

## Evaluation of Borehole Water Supply Schemes in Ejigbo Local Government, Osun State, Nigeria

Toyobo A.E.,

Department of Urban and Regional Planning, Ladoke Akintola University of Technology  
PMB 4000, Ogbomosho, Oyo State, Nigeria.  
Email: toyoboae@yahoo.co.uk.

### Abstract

The aim of the study is to evaluate borehole water supply schemes in Ejigbo local government. The specific objectives were to: examine the socio-economic characteristics of the respondents, enumerate the number of boreholes and their functionality, identify the agency that sponsor the provision with associated problems and suggests measure of sustainability of the boreholes. Data were collected from both primary and secondary sources. For the primary source, 250 questionnaires were administered using systematic random sampling method to solicit information on the number of boreholes, their functionality, agency involved in the provision and related associated problems. Data gathered were analysed using descriptive statistics to affirm the degree of functionality of boreholes in the area.

The study revealed that 36 boreholes were in bad condition and needed repairs for it to function efficiently. Community were not involved in the planning and implementation of the construction of government boreholes in the area, hence, there was no sense of belonging by the people for repairs and maintenances. The study therefore recommended the partnership approach in addition to community approach in water supply development in the area.

**Keywords:** water, borehole, functionality, sustainability

### INTRODUCTION

One of the characteristic features of developing countries which Nigerian aptly exhibit is uncontrolled rapid rate of urbanization. Over the years the number and size of urban centers in Nigeria have increased tremendously. Such a large population can only be sustained if there is adequate supply of food and water. Klaus (1999), drew the world's attention to the possibility that clashes over dwindling supply of fresh water may become the source of future conflicts among nations. This disclosure ought to worry everyone. The rapid rate of uncontrolled and unplanned urbanization has brought with it a complex urban problems of particular significance is the problem of inadequate of necessary supporting urban utilities and services notably water supply. It has proved difficult to match the provision of these services with the rate of urban expansion. As Onibokun and Egunjobi (1987) rightly observed that the results have been shortage and poor quality of the services coupled with environment pollution. All of which contributed in no measure to poor standard of living of urban populace. In the developing countries, most infrastructural facilities provided, the beneficiaries are not often involved in the planning and implementation ( Lockwood 2004; Narayan 1994; Perry Jone et al 2001; Pretty 1995 and UNICEF and WHO 2002). This has led to a look warm attitude in the repairs and maintenance by the community concerned ( Schouten et al 2003; Renold 1992 and Maraz 2001).

Clean water from borehole exist to substitute pipe-bore water supply in towns and cities in developing countries where population growth could not matched with the available provision of pipe-bore water supply services. The study therefore tries to evaluate borehole water supply in Ejigbo local government with a view of making suggestions towards the sustainability of the same. The specific objectives of the study are to: (i) examine the socio-economic characteristics of the respondents, (ii) enumerate the number of boreholes in the area, (iii) identify agencies involved in the provision of boreholes, (iv) examine the functionality of boreholes with its associated problems of the provision and (v) suggest possible measures toward sustainability of borehole water systems in the area.

### MATERIALS AND METHODS

#### (a) Brief of the study area.

The study was carried out in Ejigbo local government, a major yoruba settlement in Osun State, Nigeria. Ejigbo has a population of 132,641 (National Population Commission 2006) with an area of 373km<sup>2</sup>. The people of Ejigbo prefer borehole water to any other sources of water in the area, but the fundamental long term functionality of the water supply systems cannot be over emphasised which is the focus of the study.

#### (b) Methods of data collection

Primary data were collected through visiting the study area to: enumerate the number of boreholes and identify those that are functioning well, partially functioning and not functioning at all. Questionnaire was administered to 250 respondents using systematic random sampling method to solicit information of their socio-economic characteristics and investigate those involved in the sponsor of boreholes and other associated

problems related to participation of borehole provision together with community and government in the study area. The secondary data involved review of related literature on water supply. Data gathered were analysed using descriptive statistics such as frequency count, tables and percentages, to affirm the degree of sustainability of borehole water supply to the people in the area.

## RESULTS AND DISCUSSIONS

### (a) Socio-economic characteristics of respondents in the study area

**Table 1: Socio-economic characteristic of respondents**

VARIABLES	FREQUENCY	PERCENTAGE(%)
<b>(a) Gender</b>		
i. Male	94	43.3
ii. Female	123	56.7
<b>(b) Religion</b>		
i. Christianity	135	62.3
ii. Islam	75	34.6
iii. Traditional	7	3.2
<b>(c) Marital status</b>		
i. Single	95	43.8
ii. Married	119	54.8
iii. Divorced	2	.9
iv. Widowed	1	.5
<b>(d) Educational status</b>		
i. Non-formal education	34	2.3
ii. Primary	4	22.1
iii. Secondary	48	59.9
iv. Tertiary	130	5.5
<b>(e) Occupational status</b>		
i. Petty Trading	103	47.4
ii. Civil Servant	86	39.6
iii. Artisan	19	8.8
iv. Farming	4	1.8
v. Unemployed	5	2.3
<b>(f) Monthly Income</b>		
i. <₦5,000	60	27.6
ii. ₦11,000-20,000	27	12.4
iii. ₦21,000-30,000	103	47.5
iv. Above ₦30,000	27	12.4

Source: field work, 2012.

