



21st WEDC Conference

Kampala, Uganda, 1995

SUSTAINABILITY OF WATER AND SANITATION SYSTEMS

Establishing a decentralized maintenance system

F. Mawuena Dotse, Ghana

IN RESPONSE TO the reforms in the management of public sector activities coupled with the decentralization of the machinery of government, the Ghana Water and Sewerage Corporation (GWSC) has decided to promote the concept and practice of community management of water and sanitation facilities. Implicit in community management is the establishment of a decentralized maintenance system of the water facilities installed. Both community management and decentralized maintenance dovetail into the broader concept of Village Level Operation and Maintenance (VLOM). In this paper, the writer shares experiences from a UNDP funded project in Ghana on the establishment of a decentralized maintenance system.

The project has as its hardware objective, the provision of 120 boreholes fitted with handpumps and the construction of 750 household Ventilated Improved Pit (VIP) latrines, in beneficiary communities within the population threshold of 500 - 2000 in two districts in the Eastern Region of Ghana.

Choice of handpump

Based on tender evaluation, the Ghana Modified Indian Mark II handpump was selected to be installed on the boreholes drilled. The decision to install Indian Mark II pumps was criticized by some people on the grounds that it is not a typical VLOM pump and therefore not amenable to community management and decentralized maintenance. Countering this criticism, it was argued by others that VLOM could be modified to read VLOMM (Village Level Operation and Management of Maintenance). The thrust of the argument by the proponents of the pump selected is that decentralized maintenance does not necessarily require the development at the local level of a sophisticated technical capacity at the community level to undertake repairs in every village. Rather what is needed is managerial capacity to manage issues relating to the operation and maintenance of the water facilities provided. An additional rationale for the selection of the Indian Mark II pump is to ensure the uniformity of handpumps in the two districts given the existence of 114 similar pumps in both districts under a previous drilling programme.

With the conceptual clarification on the suitability of the pump selected, Project Management proceeded to establish a maintenance system with area mechanics as the pivot with support from community pump caretakers. The area mechanics would be responsible for below

ground repair and maintenance of a number of pumps in a determined geographical location while the community pump caretakers would be responsible for simple above ground maintenance (tightening of bolts, nuts, greasing of chain and examination of inspection chamber etc.)

Identification of training of key actors

Given the need to have competent area mechanics and community caretakers, Project Management decided to identify the train these groups. The identification of the community caretakers was direct and straight forward; letters were sent to the respective community water and sanitation (WATSAN) committees requesting them to nominate representatives including females to undergo training. The training of the pump caretakers lasted 3 days and covered the following broad topics:

- Handpump details
- Pump site hygiene
- Roles of the caretaker

With respect to the area mechanics, Project Management in concert with the Training Network Centre, conducted pre-selection interviews for potential trainees. The target group consisted of auto-mechanics, bicycle repairers, blacksmiths and repairers of 2 stoke engines (chain-saws, outboard motors and diesel generators). The rationale for targeting these group of people for selection is their perceived interest and knowledge base in the repair of equipment and machines. It was also felt that since the repair of pumps alone could not support the livelihood of the area mechanics, those selected should have a primary vocation to which they would add supplementary income. In addition to the technical competence of the mechanics, a critical factor examined during the pre-selection interview was the duration of residence of the mechanics in the district and the potential for a longer period of stay. Based on the information gathered and the interest demonstrated by the interviewees, 11 (eleven) mechanics were invited for a 2-week training workshop dubbed "Training Workshop for Area Mechanics".

The methodology for conducting the workshop consisted of direct lectures, classroom discussions and practical demonstrations. At the end of the workshop, participants were subjected to both a written and practical examination after which eight (8) out of the eleven (11)

trainees were selected. The workshop covered the following broad topics:

- Groundwater Development
- Drilling Process
- Installation of pump casings and handpumps
- Well cleaning
- Types of pumps
- Maintenance system
- Identification of pump components
- Fault identification and preventive maintenance
- Record keeping
- Role of WATSAN committees and community pump caretakers.

