

CONSTRAINTS OF RURAL HOUSEHOLDS TO ACCESS IMPROVED DRINKING WATER IN OYO STATE, NIGERIA

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Abstract. This study examined the constraints of rural households to access improved drinking water in Oyo State. A multistage sampling procedure was used to select 120 rural households and data were collected using interview schedule which were analyzed using descriptive and inferential statistics. Results reveal that majority (79.2%) of the respondents were married, female (54.2%) and had no formal education (53.3%). Available sources of improved drinking water for use among the respondents are protected dug well (99.2%), rainwater collection (99.2%) and constraints to access improved drinking water were the broken down of public tap and inadequate source of improved drinking water resulted to the use of river water and stream (64.2%) respectively. At 0.05 level of significant, there was a significant relationship between the respondents income ($r = 0.592$; $p = 0.028$); sources of improved drinking water for use ($r = -0.435$; $p = 0.001$) and constraints to access improved drinking water. Based on the foregoing it is recommended that there should be replacement of broken tap, improved drinking water source should be adequately provided by the government and non-governmental organization to the rural areas, good maintenance of pumping machines and gadgets should be encouraged among the community members.

Keywords: *constrains, rural households, access, improved drinking water.*

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1. Introduction

Water is natural resources needed in everyday activities, however, access to safe water supply has great influence on the health, economic productivity and quality of life of the people, but meeting this need is one of the major challenges facing the rural communities in Nigeria.

Access to improved drinking water is a problem facing a large proportion of the inhabitant of the rural communities, in spite of the considerable investments of Nigerian government in water supply programme, over 52% of its population have no access to potable water, however, low access to safe water in Nigeria has been attributed to the enormous socio-economic development, growing industrial base, poor planning, insufficient funding and haphazard implementation, to mention a few (Oluwasanya, 2009).

Rural people in the country still depend very much on rivers, streams, ponds, and shallow wells for their water need, during the dry season, some of these sources dry up

and households have to invest a substantial amount of their resources to get water of good quality.

Poor quality water and contaminated one are the single largest cause of human sickness and death in the world and disproportionately affects the poor. There are a number of reasons why the sustainability of water services in rural Africa is generally quite low, some of these are related to environmental and technical issues while many are related to social and management issues.

Rural households spend their productive and considerable time seeking for safe water in far distances from their homes and their inaccessibility to an improve water supply are vulnerable to many health problems.

Improved water is essential for all forms of life and access to it is imperative for human safety, in spite of its importance, there is a global paucity of safe water (UN, 2002; WHO and UNICEF, 2004).

In many parts of rural Nigeria, women and children spend substantial part of their productive time looking for improved water and they resort to alternatives categorized as untreated and unsafe sources such as rivers and surface water (Alaba, 2001).

Access to improved drinking water can make an immense contribution to health, productivity and social development. Preliminary investigations revealed that majority of the rural communities in Nigeria do not have improved water supply systems such as piped water networks or boreholes, where such facilities exists are either malfunctioning or completely broken down and this force household to rely on available sources for domestic purposes. Many people in developing countries continue to rely on unimproved water sources and according to the United Nations Development Program (UNDP, 2006), nearly one-sixth of the world's population obtains drinking water from unimproved sources, and in many developing areas, progress in expanding clean water coverage is modest.

Despite the efforts of Government and international agencies to provide improved drinking water to rural people of Oyo State, a larger percentage of households in rural communities do not have access to improved drinking water supply, they rely solely on self-water supply (free source) such as rivers, perennial streams, water ponds and unprotected wells which is susceptible to water borne diseases such as typhoid fever, cholera and dysentery. Therefore, it is against this background that research study examined constraints of rural households to access improved drinking water in Oyo State, Nigeria.

The specific objectives were to:

- 1) describe socio-economic characteristics of rural dwellers in the study area.
- 2) determine the availability of the sources of the improved drinking water for use in the study area.
- 3) ascertain rural household constraints to access improved drinking water.

