



Sustainable rural WATSAN management in Bolgatanga

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THE GWSC, UNDP/WB water and sanitation programme together with some local agencies including the Department of Community Development, Environmental Health Division of the Ministry of Health, Department of Social Welfare assumed responsibility for executing the Bolgatanga Community Water Supply and Sanitation Pilot Project otherwise called 'The 50 Well Project' in July 1988 with funding from CIDA.

The Bolgatanga Community Water Supply and Sanitation Pilot Project was designed to find out whether communities were willing and able to take responsibility for managing their water supply and sanitation systems. The project objectives were therefore to develop a strategy for transferring maintenance responsibilities to the communities with fund mobilization, saving and spare parts distribution as important elements.

The project was also to promote the installation and use of household latrines and help to promote general hygiene and sanitation in the project area.

The other objective was to emphasize the involvement of women in playing lead roles in the community management concept.

The project was therefore by nature a multi-sectoral one with a high integration of its components (i.e. community management, hygiene and sanitation, water supply and women development activities).

What has been done

The project had over the three year period (1988 - 1991) accomplished its main objective of transferring management of water and sanitation to the communities. The nature of the pilot project permitted an intensive testing of the following:

- Communities willingness and ability to manage on sustainable basis with fund mobilization, saving and management of funds collected as important elements.
- The technical capability in pump maintenance and repairs.
- Improvements in hygiene and sanitation practices.
- The involvement of women in water/sanitation management in cooperating income generation activities to supplement maintenance funding.

Community management

The main task of the project was to transfer management responsibilities of maintenance to the community. It was therefore imperative to develop strategies that will en-

hance capacity building in knowledge, skills and problem resolution methods at the community level.

The primary focus was the pump community using a combination of recognized traditional, political and social organizations as entry points. It was necessary for each community to establish a seven member water and sanitation management committee (WASAMC). The WASAMC had the responsibility for the day to day running of the water or sanitary facility. Women being the traditional providers of water in the project area took lead roles on the committees.

The committees were provided back-up support by village extension workers (VEWs) who were paid a small allowance by the project. Each VEW supported an average of 15 communities. The VEWs were nominated by the communities and acted as liaison between project, the committee and the community.

Community participation is the pivot upon which the success of any community activity hinges. The communities were therefore initially assisted to organize themselves to participate actively in planning how to take control of the operation of the water points. The task of communities organizing themselves to deliberate regularly on issues of management became a tradition through the efforts of the village extension workers. The WASAMCs utilized the traditional leadership of the village chiefs and elders in resolving problems encountered amongst themselves and other community members. A feeling of sense of belongingness and ownership positively developed amongst the people and helped towards the achievement of positive results.

Financial management deficiency is one of the main obstacles to the smooth functioning of decentralized water systems. Thus fund mobilization and sound financial management methods were of great importance. Because of self management of funds and improved book keeping skills introduced by the project, all communities collected sufficient monies for maintenance during the three year period of the project.

One case of financial mismanagement was however reported and a few more individuals defaulted payment of pump maintenance funds. In some cases the recalcitrant individual was prevented from having access to pump water.

Water supply maintenance

Experience over the years in the Upper Regions had shown that centralized maintenance and repair of rural

water handpumps were not only cumbersome but costly and therefore unsustainable. The dispersed location of the water systems meant a high outlay of equipment as well as high running cost.

During the pilot project, the prospects of sustainable maintenance therefore favoured a simple and easy to maintain Village Level Operation and Maintenance (VLOM) handpump. For the first time in Ghana, three types of VLOM handpumps, Afridev/Aquadev (similar but different manufacturers) Nira AF-85 and Volanta were installed on 50 boreholes for community self management.

Maintenance is an important requirement of any system based on mechanical technology. Preventive maintenance was therefore introduced and performed by trained village mechanics chosen from within the WASAMC. They dealt with about 50% of the repairs and the remaining beyond their capability reported to the area mechanics.

Hygiene and sanitation improvement

The activities of the hygiene and sanitation component was complementary to the provision of potable water to the rural population. Community-based education was considered appropriate towards achieving the complementary role of hygiene and sanitation. Hygiene education was carried out during community training workshops organized for community health workers.

Areas covered included:

- Proper use of water.
- Pump site sanitation.
- Compound cleanliness.
- Food hygiene and nutrition.
- Personal hygiene.
- Causes and prevention of common diseases such as diarrhoea and malaria. Most of these information sharing activities with adults and children were done through the medium of songs.

The selected trained health workers carried out pump site and home visits to share their knowledge with pump users.

Women involvement and activities

Women represent over 50% of the population in the Upper Regions of Ghana. They are also the main providers of water in the household. Women's involvement in the rural water system was a prerequisite for the achievement of any meaningful goals. The main trust became the integration of women in activities aimed at the acquisition of organizational and technical skills in support of community management.

Women played an important role in hygiene and sanitation as representatives of the WASAMC on the promotion of hygiene and sanitation. They taught other women simple methods of preventing diseases, pumpsite clean-

liness and household sanitation using illustrated picture books designed for the purpose.

The project location is characterized by prolonged dry season. Innovative income generation ventures such as irrigation farming, basket weaving improved women's socioeconomic status and made funding available for pump maintenance.

The women's activities also extended to the provision of social infrastructure and environmental management. Women from five of the pump communities came together to initiate the construction of a community clinic, which was identified as a pressing need of the community. The women solicited technical assistance from the Department of Community Development whilst some building materials were provided by Adventist Relief Development Agency (ADRA) and the Ministry of Health.

