

Drinking Water Model 3

Rural Drinking Water Project with the construction check dam near the village and repair the existing tank and allow the tank water to recharge the existing dug well, provide water for washing clothes

Lecture Notes
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Introduction

*NGO is a voluntary agency located at Mehsana, Mehsana District. The *NGO is involved in various Rural Development activities in different poverty alleviation programmes in and around Mehsana district. They intend to take up various drinking water demonstration projects in * village of Mehsana district which is about 7 km from Mehsana on the road side. The total population of the village is about 875. 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.

Proposal

The NGO proposes to construct a check dam near the village and repair the existing tank and allow the tank water to recharge the existing dug well, provide water for washing clothes. In addition, the NGO would also strengthen the existing bore wells for provide drinking water and also roof water harvesting structures on the school building for the purpose of providing water to the school students and the people in the nearby area. The details are given below

Water Demand and Availability:

The present population of the settlement is of the order of 875. Considering an average population growth of about 2% per year, the population would be in the order of about 1067 by next 10 year. Considering about 70 lpcd, the total requirement of water is in the order of about 75000 liters per day including cattle requirement. The existing tank has a capacity of 50000 liters and an old tank with a capacity of about 20000 liters is under repairs. If the tank is repaired and both are put to use, the village drinking water requirement would be met for the next 10 years.

Deepening and Renovation of Tank including babool cutting

The NGO proposes to renovate and widen the existing village tank with the dimensions of 250*250*6. The total excavation is in the order of 375000 cum. The cost of the excavation comes to about Rs 93750. The rate varies from Rs 10 to 40 per cum. Even though the rates are reasonable, 6 m deepening is some what difficult to achieve. Only 3 m deepening is recommended for a cost of Rs 46875.

NGO proposes an amount of Rs 14566 for Babool cutting. This may be accepted.

Repair of intake of lake and construction of spillway.

The NGO proposes to repair the intake and approach channel and also construct a spill way for Rs 125830. This is acceptable.

Construction of Check Dam

The NGO proposes to construct a Check Dam just above the village tank with a pipe to release excess water near by Khet Talavadi. If both the check dam and khet talavadi and village tank are filled, there will be good recharge to the aquifers and provide water to the drinking water bore in the village. The proposal of Rs 302700 may be accepted.

Recharging the aquifers

There is a proposal to construct a well intake, repair of old well for a total cost of Rs 104489 which is acceptable.

Repair of Dhobighat, Cattle trap:

There is a proposal of repair of Dhobi ghat; cattle trap etc for Rs 9740 which is acceptable.

Repair and Strengthening of Over Head Tank:

An Over head tank of about 20000 liters is not under use and is under repair. The NGO proposes to repair and use it for washing clothes, and for providing drinking water for animals. The proposed cost of Rs 79400 is acceptable. However, a system has to be developed for pumping water to the tank. The people should contribute for the cost of pumping before taking up this task. For the present, the existing well may be fitted with drawing pulleys on four sides so that the water stored in the well may be used for washing cloths and for animal drinking purpose.

Roof Water Harvesting.

A roof water harvesting structure is proposed in the school building. The cost of the same with gutters, under ground tank etc is Rs 100560. The same is accepted. The tank may be fitted with a hand pump so that the students may use the water as and when required.

Maintenance of the existing bore well:

The present bore well is not providing adequate water for drinking to the villagers. The construction of the proposed structures would ease pressure on the present bore well. However, there is a need for increasing the HP of the pump set and also lowering the pump at lower levels. This may be considered by the local water committee.

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.

Sr.No	Details	Amount (Rs)	Peoples Contribution (Rs) @ 10 % of the cost	Balance (Rs)
1	Deepening of lake including bubool tree cutting	61441	6144	55297
2	Construction of check dam	302700	30270	272430
3	Well in lake for recharging and pipe	51821	5182	46639
4	Repairing of old well	52668	5267	47401
5	Repair of Dhobi hat, Cattle trap	9740	974	8766
6	Repair of intake of lake	18500	1850	16650
7	Construction of spillway for the lake	107330	10733	96597
8	Repair and strengthening of over head water tank	79400	7940	71460
9	Roof water harvesting in school including underground tank	100560	10056	90504
	Sub Total	784160	78416	705744
	contingencies@ 3%	235248	23525	211723
	Grand Total	1019408	101941	917467

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.