2. Methodology

The study was conducted in Oyo State. Oyo State is an inland state in south-western Nigeria with is capital at Ibadan. Covers approximately an area of 28,454 square kilometers and it is bounded in the south by Ogun State, in the north by Kwara State, in the west it is partly bounded by the Republic of Benin, while in the east by

Osun State. The climate is equatorial, notably with dry and wet seasons with relatively high humidity. The dry season last from November to March while the wet season starts from April and end in October. Average daily temperature ranges between 25°C (77.0 °F) and 35°C (95.0 °F) almost throughout the year. The population of this study consist of the rural household head in Oyo state. Multi-stage sampling technique was used for this study.

The first stage involved the stratification of Oyo State local government into rural and urban while the Second stage involved the selection of 20% of 21 rural local governments using simple random sampling technique which gave 4 rural local government areas which were Akinyele, Ido, Ogbomoso North and Ogbomoso South. In the Third stage, 20% of the wards in each of the local government areas namely Akinyele (12 wards), Ido (10 wards), Ogbomoso North (10 wards), Ogbomoso South (11 wards) were selected using simple random sampling technique which gave a total of eight (8) wards in the selected local government areas of Oyo State. The Fourth stage involved the selection of three (3) communities from each of the wards selected using simple random technique which gave a total of twenty-four (24) communities. From each community five (5) rural households were selected using systematic sampling technique which gave a total sample size of 120 respondents.

Data was collected through interview schedule and they were subjected to statistical analyses using frequency, percentage, Pearson correlation and chi-square. Variables measured include socio-economic characteristics of the respondents, available sources of improved drinking water in the study areas and their constraints in accessing improved drinking water. The respondents were asked to provide information on socio-economic characteristics with respect to their age, sex, marital status, religion, income and level of education. sources of improved drinking water was elicited by asking the respondents to indicate a yes or no response option from the information provided while constraints to access improved drinking water were measured by asking the respondents to indicate their constraints with the following response options not a constraint, minor constraint, major constraint which was scored and ranked.

3. Results and discussion

Respondent's socio-economic characteristics

Table 1 shows data on the socio-economic characteristics of the respondents. Results indicate that more than half of the respondents were above 44 years of age (51.7%), female (54.2%) and the majority of them were married (79.2%), however, the popular religion among the respondents is Islam (64.2%). Further results shows that the respondents had no formal education (53.3%) and 42.5% of them were earning between ₦7,501 - ₦11,500 as their monthly income. It is also observed that half of the respondents (50.0%) had 1-5 persons in their families and took farming as their major occupation (63.3%).

Table 2 shows that majority of the respondents (99.2%) sourced their improved drinking water from the protected dug well and rainwater collection respectively. 30.8% of them indicated that they sourced their water through borehole while 16.7% of the respondents indicated that public tap was their source of improved drinking water.

Table 1. Socio-economic characteristics of the respondents n=120

Variables	Frequency	Percentage	Mean
Age (years)			
20 – 25	9	7.5	45.36
26 – 31	9	7.5	
32 – 37	18	15.0	
38 – 44	22	18.3	
Above 44	62	51.7	
Sex			
Male	55	45.8	
Female	65	54.2	
Marital Status			
Married	95	79.2	
Single	8	6.7	
Divorced	8	6.7	
Widowed	9	7.5	
Religion			
Islam	77	64.2	
Christianity	18	15.0	
Traditional	25	20.8	
Level of education			
No formal education	64	53.3	
Primary education	27	22.5	
Secondary education	9	7.5	
Tertiary education	20	16.7	
Level of income (₦) / month			
3,500 – 7,500	39	32.5	
7,501 – 11,500	51	42.5	
11,501 – 15,500	22	18.3	
15,501– 19,500	8	6.7	₦11721.67
Household size			
1 -5	60	50.0	6.14
6 – 10	50	41.7	
11 – 15	10	8.3	
Occupation			
Teaching	6	5.0	
Trading	24	20.0	
Civil Service	8	6.7	
Artisan	6	5.0	
Farming	76	63.3	

