

# Drinking Water Model 2

Rural Drinking Water Project with the construction check dam near the village and dig a Bore well on the downstream side of the check dam and repair the existing distribution system and cistern and plantation near the check dam

Lecture Notes  
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## ***Introduction***

\*NGO located at Dhrol in Jamnagar District. The \*NGO is involved in various Rural Development activities in different poverty alleviation programmes in and around Jamnagar district. They intend to take up various drinking water demonstration projects in Bhensdad village of Jamnagar district. The total population of the village is about 1532. The NGO proposes to develop an integrated drinking water programme in the village which would support the whole village for the next 10 years and also be a good demonstration project for drinking water in the area. In addition, the NGO also proposes to provide soak pits and plantation in the area. The details are given below

## ***Proposal***

The NGO proposes to construct a check dam near the village and dig a well on the downstream side of the check dam and repair the existing distribution system and cistern to ensure that no drinking water problem would arise in the area for the next 10 years

## **Water Demand and Availability:**

The present population of the settlement is of the order of 1532(2001 census). The NGO has considered an average growth rate of about 2 % per year over the next 15 years and estimated a population of about 2062 at the end of year 2015, which is acceptable. Considering about 70 lpcd, the total requirement of water is in the order of about 158774 liters per day including water requirement for animals. The design of the system is based on the total population and the water requirement. This may be accepted.

## **Construction of Check Dam**

The NGO proposes to construct a check dam with a waste weir length of 50 m and length of earthen bund on right side of 350 m and left side of 750 m. The maximum height of the check dam is of about 3.5 m from foundation. The catchment of the area of the dam is about 14 sq.km with a yield of about 0.6 mcm. However, the capacity of the dam is only 0.09 mcm, which ensures a continuous supply and likely hood of filling the dam two or three times. The NGO proposes an estimate of Rs 1078100. The cost estimates are reasonable.

## **Construction of Bore well pump house and pump set.**

The NGO proposes to construct a Bore well down stream side of the check dam and provide pump house and submersible pump set of 5HP. The proposal is in order. The cost as proposed is acceptable. However, it is suggested that the well may be drilled at one side of the tank and provide enough security in case of flash floods.

## **Repair of existing rising main and distribution system and cistern**

The NGO proposes to repair the existing rising main, distribution system and cistern. The cost of the same is in order. However, repairing the existing the system is no solution for the eternal drinking water problem. The people should own the system and continue to maintain, with out external help. The NGO may look into the reasons for its disuse and bad maintenance and see that the people contribute on monthly basis for its future maintenance. People may contribute about 20% of the cost as they have not taken care of the existing system.

## **Construction of new stand posts, repair of existing stand posts and animal trough:**

The NGO's proposal of the above is reasonable and is acceptable.

## **Plantation:**

The NGO proposes to plant about 100 plants in around the check dam. It is in order. The cost proposed may be accepted.

## **Operation and Maintenance:**

It is easy to construct any structure but is very difficult to maintain unless the people are involved. The people who would be benefited should be involved in operation and maintenance of the project. The people should contribute at least 10 % of the cost of the project in the beginning and should pay monthly a fixed amount for operation and maintenance of the structures and the daily operation of pump set.

## **Cost of the Project**

As discussed and indicated above, the following project cost is recommended.

<b>Sr.No</b>	<b>Details</b>	<b>Amount recommended (Rs)</b>	<b>People's contribution (%)</b>	<b>Amount (Rs)</b>	<b>Balance (Rs)</b>
<b>A</b>	<b>Water Supply</b>				
1	Construction of check dam	1078100	20	215620	862480
2	Construction of well	70800	10	7080	63720
3	Pump house	30000	10	3000	27000
4	submersible pump	25000	10	2500	22500
5	Repair of pipe line	14000	20	2800	11200
6	Repair of G.L Cistern	16400	20	3280	13120
7	Construction and repair of Stand post	31200	10	3120	28080
8	Construction of animal trough	12300	10	1230	11070
10	Repair of existing distribution system	25000	20	5000	20000
<b>B</b>	<b>Plantation</b>	12500	10	1250	11250
	<b>Sub Total</b>	<b>1315300</b>		244880	1070420
	Contingencies@ 3%	39459		7346.4	32112.6
	<b>Total cost</b>	<b>1354759</b>		<b>252226</b>	<b>1102533</b>

## **Peoples' Participation**

The success of the scheme depends mainly on the people's participation especially after the construction of the various activities. The maintenance of the structures constructed is one of the major problems, as people do not own the structures. As such, the NGO should convene a meeting of the stake holders and insist that they should pay for maintenance at the rate of Rs 15 to 20 per family per month and collect and keep the same in the Pani Committee specially formed under this programme. The money can be utilized for repairs of the structures, pump operation and the balance can be utilized for any community work they deem fit. There should be one Pani Committee per village and sub or mohalla committees to look after the activities in their own areas. The members should meet at least once in a month and collect the money and explain the expenditure to the committee members for transparency of the activities.

### ***Disbursement of funds and Monitoring***

The NGO should complete the project in about 6 month's time. The work may be divided into 4 phases. The NGO may conduct monitoring study at different phases or as and when they release funds, but a quarterly monitoring study is necessary to see that the projects are progressing satisfactorily.

### ***Demonstration effect***

The purpose of this programme is to show how a drinking water programme can effectively solve the drinking water needs of the community. The demonstrative effect would be on the local villagers as well as on the people from nearby villages. To achieve that, a detailed board should be displayed at the site regarding the project with details in Gujarati and English language. The NGO may collect people in the village and nearby village and explain briefly the benefits of the project. The local Pani Committee members may be requested to give the details to the gathering regarding the methodology followed by them for the sustainability of the scheme.