Realizing the role of environmental conservation in preserving water supplies, the women also initiated tree growing at their various pumpsites.

The active involvement of women in the project activities disproved an earlier notion that in a male dominated society, response by women may be slow.

Achievements

Some major achievements were realized towards the overall objectives of the project. These include:

- Developed sense of ownership over water point, enhancing the spirit of self reliance.
- Developed skills for community self management.
- Developed relevant technical skills for maintenance and repair.
- Funding and fund mobilization for water supply became a tradition of the communities particularly with women groups.
- Although the latrine promotion strategy was unsuccessful, the awareness had been created and the demand for latrine was on the increase after the completion of 32 demonstration latrines scattered in the project area. The target was 100 demonstration latrines.
- Pumpsite sanitation and hygiene education picked up well in the communities demonstrated by the window dressed pumpsites of the area and improved hygiene practices of the women. Although the impact of the latter could not be measured; there were visible signs of improvement in household sanitation in particular.

Current status

Towards the middle of the third year of the project, support to the communities was being deliberately withdrawn. The aim was to monitor the communities' own performance in the various aspects of self management. By then all the committees had participated in seventeen Management training workshops each lasting between 2 - 7 days.

Findings reported here are combination of random visits and a survey carried out in the communities in April 1995 to assess the successes and failures.

Community self management

Although some were dormant, all the WASAMC formed 6 years ago were still in place to provide leadership in community action.

- The committees met 5 times per year on the average, but minutes of meetings were not kept, because the committees were predominantly illiterates.
- Decisions and actions taken were mostly on money collection and pumpsite sanitation.
- Most committees expressed difficulty in organizing money collection.
- All communities maintained bank accounts although 70% of them were woefully insufficient for any meaningful maintenance, let alone future pump replacement.
- Committees were capable and able to carry out maintenance and repair work on hand pumps

Handpump performance

Generally, the pumps performed well. The weak points were recorded in rod breakages, perforation of rising main and leakages from the riser main coupling, and foot valve failures.

The Afridev

The plastic bearings, bobbins and plunger seals were found to be most frequently used. It was observed that they were mainly used for annual schedule maintenance as recommended by manufacturers; and that the wear was usually slight.

The rod connection used are quick disconnect type and do not require tools. However, rust builds up quickly on the welded parts of the hook and eye. At the only deep setting borehole (39m) the rods broke at the hook end. In one particular case the rods broke four (4) times in two months.

The Aquidev

The difference in diameter between rod centralizers and the rising main is about 3mm wide, the centralizers sometimes rub the rising main during operation. The ribs on the outer surface of rod centralizers have perforated the rising mains on four occasions causing leakages.

The foot valve attached to plunger with a nylon cord sometimes snaps during pull out. With the slightest disturbance, the foot valve moves from its vertical position causing leakages.

Volanta

The volanta rising mains leak through the separate pieces of coupling glued together. Two instances of this were observed. The foot valve assembly sometimes disconnects from the threaded portion of the cylinder. This happened in four out of twelve pumps.

Nira AF85

Unlike the other VLOM pumps the foot valve is not extractable without removing the rising mains. The T-handle of the stainless steel handle wear and even perforate after 4 years of use. Five out of the eight pumps developed the problem.

Despite these failures in some of the pumps, about 75% of them are still in proper operation after 6 - 7 years of installation. The poor performance of the 25% of the pumps may be attributed mainly to the reluctance of communities to spend money on preventive maintenance.

Lessons learned

Many of the lessons learned under the 50 Well Project are centred around the human institution, finance and a few technology failures. Perhaps the most single important lesson learned endorses the fact that sustainable community management hinges on capacity building of the water committee which also depends on resources, time and the effort put on extension work. Training and self confidence building of the water committee to act on issues of management is time consuming and requires not less than (at least in the Upper Regions) five (5) years for communities to become managers rather than users of water systems.

Regular meetings and decision making is difficult; so raising the level of service is a very slow process even when the demand is there.

In some cases of the 50 Well Project, only part of the community have a felt need for a handpump. Ensuring the availability of sufficient funds for maintenance is difficult especially in cases where there are alternative water sources (e.g. hand dug wells). Interestingly, communities are generally reluctant to utilize mobilized funds on preventive maintenance unless there is need for a major intervention.

Sanitation issues, particularly the latrine was regarded a secondary issue behind water.

The sale of handpump spare parts seemed to be an unviable business. The average annual sales for the spare parts agent in the 50 Well Project is around 150,000 cedis (US \$136) due to few part failures and reluctance of communities to spend money on preventive maintenance.

Conclusion

Experience from the 50 Well Project indicates that consultation and joint decision making, where roles and rights are agreed upon with the communities as partners generally provide more realistic solutions to sustained self interest in management.

It is observed that sustainable community management is easily realized where the community and their selected committee members have a common self motivation factor (e.g. where water is scarce or the value of clean water is appreciated) without which awareness creation

through trainings is usually a process of many, many years.

An important factor inhibiting sustainable rural water supply is the lack of private sector support due mainly to economic interest. Major players (Government, ESAs) in the sectors development will need to demonstrate their support by relaxing import and export regulations and

also channelling more resources through the private sector (NGOs) to enhance sustainability of rural water and sanitation facilities.

Although community management seemingly have veritable bottlenecks, it is probably the only known sustainable arrangement for ensuring uninterrupted water supply and sanitation in the rural areas of Ghana.