



COMMUNITY PARTICIPATION IN O & M OF RURAL WATER SUPPLY SCHEMES – A CASE STUDY IN BIKANER DISTRICT IN WESTERN RAJASTHAN

Dr. Jyotirmoy Sarma

Abstract: Community participation in operation and maintenance of rural water supply schemes is the need of the day. To achieve this, training on O &M needs to be imparted to villagers along with awareness generation on safe water use and hygiene practice. It has been found that sincere and sustained effort for a long duration needs to be made to achieve successful participation of villagers in O & M of rural water supply schemes.

Index Terms - Community participation, O & M, Sanitary Diggi, rural water supply scheme

1. INTRODUCTION AND CONTEXT:

In India, different state Governments have constructed many rural water supply schemes to supply clean drinking water to rural population. Also, it has been planned to construct more water supply schemes in near future. While capital cost for the schemes are made available by Governments, it becomes difficult to operate and maintain the schemes in a sustainable manner. This is due to huge fund and resource requirement on a continuous basis. Therefore, community participation in operation and maintenance of the schemes seems essential. It is imperative that the schemes are maintained by villagers and operation and maintenance cost is fully borne by villagers themselves.

2. THE CASE STUDY:

A project was taken up that involved demonstration of O & M for 100 rural water supply schemes to villagers in Bikaner district of western Rajasthan. The 100 villages covered in the project were located in Khajuwala and Pugal Tehsil of Bikaner district. The main objective of the project was to involve villagers in regular operation and maintenance of the rural water supply schemes. The project involved demonstration of operation and maintenance of the water supply schemes to the villages or beneficiaries so that the O & M works can be done by villagers by themselves later on. The project also included awareness generation on safe water use and hygiene practices in the villages covered in the project.

Each of the rural water supply schemes covered under the project is called Sanitary Diggi. These are small rural water supply schemes constructed by PHED, Govt. of Rajasthan in villages established by Command Area Development Authority of Govt. of Rajasthan in the command areas of India Gandhi Irrigation Canal network. One sanitary diggi can serve about 100 to 200 households. The source of water of such schemes is raw water flowing in Irrigation canal network. Raw water from nearby irrigation water course is stored in two large circular sedimentation tanks of about 30m diameter and 4 meter depth. Raw water from the sedimentation tanks flows by gravity to a circular slow sand filter unit of 6 meter diameter. After filtration, treated water gets collected in a circular clear water tank located nearby. Clear water tank is fitted with ropes and pulleys. From the clear water tank, villagers collect water for domestic consumption. The entire water supply system runs on gravity and no electrical power is needed.

The major operation and maintenance activities in the schemes included periodic filling of sedimentation tanks, periodic cleaning of filtration unit by scrapping the top sediment layer over sand layer of the slow sand filter, cleaning of clear water reservoir, repair and maintenance of sluice valves between different units, etc. The main maintenance problem of sanitary diggi water supply schemes was frequent choking of the slow sand filter unit due to high silt quantities in irrigation water. Choking reduces the rate of filtration. It was difficult to remove the accumulated silt on the top of sand layer of the slow sand filter unit. When filter units becomes completely

choked, no water was available in the clear water tank. PHED was not involved in operation and maintenance after completion of construction of the schemes. PHED considered that O & M of the schemes will be done by the villagers themselves.

In the O & M demonstration project, routine visits were made to each village at an interval of one week. The visiting team had two groups. One group consisted of a public health engineer and supporting staff. The other group consisted of female members who were involved in door to door campaign in villages for safe water use and health and hygiene practice. Routine visits to each village continued for one year. Villagers were trained about how to operate and maintain the water supply scheme. Some maintenance works were done with participation of villagers. Water committees were formed in each village. One caretaker was selected by each water committee to operate the scheme.

3. MAJOR FINDINGS AND CONCLUSIONS:

The findings and conclusions in the study are as below:

- i) Community participation in operation and maintenance of rural water supply schemes was possible due to continued training on O & M and door to door campaign on safe water and hygiene practice for a long duration. The campaign and training was continuous over a period of one year in each village. One visit was made to each village in one week.
- ii) There is feasibility of replication of above model of community participation in other rural infrastructure projects such as community toilets, solar powered street light projects, community bio gas projects, etc.
- iii) The keys to success in participation of beneficiaries in O & M of water, sanitation and other infrastructure projects are:
 - a) The project must give substantial benefits to villagers.
 - b) O & M cost must not be high and it should not be difficult for villagers to bear the O & M cost.
 - c) O & M activities should be simple and demonstration of O & M should be given to villagers repeatedly for a long duration.
 - d) Village level committee should be formed in each project location. Care takers should be appointed by the villagers to perform the routine O & M activities. Care taker needs to be paid every month with contribution of money from villagers.
- iv) It is suggested that demonstration of O & M of projects should be made mandatory in all rural infrastructure projects in India. If the demonstration part of any project becomes successful, O & M responsibilities can be totally handed over to beneficiaries. Success of demonstration projects needs to be assessed before handing over the O & M responsibilities. The benefits of such demonstration projects includes successful performance of the projects for long duration, less O & M expenditure burden for Government, increased public welfare, etc.

Disclaimer: The findings and conclusions presented in the paper are personal opinion of the author.