



Options for small-town water supply and sanitation in Nigeria

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DESPITE THE RECENT attention being paid to water supply and sanitation (WS&S) Sector by the democratically elected Nigerian Government, WS&S coverage is still low. Water supply coverage in the urban area is 50%, small-town-20% and rural area – 10% (FMWR, 2000). Apart from these low figures, the average per capita delivery to the urban population is only 32 litres per capita per day (lpcd), 25 lpcd for small-town and 10 lpcd for rural as against the minimum specified by World Health Organization (WHO) of 100 lpcd. Sanitation coverage is even worst with urban – 40%, small-towns – 15%, and rural – 5%. Various reasons have been advanced for the poor sector performance, which includes poor management strategies and insufficient technical skill.

The objectives of this study were to develop some management options for the integration of socioeconomic and environmental aspects of WS&S project in small-towns and to develop set of procedures, rules, tools and relationships to facilitate the exchange of information among the major actors in the sector in order to improve performance in the sector.

The study among other things provides the blend between 'top-down' and the 'bottom-up' management approaches which allows for active participation of all the major stake holders of the Sector - Governments, Financing Agencies, Benefiting Communities, Manufacturers, and Consultants in the development of Nigerian WS&S Schemes from the start of the project to operation and maintenance.

Study approach

This study was carried out using a small town - Mbiri, Delta State as a case study by focusing on the following three basic approaches (TODINI E, 2003):

1. Assessment and Description of the Scenario:

- Assessment of the present Scenario of WS&S at Mbiri in terms of sources, population served, water borne diseases, environmental pollution, etc....);
- Description of the present WS&S scenario at Mbiri in terms of hydrological, social, economic and environmental indicators.

2. Forecasting of improved WS&S system at Mbiri and the environment based on scenarios, technical alternatives and management strategies (actions are to be described in terms of decision variables);

3. Evaluation & Review of the effects of the actions, by observing the effects on the system forecast on the basis

of the different scenarios, alternatives and strategies. Review of the forecast based on consideration of constraints of local, national or international legal constraints and directives which should be mapped and related to the environmental and administrative conditions.

Results

Water supply

As has been said, there is no pipe-borne water presently at most small-towns like Mbiri. Past efforts have failed due to poor management options. The inhabitants now depend on self-help effort through rainwater harvesting and fetching water from a long distance river. From the questionnaire administered, it was gathered that 70% of the inhabitants depend on rainwater harvesting – consisting of 51% on cisterns fed with rainwater harvested from house roofs, and 19% on ponds fed with muddy flood rainwater runoff; 30% depend on a River located at the out skirt of the town - about 500m from the centre. These sources being utilized are microbiologically unsafe and are often polluted. On many occasions there had been out breaks of water borne diseases e.g. typhoid fever, dysentery, diarrhea, guinea worm and schistosomiasis (river blindness). Also, due to the time spent on long distances (between 300-1000m) to fetch water from the river, other important and economic activities like industrial processing and irrigated farming receive very little attention. The scenario is that of a water stressed community.

Sanitation

For sanitation still due to scarcity of water, 18% of the population use the open fields (bush) for defecation, while majority, 62% use pit toilets, 8% use Ventilated Improved Pit (VIP) toilets and only twelve 12% use pour flush toilets.

Analysis and discussion of results

The analytical procedure

The analytical procedure used involves assessing the present scenario, forecasting options that would improve the various situations and weighing the positive and negative outcomes of the suggested options.

Discussion of results

The importance of efficient planning and management of Water Supply and Sanitation (WS&S) project is to avoid

waste of the three major world's scarce resources - **Man, Money and Materials** (3Ms). The scenario in Nigeria and small-towns in particular portrays poor management strategies. In the past, the top-down approach had been predominantly used by the Government in formulating Nigerian WS & S Policies. For instance when a Government solely decides where and how to install a WS&S scheme without consulting or involving the users/benefiting communities, that scheme is bound to fail. The "No one owns Government's property mentality" has led to many broken down hand pumped and motorized borehole schemes scattered all over the country leading to inadequate access to safe water supplies, combined with poor sanitation.

From the Mbiri Case Study, the following can be deduced:

- There are enough water resources to serve the population with adequate water supply. In fact, it was calculated that only 2 boreholes would be sufficient to meet the water demand of Mbiri town.
- There is lack of Institutional Co-ordination leading to waste of the 3Ms
- There is the willingness for the Water Users to pay for water; they are also willing to participate in the operation and maintenance of WS & S Schemes.

Recommendations and conclusions

Recommendations

The following table summarizes some of the recommendations made from the study:

Conclusions

From the foregoing, the following conclusions could be reached:

- Poor management of the WS&S Schemes in Nigeria has led to untold problems ranging from scarcity of potable water, poor health, poverty, non-functional schemes to low socioeconomic status of the citizens.
- Nigeria is indeed endowed with both human and natural resources required for efficient WS&S service. It only needs the employment of good management options to achieve the desired goals (VITTUR RENZO, 2003).
- With as little as two boreholes or one surface water treatment Scheme, a small-town like Mbiri, can be adequately catered for.
- With public awareness and education, the community would be willing to pay for water supply and also participate effectively in the operation and maintenance.

References

- FMWR (2000) "National Policy on Water Supply and Sanitation". FMWR, Abuja.
- TODINI E. (2003) "Towards Decision Support Systems for Sustainable Water Development and Management" Lecture Note at WARREDOC, University of Foreigners, Perugia, Italy.
- VITTUR RENZO (2003) "The Management of a Water Supply Industry" Lecture Note from WARREDOC, University of Foreigners, Italy.