Table 1 shows the socio-economic characteristics of respondents such as: gender, religion, marital status, educational attainment, occupational status and monthly income. Female respondents were 56.7% than males 43.3%. However, those married among them were 54.8%, single 43.8%, divorced 0.9 and widowed 0.5. Majority of them had primary education 59.9% and least with non-formal education 2.3%. The level of education of respondents motivated them to engaged in various occupational activities such as petty trading 47.4%, civil servant 39.6%, artisan 8.8%, farming 1.8% and unemployed 2.3%. Although their income vary between ₦21,000-30,000 (47.5%) rank the highest, while (12.4%) earn ₦11,000-20,000 and above ₦30,000 respectively. Water is needed for household use because of the nature of their occupation and gender characteristics in the study area.

### (b) Enumeration of borehole water supply in the study area

**Table 2: Enumeration of borehole water supply**

Political wards	Number available	Number expected	Short fall
1	10	15	5
2	13	16	3
3	10	22	12
4	14	18	4
5	17	25	8
<b>TOTAL</b>	<b>64</b>	<b>96</b>	<b>32</b>

Sources: field word, 2012.

Table 2 revealed that there are a total of 64 boreholes in the area. Ward 5 has the highest number of boreholes (17) and the list in ward 1 and 3 which recorded 10 boreholes respectively. However, oral interview

with opinion leaders in the area suggested the expected number of boreholes for each political ward as indicated in table 2. This implies that there would be short fall in borehole water facility in order to argument the available number of borehole on ground for each political ward in the area.

**(c) Borehole water provided by donor agencies**

**Table 3: Sponsor of borehole water supply in the area**

Agents	Frequency	Percentage(%)
Community	114	52.5
Government	75	34.5
NGO	29	13.0
Total	217	100.0

**Source: field work, 2012.**

Table 3 shows agency that sponsored the provision of borehole water facility in the area. Ejigbo community 52.5% rank the highest. This is followed by government 34.5% and Non-Governmental Organization (NGO) (13.0%). Most of the private individuals in the community that provided borehole water facility in the area were commercialised while that of government and NGO are free. Despite this, some of the borehole water systems are in the state of disrepair.

**(d) Functionality of borehole water in the study area.**

**Table 4: Functionality of borehole water in the study area.**

Political wards	Numbers of Boreholes	Functioning	Partial Functioning	Not Functioning at all
1	10	5	1	4
2	13	6	2	5
3	10	6	1	3
4	14	4	3	7
5	17	7	2	8
Total	64	28	9	27

**Source: field work 2012.**

Table 4 shows the functionality of borehole water systems in the area. Out of a total number of 64 boreholes, 28 functioned well as per the time of data collection, 9 boreholes partially functioned and 27 boreholes did not functioned at all. Ironically, 36 boreholes were not in good condition and this has affected Ejigbo community water supply. Government boreholes dugged in the area were left under the mercy of the community for repair and maintenances. Oral interview with respondents shows that there were no Water Committees in-charge of repair and maintenances of boreholes in the area. However, private individuals in the community manage their own boreholes in the area which are used for commercial purposes.

Oral interview with respondents shows that government did not involved community members in the planning and implementation of the boreholes in the area. Some community were even marginalized in the distribution of the borehole water facility by government. There is therefore no sense of belonging by the community and this is a major problem which has resulted to negligence of borehole water facility in the repairs and maintenances by the people.

**RECOMMENDATIONS**

- (i) Government should take citizen's participation into consideration if the management of borehole water sources is to thrive in the community and also government should provide adequate sanitation and maintenance of water facility.
- (ii) Sensitization programs should be done by the NGOs on issues relating to borehole water management and its safety in the study area
- (iii) Government should help in the provision of portable water supply and more funds should be allocated to water resources development in the study area.
- (iv) Individual should be concerned on all action aimed towards providing a safe and convenient water supply and they should also see the effort of water provision as a joint effort between them and government.
- (v) Community should table their request before government on issues like borehole water supply, because government is the agents for city growth and development.
- (vi) Adequate sanitation and maintenance of the water supply facility should be the concern of the entire community.
- (vii) Partnership in addition to community approach to water supply delivery should be adopted in planning water supply in the study area.

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