large and initiate women empowerment as they also contribute to the family in economic terms.

### **3.5 The economic indicators of the project are as under:**

<b>🌱 An incremental production to the extent of Rs 0.92 lakhs @ 4670 per ha</b>	
<b>🌱 Net Present Cost</b>	<b>Rs 6.8 lakhs</b>
<b>🌱 Net Present Benefit</b>	<b>Rs 9.5 lakhs</b>
<b>🌱 Net Present worth</b>	<b>Rs 2.7lakhs</b>
<b>🌱 BCR</b>	<b>1.4</b>
<b>🌱 IRR</b>	<b>30.39%</b>
<b>🌱 IRR at 5% higher cost and 5 % less income is</b>	<b>25.52%</b>

As seen from the above the IRR is more than 15 % and the BCR is more than 1. Even the sensitivity analysis which is calculated by increasing cost by 5 % and reducing the income by 5%, the IRR is more than 15 %. This shows that the project is economically viable and can be supported.

#### **4. Deliverables and expected outputs of the project**

##### **The benefits of the projects are briefly given below**

- The drinking water problems of the village would be reduced to a large extent to a population of about 500 people.
- The remaining water will be used for irrigation for 19.7 hectares. The SHG will get an amount of Rs 1773 per year @ Rs 90 / ha for maintenance of the project on a sustainable basis. In addition the SHG may get additional amount if they provide water in the Rabi season, which is not counted as the local people may decide to use remaining water for irrigation or for the environmental sustainability.
- About 3 women for 6 months during the construction period and 53 women during Kharif season get employment and earn about 2100 per month, which is a substantial amount in the village. This will motivate the women to get more active in the village and bring a social change in the village.
- The Check dam with Earthen Bund is expected to recharge the local groundwater body. The NGO may set up a few observation wells to quantify the recharge and estimate new wells that can be constructed or partly recharging the old wells. This will provide additional employment and additional wealth in the village.
- The recharging water will improve the quality of groundwater, which is hitherto highly saline and not fit for drinking.
- Reduction in the migration of population for employment to nearby town.
- Potential for Fisheries development in the tank during the monsoon season.
- The environmental impact is very important aspect of the benefits. The water in the tank will help in increasing the moisture content of soil and increase the greenery of the surroundings. The water will be used for animals, birds etc.
- **The above benefits of ground water recharge, improvement of quality of ground water, reduction of salinity, fisheries development and the total environmental impact in the area can not be quantified precisely. However, these can be considered at about 30 % of the net incremental benefits, accrued to the project after completion.**

#### **5.0 Schedule of Fund Release**

**Once the project is sanctioned, about 50% of the cost of the project estimated for the first quarter is released on advance**

**basis and subsequently, the amount will be reimbursed as and when the NGO will submit the expenditure statement and progress of work in the prescribed proforma.**

## **6.0 Monitoring**

The Department will monitor on monthly basis or as and when it is required especially if big amount of reimbursement is claimed.

The main monitoring plan is as under:

Desk monitoring

- The expenditure statement and the progress of physical achievement will be examined and both will be compared.

Field monitoring

- The expenditure and progress statements will be compared with the actual progress of work at the field.
- The quality of work will be examined
- The monitoring team will discuss with the local people, farmers, and women to ascertain the proper progress of the scheme and if any difficulties are encountered during the implementation have the project.
- The co-ordination of the different Govt agencies Vis-a -Vis the local implementing Group and the local panchayat will also be discussed and suitable suggestions will be made to take up in high power committee.

## **7. Justification for the project**

This project of constructing the "Check dam and Earthen Bund" is not a simple construction of tank, but to be considered as under the over all "Women and Water "concept which is very unique in Gujarat. This project is expected to not only generate employment for women who are largely effected due to earth quake and inherent salinity of the area, they are being involved at construction stage, maintenance and subsequent control of the project by collecting a nominal fee at the rate of Rs 90 per ha from the farmers who use the water for irrigating their fields. This will also include the Women Group members as the funds will go to the Group itself. This will be adequate to maintain the project for its continued sustainability of the project. In addition, as the women constitute as groups (Preferably as SHGs),

they can be involved in other social and economic activities like children's education, health and non farm activities there by creating a social awareness among women for upliftment.

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Annexure I: Plan and Detailed Estimates