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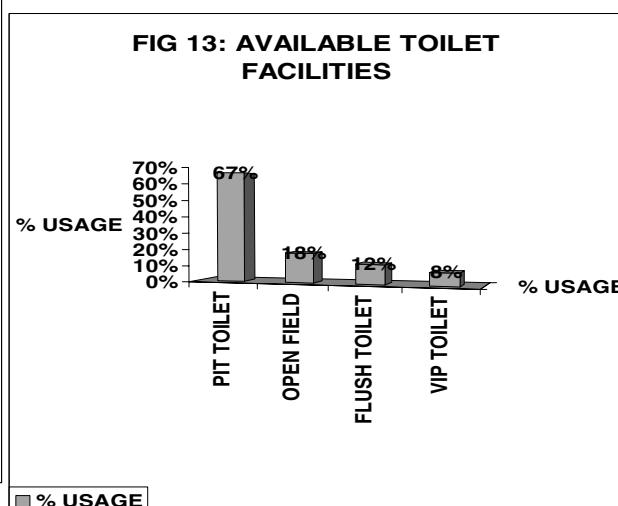
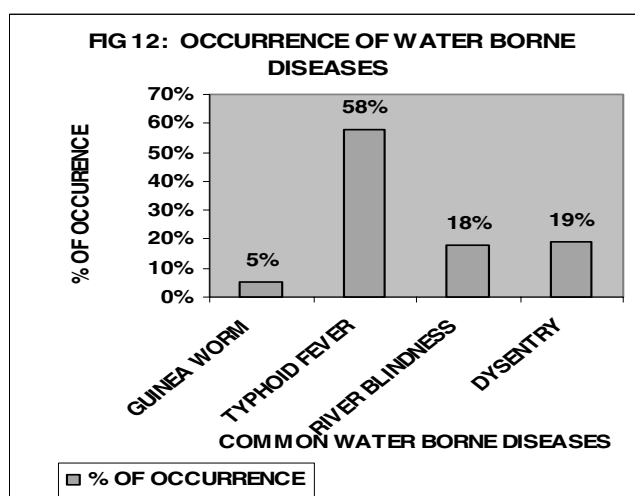


Table 1. Recommended For management options

S/N	MANAGEMENT OPTIONS	MERITS/FUNCTIONS
1.0	COMMUNITY'S OWNERSHIP OF PROJECTS AND PARTICIPATION	<ul style="list-style-type: none"> § Communities should have the sense of project ownership § Pay regularly for water service § Designate the members of the Community's Water Users Association (CWUA), some of whom would be appointed to the State Water Users Association (SWUA) § Participate in decision making from the conception of the scheme to operation and maintenance § Ensure rational and hygienic usage of water
2.0	EMPOWER WOMEN TO BECOME WS&S PROJECT MANAGERS	<ul style="list-style-type: none"> § Since women are the main users of water, they should be the best managers of water and should influence family sanitary habits through their central role in family hygiene, child care and food preparation. § Women should be guaranteed representation in CWUA, which must have 50% of women members. § This will afford women the opportunity to be trained in all the relevant areas for skill acquisition in order to enhance their performance in the new task.
3.0	FORM COMMUNITY WATER USERS ASSOCIATION (CWUA) (Made up of equal male and female members)	<ul style="list-style-type: none"> § They are to collect and pay the water tariff into the Project Account § They should be delegates to the SWUA § Should interface between the Funding Agencies and the Users § Ensure proper book keeping and account record
4.0	FORM STATE WATER USERS ASSOCIATION (SWUA) (Made up of all the water management committees of the villages around)	<ul style="list-style-type: none"> § Should be at the State Level § Sign contracts with the private service providers § Gives its opinion at every stage of the project § Set the price of water with the Operators § Monitor to see that water service is carried out properly in accordance to the adopted management options § Give approval for expenditures which are necessary for the maintenance and expansion of scheme
5.0	FORM NATIONAL WATER USERS ASSOCIATION (NWUA)	<ul style="list-style-type: none"> § Should be at the National Level § Interface between the users and the public § Gives soft loans and financial guarantees to allow for maintenance and expansion of the scheme § Negotiates favourable conditions between spare part suppliers and the Users Associations § Facilitate the supply of services and relevant training needs § Supply management decision options
6.0	OPEN A PROJECT DEVELOPMENT BANK ACCOUNT	<ul style="list-style-type: none"> § Lodgment of the Stake Holders' share of the Capital Cost § Lodgment of Water Tariff on a regular basis § Proper Book Keeping and Account Record
7.0	EMPLOY A TRAINED OPERATOR	<ul style="list-style-type: none"> § Ensures the production and distribution of potable water as constant as it is possible § Sees to the technical functioning and maintenance of the installed equipment § Provides the cost estimates for operation maintenance and renewal of equipment § Ensure regular cleaning of the reservoirs
8.0	EMPLOY A NIGHT GUARD	<ul style="list-style-type: none"> § To take responsibility of the safety of the equipment and other assets owned by the CWUA
9.	ENGAGE INTERNAL AND EXTERNAL AUDITORS	<ul style="list-style-type: none"> § Technical auditing of the Scheme § Financial auditing of the Scheme § Skill auditing of the members of the CWUA