Provision of Tools to Area Mechanics and Community Pump Caretakers

To facilitate the operations of both the community caretakers and the area mechanics, set of tools are to be provided to them. In the case of the caretakers, they would hold the tools in trust for the WATSAN committees. The area mechanics would enter into a contractual agreement with the District Assemblies¹ on the possession and utilization of the tools being provided.

Spare parts distribution network

To provide accessibility and availability of spare parts to the communities and area mechanics in support of the decentralized maintenance system, a spare parts distribution network is to be established by the private sector in two commercial centres in both districts. The involvement of the private sector in the establishment of the spare parts distribution network is in consonance with its perceived role in the adopted national water and sanitation sector strategy. It is disheartening to state that notwithstanding the availability of seed money in the form of an interest free loan to the selected entrepreneur for the establishment of the distribution network, the response has been negative. Consequently, the contractual agreement for the performance of the activity has been abrogated. To pre-empt the collapse of the envisaged decentralized maintenance system, both the spare parts and the set of tools would be imported by the Community Water and Sanitation Division (CWSD) of GWSC. This state of affairs questions the private sector's preparedness and level of responsiveness to the needs of the water and sanitation sector as stipulated in the sector strategy.

The 120 handpumps installed by the project cannot form the basis for a viable spare parts distribution network. To create a critical mass of pumps which would support a sustainable and viable private sector spare parts and decentralized maintenance system 114 handpumps provided in a previous drilling programme currently under GWSC centralized management have been converted to community management and thereby incorporated into the decentralized maintenance system.

Generation of funds

The ability of communities to manage their water and sanitation facilities is contingent on their capability to generate funds to pay for spare parts and services provided by area mechanics. To this end, all adult residents in the respective communities pay monthly water user fees to their WATSAN Committees. An evaluation of the regularity of payment indicates that 50% of the adult population regularly pay the fees. This is a pointer that the decentralized system would not be threatened on account of inadequate funds arising out of the non-payment of water user fees.

Institutional framework

The sustainability of the decentralized system outside the project environment requires an institutional framework at the local level which would be used to monitor the performance of the area mechanics and the spare parts distribution outlets. The District Assemblies represented by the District Water and Sanitation Teams (DWSTs) would have to periodically visit the communities with a view to finding out the challenges being encountered by the WATSAN committees, area mechanics and the spare parts outlets. Given the continuous depreciation of the Ghanaian currency as against the dollar and other currencies, a system would have to be instituted to regulate the prices of spare parts and the professional fees of area mechanics. The essence of such a regulatory mechanism is to insulate the communities from arbitrary price and fee hikes by spare parts distributors and area mechanics.

Under the centralized maintenance system, borehole rehabilitation is the responsibility of GWSC. However, in the envisaged decentralized maintenance system, the issue of borehole rehabilitation is beyond the financial means of the communities and should be the responsibility of the District Assemblies. Resources could be provided from the District Assemblies Common Fund² for this venture.

Conclusion

Notwithstanding the fact that the establishment of a decentralized maintenance system has gained currency in Ghana, many problems about in the practical implementation of the envisaged system. To avert lapses, it is imperative to embody issues relating to its establishment in the initial stages of project implementation and the contract for the drilling or rehabilitation of boreholes. Given the importance attached to the role of the private sector in the establishment and operationalization of the system, an enabling environment would have to be created to facilitate their activities. This should be in the form of liberalising credit facilities, provision of seed money and training of technical personnel. The decentralized system should operate within a regulatory framework. The regulatory institution(s) would have to be strengthened to perform creditably. If these are done the system could operate satisfactorily.

Notes

1. A District Assembly is the highest political and administrative body at the district level. There are 110 of such District Assemblies in Ghana.
2. Under Ghana's Fourth Republican Constitution, 5% of national revenue is to be pooled into a District Assemblies Common Fund and shared among the Assemblies for development purposes.