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THE FUTURE OF WATER, SANITATION AND HYGIENE:
INNOVATION, ADAPTATION AND ENGAGEMENT IN A CHANGING WORLD

Approach to sustainable rural water supply and sanitation in Africa: Ganji Gebi, NW-Nigeria Case Study

O. M. Eduvie, M. Iliyas & N. Yakubu, Nigeria

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The Ganjin Gebi community water supply and school sanitation system has an overall output goal of providing adequate new potable water supply to Ganjin Gebi community and water supply and sanitation facilities in the Primary school with a sustainable community management approach. The strategy includes engaging the community in a mobilisation process, establishing a Water Consumers' Association (WCA), working out the best technical concept (level of technology), and support the establishment of community management system for the sustainability of the project. Two new boreholes with yields of 36m^3/hr each, storage facilities, and stand pipes and kiosks were provided for water supply and a total of 12 cubicles VIP latrines were constructed in the Primary school. Results of the project evaluation indicate willingness of the community to manage the newly installed facilities. Recent monitoring conducted shows that the facilities are still functional after over five years of providing the facilities.

Introduction

Recent snapshot of drinking water and sanitation in Africa 2010 update shows that Nigeria is not on track towards the MDGs drinking water and sanitation target (AMCOW, 2010). There is therefore the urgent need to take steps towards reversing this unacceptable trend. The Federal Government of Nigeria has already developed a strategic framework for rural water supply and sanitation and an implementation guideline for Small Towns' water supply both of which provide powerful tools for reforming the provision of water supply in rural and small town. Unfortunately, most of the water supply – with the exception of those supported by External Support Agencies and some key NGOs – are still being implemented by government in the old fashion unsustainable manner.

Ganjin Gebi Water Supply and sanitation project was developed in 2005 as a pilot project to demonstrate that a sustainable community managed water supply can work and should be emulated with the support of the government. The scheme is consistent with most of the recommendation on the National Guideline for the Implementation of Small Towns Water Supply. It was established in 2005 under Jigawa State Water Supply and Sanitation Programme (JUWASS) and supported by the Department for International Development (DFID). The project was specifically focused on improving water supply and sanitation in some communities in Jigawa State of Nigeria. The goal of JUWASS was to make investments in specific areas that would ensure effective service delivery to the least advantaged and will be sustainable after completion of the project.

At the commencement of the scheme, the Ganji Gebi village in Northern Nigeria was inhabited by about 4,000 people with projected population of 5,000 by the year 2015 (JUWASS, 2006). Ganji Gebi village is a farming community with very few other sources of income apart from farm lands and about 300 cattle. There were about 360 households with an average household population of 11(JUWASS 2004). The then existing water facilities included public and private wells with average depths of 12 m. Generally, the water quality in these wells was found to be poor. There are no rivers near the community and major source of water is groundwater mainly from the Chad Formation with aquifer depths of 50 – 70 m.

Methodology

At the commencement of the project, literature review and formative research was conducted to assess the current practices related to water and sanitation situation in the village. Choice of technology for water supply and formation of WASCOM for proper coordination of the programme was also carried out. This is to prepare them for full community-driven managemnt of the water and sanitation facilities that will be put in place for effective O & M after the completion of the project. The initial phase of the formation of the Water Consumer Association (WCA) included the following activities:

- Community Mobilisation on the benefit of better water supply
- Water Consumer Associations formation including election of officials
- Registration of the Association with Local Government (LG) and State
- Bank Account opening
- Encouraging the Participation of Women.

This was followed by a study and search for available water sources after which a proposal was put to the community on some basic cost effective design options. The community then was engaged in a formative process to help them make an informed and cost effective choice of a financially viable technical solution. The process involved series of training sessions and WCA meetings.

The implementation of the selected option - which consists of 2 sets of generator powered boreholes each with stroge tanks and primary distribution and standpipes with kiosks – was done with some support of the community in the form pipeline excavation, laying and backfilling. The community also contributed 10% of the physical project cost which was kept in the WCA account to form initial seed for operation and maintenence. The implementation also included preparing the community for managent of the system (including operation and maintenance, introduction to payment system, book keeping) initial on the job support to ensure sustainability.

The last phase includes training of members of the communities: teachers and school children on basic sanitation and hygiene and effective management of the water facilities to ensure sustainability.

Results and discussions

Technical options:

The results of the mobilization in the community to select options for water supply with approximate cost implications of the community contribution towards sustenance of the system. That is (amount in Naira per house hold per month) shows the following:

- Option 1: Upgrade wells and 10 additional handpumps (N12/HH/month)
- Option 2: deep boreholes with handpump (N16/HH/month)
- Option3: Rope Pump (N44/HH/Month)
- Option 4: Solar powered system (N48/HH/month)
- Option 5: Generator powered BH system without distribution (N214/HH/month)
- Option 6: Generator powered BH system with distribution to standpipes (N323/HH/month
- 1 US $ = N125 (2005).