Availability of sources of improved drinking water for use by the respondent's

Table 2. Availability of sources of improved drinking water

Sources of improved drinking water	Yes	No
Borehole	37 (30.8)	83(69.2)
Public tap	20 (16.7)	100 (83.3)
Piped water into dwelling plot	3(2.5)	117 (97.5)
Protected dug well	119 (99.2)	1 (0.8)
Protected spring	4(3.3)	116 (96.7)
Rainwater collection	119 (99.2)	1 (0.8)

Constraints of rural household to access improved drinking water.

Table 3 shows that majority of the respondents (64.2%) were constrained by the broken down of public tap and inadequate source of improved drinking water resulted to the use of river water and stream. Also, 55.0% of the respondents were constrained by poor maintenance of pumping machine and gadgets, long distance to source respectively.

Table 3. Constraints associated with respondent's access to improved drinking water

Constraints	Major	Minor	Not a Constraint	Weighted Score	Mean	Rank
Inadequate rainfall	58(48.3)	13(10.8)	49(40.8)	129	1.08	8th
Long queue	64(53.3)	27(22.5)	29(24.2)	155	1.29	5th
Inadequate storage facilities	59(49.2)	27(22.5)	34(28.3)	145	1.20	7th
Long distance	59(49.2)	27(22.5)	34(28.3)	145	1.20	7th
Broken down of public tap	66(55.0)	29(24.2)	25(20.8)	161	1.34	3rd
Irregular power supply	77(64.2)	13(10.8)	30(25.0)	167	1.39	1st
Cost of water	60(50.0)	33(27.5)	27(22.5)	153	1.28	6th
Poor maintenance of pumping machine and gadgets	33(27.5)	19(15.8)	68(52.5)	85	0.71	9th
Inadequate source of improved drinking water resulted to use of river water & streams	66(55.0)	29(24.2)	25(20.8)	161	1.34	3rd

Relationship between variables in the study

The result of analysis on table 4 indicates that significant relationship exist between the respondents income ($r=0.592$; $p=0.028$) and constraints to access improved drinking water. The implication of this finding is that as the income increases, the constraints is reducing which will translate to respondents ability to overcome the challenges in accessing improved drinking water.

The relationship between the availability of sources of improved drinking water for use and the respondents constraints to access on table 5 indicates that there was a negative correlation between the respondents sources of improved drinking water for use and their constraints ($r= -0.435$; $p=0.001$) which means that the more the availability of the sources of improved drinking water to use the lower the constraints.

Table 4. Relationship between the respondents socio-economic characteristics and constraints to access improved drinking water

Variable	r-value	df	χ^2	p-value	Decision
Age	0.112			0.222	NS
Sex		1	1.061	0.218	NS
Marital Status		3	4.048	0.218	NS
Religion		2	2.657	0.083	NS
Education level		3	4.867	0.096	NS
Income	0.592			0.028	S
Occupation		4	5.792	0.09	NS
Household size	0.066			0.473	NS

Table 5. Relationship between the availability of the respondent's sources of improved drinking water for use and their constraints.

Variables	r-value	p-value	Decision
Availability	-0.435	0.001	Significant

3. Conclusion

This study examined constraints of rural household to access improved drinking water in Oyo state and it was revealed that majority of the respondents are female, married and the sources of improved drinking water available for use among the respondents are protected dug well and rainwater collection. Inadequate source of improved drinking water resulted to use of river water, streams and broken down of public tap were revealed as the major constraints. Significant relationship exist between income, availability of the sources of improved drinking water and the respondents constraints to access improved drinking water

Recommendations

Based on the findings of the study, the following recommendations were made:

1. There should be regular power supply for use in the rural area.
2. Broken tap should be replaced.
3. Improved drinking water source should be adequately provided by the government and non-governmental organization to the rural areas.
4. Good maintenance of pumping machines and gadgets should be encouraged among the community members.

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