



Towards making rural water supply work and sustainable

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THE USE OF boreholes fitted with handpumps has been a major means of getting water to rural communities. Maintenance is obviously an inevitable requirement of any system that depends on mechanical equipment, however simple that equipment may be. Arlosoroff (1984) alluded that historically handpump maintenance has been managed in many different ways, though with few exceptions, the principle has been to repair the pump once it has broken down rather than to carry out a scheduled preventive maintenance.

Pump reliability (availability) depends on both the frequency of breakdowns and the length of time for which the pump is out of service each time it needs attention. Village-level maintenance is preferred because of its potential for a rapid response, and the fact that VLOM (village level operation and maintenance) handpumps will usually be repaired very quickly, as no special tools and equipment are needed. It is evident that an active village level participation is crucial to the working and sustainability of a rural water supply project (Arlosoroff, 1987). In 1995 (23-25 May 1995), three resource persons including the author from the National Water Resources Institute Kaduna (NWRI) conducted a handpump maintenance workshop at Agricultural and Rural Management Training Institute (ARMTI) in Ilorin, Kwara State. UNICEF, which sponsored the workshop drew participants from Kwara and Kogi States and the Federal Capital Territory (FCT). The highlight of the workshop included reactivating one India Mark III and India Mark II pumps which were out of service within Ilorin and a nearby village respectively. Other pumps that were functioning were inspected. This same workshop was repeated in Sokoto at the State Ministry of Water Resources (28th October - 31st October 1996) with four resource persons from NWRI participating. One India Mark II pump was reactivated while some others were inspected.

The inspection of some of the functioning Indian Mark II pumps at Ilorin, Sokoto and environs enabled the workshop participants to correct such problems as noise during operation and shaky handles. The noise problem in some instances were due to stand assembly flange not levelled properly, others arose because of one or two bent connecting rod which we were able to straighten. Some shaky handles were due to loose handle axle nut that we easily tightened. Other shaky handles encountered featured worn out bearings and damaged spacers that could only be rectified by replacement (Olatunji *et al.*, 1996).

Waters (1986) noted that "despite the increasing cry emphasizing the importance of user involvement, most

development projects pay only lip service to the concept. This is because the requirements of the policy making processes we all must follow have not been adapted to accommodate this new demand for user involvement in planning". In effect, more from neglect rather than design "community involvement" is often more superficial lacking in real substance in some of the few isolated cases I came across during the course of the two workshops cited in this paper. There was no evidence of a viable village level maintenance arrangement in the villages visited where pump maintenance and inspection were done. What was visible and helpful was that some concerned villagers were around to witness the maintenance that was done. Some of them expressed the intent and willingness to do something before our visit, their hindrance generally was a lack of spares and finance.

Community participation in water supply projects

Technology however appropriate is not enough to ensure that safe water is provided for all who need them. Participation of the local community is vital. The higher the level of community participation in establishing a service, in implementing it and in operating and maintaining it, the more sustained the service. All water supply projects had an element of participation in choosing the site for the facility, providing labour, materials, establishing a committee, setting bylaws or regulatory systems, and so on. The more the community is allowed or encouraged to make decisions and to organize the participation of women and men, rich and poor, to increase their control over resources and structures, the more likely the water supply project will work and be sustainable. (Musambaye and Lidonde, 1997).

The sponsoring agency providing the water service should make a concerned effort to obtain participation data that can be grouped under:

- Project development and implementation
- Operation and Maintenance
- Benefits and burdens

When all the participants are properly informed about all that there is to share about a project, they will come to a proper understanding of their roles and what is expected of them for sustainable service.

How effective these participants are in carrying out their functions depends on their readiness. Proper briefing and

education can enhance the capacity of all the stakeholders to continue to do their part without faltering. The project will then be on a sure sustainable foundation.

In 1996, the author with two staff of the NWRI participated in a pond sand filtration workshop conducted at Minna, Niger State. At the end of the workshop, a roughing filtration plant was built at Maikunkele in Bosso local government of Niger State. The villagers were involved in the site selection. The filtered water flows by gravity to the village. Moving construction materials to the site posed the initial problem. Materials had to be dumped at about sixty meters (60m) to the site because of poor access.

We discuss with local leaders to help us with volunteers to help us get materials to the site. It was at the onset of the farming season. Labour was at a premium; it was not available free of charge even for this community project. We agreed to pay for labour. We had thought before that labour would be available as part of community participation. It was instructive for me to learn that community participation had to be agreed upon freely. It only underscored the fact that the opinion of the benefiting community should be heard and respected. It is encouraging to note that the project is still of benefit to the people of Maikunkele today.

Conclusion

The sustainability of a rural water supply project is closely linked with healthy community participation. For borehole fitted with pumps, the maintenance group within the community need training to help them to be sufficiently aware of what to do in emergencies. They need to know too that not all emergencies will require the use of spare parts.

The lesson from the few communities visited in the course of conducting handpump maintenance workshop for UNICEF revealed that community effort at maintenance is largely hindered by lack of spares and adequate institutional support.

It will definitely be helpful if the Nigerian government can widen the scope of providing support and technical services to meet the needs of rural communities.

The government can also lead in providing workable guidelines to enlist private sector participation in complementing government efforts at making rural water supply projects work and sustainable.

Water service providers in the rural areas must work closely with the community empowering them in decision making as regards site selection, choice of technology community involvement etc. it is when the community participates freely and willingly that a water supply project stands a good chance of providing long - term benefits.

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