At the end, the community choose option 6 that entails the provision of generator powered borehole system with distribution to standpipes.

Water and sanitation facilities provision

The following facilities were constructed during the implementation.

Boreholes and latrines

- 2 boreholes drilled to 60m; one on both side of community with average production 5 l/sec
- 12 No. VIP latrines constructed with hand washing facilities.
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Storage facility, power supply and water distribution network

- 2 Overhead tanks, one on both side of the community

- Borehole pump system, generator driven, complemented with NEPA connection
- Tank base height: 4 m
- 1,400 m of pipe, PVC 63 / 75, galvanised steel between boreholes and overhead tank.

Standpipes and kiosks
- 6 public standpipes; 3 on each side of the community
- 1 school standpipe system with 3 taps in a concrete platform and adequate drains
- 1 mosque standpipe.

Management token system
- Kiosk token system
- Sale of 10 and 20 L jerry cans
- Calculation of jerry can tariff on basis of Operation, Maintenance and Reinvestment costs
- Current cost: N1 per 10L jerry can
- 6 kiosks franchised to families.

Management systems
- Management system I: Token sales through Water Committee (WB) (as shown Figure 1)
- Management system II: Token sales through kiosk Operators (KB) (as shown in Figure 2).

Management systems: some of the advantages and disadvantages include:
- WB: Water Committee control system
- WB: A lot of work falls on Water Committee
- WB: Tokens take a long time to circulate
- KB: Tokens circulate quickly
- KB: Kiosk Operators have a great amount of flexibility in setting prices
- KB: Kiosk Operators have to hold large amounts of money for payment
- KB/WB: In both systems, standpipe water meters must be read
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Conclusions and recommendations

The Ganji Gebi community-driven project has proved to be sustainable as shown by putting in place a holistic sustainable infrastructure and human development management structure based on the community choice, support and management.

Ganjin Gebi water supply is a paradigm shift in the management strategy of community based water supply and sanitation programme that encourages community participation in water development and delivery and empowers the community to manage their water supply system. To encourage small and disadvantage communities, Government and other supporting agencies should increased funding and proper mobilization for such community driven projects. This will entail more advocasy and change of mind set to ensure sustainability of projects at the community level.

Finally, good monitoring and evaluation should be a continious process to avoid the community going back to their former ways of handling community projects that are normally abandoned.

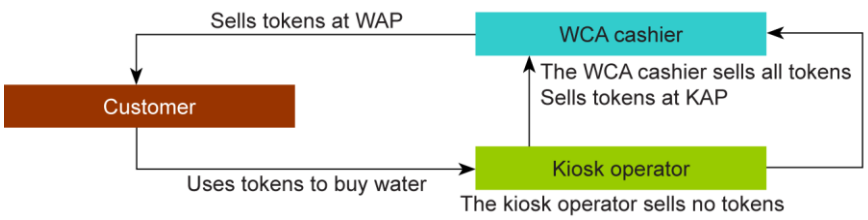

Figure 1. Management system I: Token sales through Water Committee (WC)

Source: JUWASS 2006

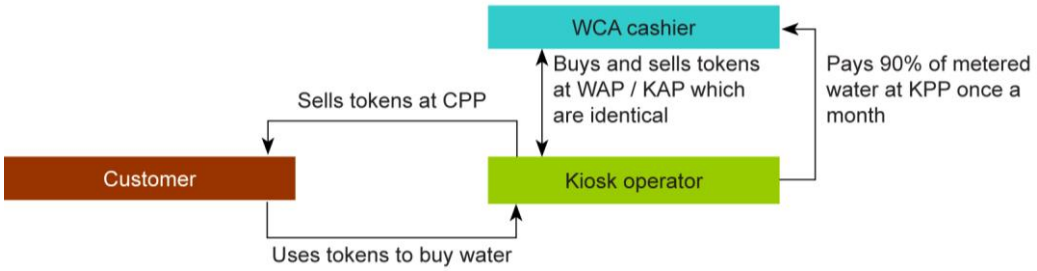

Figure 2. Management system II: Token sales through kiosk operators (KB)

Source: WEDC JUWASS 2006

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Keywords

Ganji Gebi, community water supply and sanitation, community mobilisation, community management approach, groundwater.

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Contact details

Name of First Author: Dr. Martin O. Eduvie
Address: Coordinator Rural Water Supply and Sanitation Centre,
National Water Resources Institute,
Mando Road,
PMB 2309 Kaduna,
Nigeria.
Tel: +2348036400061
Email: martineduvie@yahoo.com

Name of Second Author: Iliyas Mohammed
Address: Darl Harb Consultant Kaduna.
Tel: +2348033145544
Email: milliyas2@yahoo.com

Name of Third Author: Yakubu Nasser
Address: EU WSSRP Project Dutse Jigawa State
Nigeria.
Tel: +2348034183236